COLLABORATORS

LeGrand Kerr, M. D.,
Louis Fisher, M. D.,
Herman B. Sheffield, M. D.,
Elias H. Bartley, B. S., M. D.,
Alfred Cleveland Cotton, A. M., M. D.,
William J. Butler, A. M., M. D.,
E. P. Davis, C. M., M. D.,
J. P. Grozer Griffith, M. D.,
McGuire Newton Griffith, M. D.,
Maynard Ladd, M. D.,
John Ruhrah, M. D.
J. H. Mason Knox, Jr., A. B., M. D.,
Samuel A. Visanska, Ph. G., M. D.,
C. B. Wright, A. B., M. D.,
Henry Enos Tuley, A. B., M. D.,
Walter R. Ramsey, M. D.,
Henry L. Coit, M. D.,
D. J. M. Miller, M. D.,
W. W. Butterworth, M. D.,
T. J. Elterich, M. D.,
Charles Douglass, M. D.,
H. M. McClanahan, M. D.,
A. D. Wilkinson, M. D.,
George M. Wells, M. D.,
J. Ross Synder, M. D.,
John Zahorsky, A. B., M. D.,
Edmund Cautley, M. D., F. R. C. P.,
J. Boyd Barrett, M. D.,
R. Barclay Ness, M. A., M. D.,
S. P. Baumann, M. D., M. R. C. P.,

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New Orleans
Pittsburgh
Detroit
Omaha
Lincoln
Portland
Birmingham
St. Louis
London
Dublin
Glasgow
Johannesburg
VOLUME XXV, 1913

CONTRIBUTORS

Green, Frank K., Ph.G., M.D., Louisville, Ky.
Tuley, Henry Enos, M.D., Louisville, Ky.
Mello-Leitao, M.D., Rio de Janeiro
C. F. Neu, M.D., Indianapolis, Ind.
Hunter, Q. W., M.D., Louisville, Ky.
Steinhardt, Irving D., M.D., New York City.
Rachford, Benjamin K., M.D., Cincinnati, O.
Butler, H. R., A.M., M.D., Atlanta, Ga.
Carman, John, M.D., Plainfield, N. J.
Schwab, Sidney L., M.D., St. Louis, Mo.
Mapes, C. C., M.D., Covington, Ky.
Phillips, John, M.D., Cleveland, Ohio.
Neustaedter, M. D., Ph.D., New York.
Gengenbach, F. P., M.D., Denver.
Grinnan, St. Geo. T., M.D., Richmond, Va.
Allan, John, M.D., B.CH., London.
Allport, Frank, M.D., Chicago, Ill.
Lackey, W Nicholas, M.D., Gallatin, Texas.
Sherill, J. Garland, A.M., M.D., Louisville, Ky.
McMurtrie, Douglas C., New York.
Young, James K., M.D., Philadelphia, Pa.
Rhodes, Clarence A., A.B., M.D., Atlanta, Ga.
Allen, I C., M.D., Houschton, Ga.
Zahorsky, John, M.D., St. Louis, Mo.
Van der Bogert, Frank, Schenectady, N. Y.
Hendon, Geo. A., M.D., Louisville, Ky.
Bell, J. Finley, M.D., Englewood, Ky.
Gray, James, M.D., London, Eng.
Forsyth, David, M.D., D.Sc., F.R.C.P.
Marsh, Percy N., M.B., (Loud) M.R. C.S.
Ransohoff, Joseph, M.D., F.R.C.S., Eng., Cincinnati, Ohio.
Barbour, Philip F., A.M., M.D., Louisville, Ky.
Elterich, Theodore J., M.D., Pittsburgh, Pa.
Ruck, K. V., M.D., Asheville, N. C.
Achard, J. H., M.D., Asheville, N. C.
Patrick, J. King, M. B., Ch.b., B.Sc., D. P. H., Leicester, Eng.
Piorowski, Max, M.D., Berlin, Germany.
Harmsberger, Stephen, M.D., Catlet, Va.

AUTHORS OF DISCUSSIONS BEFORE PEDIATRIC SOCIETIES

Feingold, M., New Orleans.
Dowling, J. J.
Stapler, M. M., Macon, Ga.
Dr. Ruddy, Ga.
Dr. Depuy, Ga.
Miller, Clifton M., Richmond, Va.
Jervey, J. W., Greenville, S. C.
Bird, U. S., Tampa, Fla.
Dupuy, Homer, New Orleans, La.
Stirling, A. W., Atlanta, Ga.
Ledbetter, S. S., Birmingham, Ala.
Dupuy, Homer, New Orleans, La.
Hallock, Chas. W., Charlestown, S. C.
Thigpen, C. H., Montgomery, Ala.
Wylie, C. B., Chattanooga, Tenn.
Miller, Clifton M., Richmond, Va.
Wilcox, Herbert B., New York.
Miner, C. Hill, New York.
Chapin, Henry Dwight, New York.
Hoobler, B. Raymond, New York.
Lusk, Graham, New York.
Adams, Samuel S. Washington, D. C.
Morse, John Lovett, Boston, Mass.
Talbot, Fritz B., Boston, Mass.
LaFetra, Linnaeus Edford, New York.
Pisek, Godfrey R., New York.
Chapin, Henry Dwight, New York.
Schoos, Oscar M., New York.
Dennett, Robert Herbert, New York.
Commiskey, Leo Jon Joseph, New York.
Scott, George Dow, New York.
Hess, Alfred, New York.
Sheffield, Herman B., New York.
Mabbott, Milton, New York.
Love, J. D., Jacksonville, Fla.
Weston, William, Columbia, S. C.
DeBuys, L. R., New Orleans, La.
Acker, George N., Washington, D. C.
Porchheimer, F., Cincinnati.
Herman, Chas., New York.
Machell, H. C., Toronto, Canada.
Blackarder, A. D., Montreal, Canada.
Heiman, Henry, New York.
McLanahan, H. M., Omaha, Neb.
Roth, Thomas Morgan, Boston, Mass.
McClanahan, H. M., Omaha, Neb.
Luas, Walter Palmer, Boston, Mass.
Knox, J. H. Mason, Jr., Baltimore, Md.
Tracy, Martha, Baltimore, Md.
Talbot, Fritz B., M. D., Boston.
Dodd, Walter, M.D.
Foote, Chandler, M.D.
Perterson, Hugo O., M.D., Boston, Mass.
Clark, M. A., Macon.
Williams, Charles L., Columbus.
Dr. Rhodes, Atlanta, Ga.
Hesse, Herman W., Savannah, Ga.
Daniel, John W. Savannah, Ga.
Daniels, Barton W. S., Savannah, Ga.
Dean, J. G., Dawson, Ga.
Champion, W. L., Atlanta, Ga.
Elrod, J. O., Forsythe, Ga.
Port, A. G., Atlanta, Ga.
Lockhart, Vincent D., Maysville, Ga.
Port, A. G., Atlanta, Ga.
Little, Arthur D., Thomasville, Ga.
Bohmar, Dr., Myes, Ga.
Burns, J. H., Clarksville, Ga.
Roberts, Stewart R., Atlanta, Ga.
Starr, C. L., Toronto, Can.
Truslow, Walter, Brooklyn, N. Y.
Abbott, E. G., Portland, Maine.
Soule, R. E., New York City.
McKenzie, B. E., Toronto, Can.
Freiberg, A. H., Cincinnati, Ohio.
Blanchard, Wallace, Chicago, Ill.
Hammond, Rowland B., Providence, R. I.
Hunkin, S. J., San Francisco, Cal.
Young, J. K., Philadelphia, Pa.
Osgood, Robert B., Boston, Mass.
Koplik, Dr., New York City.
Butterworth, W. W., New Orleans.
Lepage, C. F., Manchester, Eng.
Sedwick, J. P., Minneapolis, Minn.
Thomson, John, Edinburg, Scotland.
Kerley, C. G., New York.
Comby, Jules, Paris, France.
Dr. Lees, London, Eng.
Lapage, C. P., Manchester, Eng.
Koplik, Henry, New York.
D'Oelsnitz, Dr.
Vincent, Professor Swale, Winnipeg, Canada.
Barlow, Sir Thomas, London.
Dr. Gossage, London.
Fischer, Louis, New York.
Butterworth, W. W., New Orleans.
Zaace, Professor, Naples.
Weiss, Siegfried, Vienna.
Fetra, L. E. La, New York City.
Leopold, Jerome S., New York City.
Fischer, Louis, New York City.
Nicoll, Matthias, New York City.
Park, William H., New York City.
Hubbard, S. Dana, New York City.
Nicoll, Matthias, Jr., M.D., New York City.
Dr. Northrup, New York City.
Dr. Berg, New York City.
Haynes, Irvin S., New York City.
Dr. Hymen, New York City.
Holt, L. Emmet, New York City.
Hess, Alfred S., New York City.
Kasels, S. Welt., New York City.
Dr. Pease, New York City.
Dr. Hermann, New York City.
Hirsch, I. S., New York City.
Hess, Alfred F., New York City.
Lindemann, Edward, New York City.
Woodruff, I. O., New York City.
Brown, Alan, M. D., New York City.
Freeman, Rowland G., New York City.
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EDITORIAL

CHILD LABOR OR CHILDREN'S WRONGS VS. CHILDREN'S RIGHTS.

Recently the public press of this city and state have brought to light some shocking details as to the prevalence of child labor in the canning factories of this and adjoining states. The papers have in no uncertain tones held up to public derision the proprietors of these places where infants are driven as slaves to their tasks.

The inclusive and undeniable right of children is to childhood, that is, to the life of a child. Not to labor is implicit in every right of the child. The term child labor is a paradox, for when labor begins in the modern industrial sense of that term, the child ceases to be. The child that labors is robbed of its childhood—is no child.

Child labor is one of many paradoxes of our social order in which we face two parallel and related evils, child-labor on the one hand and widespread unemployment on the other. In justice to its citizenship, and in self-defense, that state ought to deal in wise and statesmanlike fashion with both problems. Unemployment entails hardship, misery, deterioration upon the unemployed. Child labor kills its victims or its cripples and maims the unborn children of its survivors.

The new world for the child was born amid the industrial conditions of the nineteenth century, which overwhelmed the child with tasks and burdens never before borne by it. The newer world, which is to follow upon the childhood-endangering epoch of the industrial awakening, is to shield and defend the
child. The new world surrounded the child with an environment to meet which the newer world must fortify the child, that it may triumph. The new world meant an age of children’s wrongs and children’s rights; the newer world presages the righting of children’s wrongs.

The keynote of the newer world’s attitude to the child will be enlightened and efficient justice. The State will put away the uncertain and tinkering methods, which it has heretofore employed in dealing with the child.

Some day a wisely far-seeing State will introduce a system of child pensions or child bounties. Under present economic conditions, child labor cannot be prevented by law—even when loosely drawn and lightly enforced. In the event of the bread-winner of the family being lost through death or desertion, the State ought to allow the needed subsidy to the home, that the child may be kept in school or in the home and kept away from industry. Through what might be called child pensions, which would really be home pensions the State can prevent child labor and maintain the integrity of the home of the widow or deserted wife.

Child labor is a national question not sectional, nor even predominantly Southern. When Sumner was told that slavery was sectional, he replied that while slavery might be sectional, freedom was national. This epigram must be reversed with regard to the labor of women and children; industry is national, but protection is sectional. Even if it were true that no child labor is to be found in the North, and that it abounds only in the South, the North is still more culpable that the South, though the South seems to invite child labor.

The child labor warfare is not one of a multitude of tasks for the social reformer. It is not something over and around which men are to ‘committee’, but a high and exigent cause to which men are to be committed. On the one hand, the National Child Labor Committee can do little or nothing without the united support of the people’s conscience and the people’s will; on the other hand, the National Child Labor Committee ought to inspire and direct public revolt against this iniquity of iniquities. The child labor crusade is a vital thing because
child labor can do the republic fatal hurt. The church ought to have not one child labor Sunday, but fifty-two child labor Sundays in the year, even as the church is not to preach at the workingman one day in the year, but for the workingman every day in the year. Time was when the founder of Christianity said; "Suffer little children to come unto me, for of such is the kingdom of heaven." Time is when those who are causing Christianity to founder may say, "Little children are to come to us that they may suffer, but theirs shall be the tortures of hell."

THE HAND THAT WRECKS THE CRADLE WRECKS THE WORLD

Child labor ought to be immediately repressed and ultimately suppressed that justice may be done to the child. Child labor should be abolished not so much at the behest of the duty of safeguarding the republic, but rather because of the duty of the republic to safeguarding its children. The child labor battle should be waged on the highest possible ground—the right of the child to justice. At the same time, to avert the terrible evils which are sure to follow upon the criminal wastefulness of child labor is the part of high and enlightened statesmanship. We are beginning to plan for the conservation of our national resources, the life and joy of childhood.

Science may cry—save the child for the sake of the future; religion—for the sake of God; education—for the sake of the people; democracy—for the sake of the State; industry—for the lack of efficiency. Conscience cries—save the child for its own sake. For the child is not only the trustee of the past and the hope of the future, but it is the living present, entitled to every protection and security and furtherance which man grants to man, and as much more than is granted to man is required by the defenselessness of the child.

Our democracy ought to lead the world in the things that make for democracy and not in the things that make against democracy, such as big armies and bigger navies. About twenty million dollars will be expended upon the two additional battle-
ships voted by the late Congress, and these will be dead junk within ten or fifteen years. Viewing the present annual income of the National Child Labor Committee, no such resources will be at its command within two hundred years, though child labor be a real and terrible peril, and yellow peril largely the figment of a jaundiced and diseased vision. Let us imitate England not in Dreadnought building, but in fearless safeguarding of our children’s rights.

If it be said that anti-child labor legislation savors of paternalism, let it be answered that the State ought to show a paternal “concern for the safety and defense of the industrial workers”. Soerates said: “Our country is to be loved more and better by far than father and mother.” If we love the State as a mother, then should the State dare to mother its wronged children toilers. “Every man possesses the right to legislate for himself.”—is dimmed into our ears. Does every woman possess the power to legislate for herself. Does every child possess the power to legislate for itself? Surely a democracy owes a special duty to its unenfranchised children and its disfranchised women. The State ought to paternalize; at present it step-paternalizes. The hand that wrecks the cradle wrecks the world. What of a nation that suffers both to be wrecked—the cradle-child and the mother-hand? The State has not hesitated to protect infant industries, and rather big and lusty infants they are, according to the recent admission of one of the chief beneficiaries. That was the wrong kind of paternalism. Now let us have the right kind of paternalism, which shall not protest infant industries, but shall protect infants from industry.

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**TREATMENT OF ACUTE PHARYNGITIS**

By Pharyngitis is here taken to mean any non-diphtheritic inflammation of the pharynx proper, or of the uvula or tonsils. For therapeutic consideration these structures are one, the mucous membrane being histologically almost the same over the tract mentioned.

The treatment is local and general; locally the object is reduction of the swelling and congestion, relief of the pain, and
prevention of complications (otitis media, abscess of the tonsil, suppurating cervical glands, pyemia, etc.). General treatment should aim to sustain the strength of the patient and eliminate the toxins.

In the local treatment the remedies that do harm are numerous. It is safe to say that in the early stages of acute pharyngitis any astringent, however mild, is contraindicated. The physician should not content himself with the statement of many text-books as to the tincture of chloride or iron. Some of the most formidable cases of acute pharyngitis the writer ever saw were due to the thoughtless prescription of ferric chloride. One young man, recently under observation, had great exterior swelling of the neck, enormous edema, and congestion of the entire oropharynx, intense pain, high fever, complete anorexia, a generally alarming condition. A physician, he said, had given him "a bottle" some days before, which he had continued to use according to directions till he found he was growing worse. The "bottle" was found to contain almost pure tincture of iron. This drug is a "favorite prescription" of the pharmacist over the counter, and he usually administers it with little dilution. The writer saw an unfortunate negro girl on the east side not long ago who had gotten a large abscess of the tonsil from continuing to take a strong preparation of ferric chloride. Some one of her own color claiming to be a doctor, had given her what looked to be the pure tincture, a teaspoonful every three hours. If the physician still clings to his old iron habit, let him try tincture of the chloride on his own throat when it is acutely sore, and see how it feels. In the long run, particularly with patients one has not seen before, a safe rule is, use no astringent during the first five days. Should the tissues then seem boggy and the circulation sluggish, apply 20 per cent. silver nitrate on a swab, wash it off with salt solution, and see what the effect is later on. In no early case, at all events, should an astringent ever be put into hands of the patient with directions to use "ever so many hours.

The early local treatment should be simply detergent and antiseptic. In babies, with whom pharyngitis is not so rare as some text-books state, a week solution of sodium bicarbonate and
salt may be given to drink rather freely, with a purge and proper attention to diet. In children old enough to gurgle properly, salt, soda, and boric acid gargles do pretty well; but with these as with older patients, the best way of cleaning the pharynx is the douche. Let the patient hang his head over the edge of the bed or of a table and receive the warm solution into his wide open mouth in a gentle stream from a fountain syringe. This should be done from two to eight times a day, or oftener, according to the conditions. The most threatening cases will often resolve under this treatment with astonishing speed. The outflow from the mouth may be caught in a pus-basin or any convenient vessel; it should be afterwards disinfected with chloride of lime.

The general treatment should be sustaining. "Specifics" are worthless. In streptococcus and staphylococcus throats the general condition is one of simple sepsis, nothing more or less. The infection is often severe, the temperature often running to 105° and 106° F. It is accompanied by irregular chills and sweats and often disappearing for twenty to twenty-four hours, may reappear and run rather high for a day or so longer. This need not occasion special alarm if the other organs are known to be in good condition. Acute pharyngitis is often capable of enlarging the spleen and causing albuminuria—the former especially in children. The possible renal irritation should be borne in mind, and no food allowed that may overburden the kidneys. A milk diet with suitable stimulation is usually indicated. For fever, cold baths, or the cold pack, or cold effusions may be employed, not so much for their effect in reducing temperature as for their stimulating influence on the nervous system. As to prophylaxis, all cases of acute pharyngitis should be considered potentially contagious and isolated accordingly. This rule becomes the more imperative when we remember that acute angina is the symptomatic forerunner of many of the acute infectious diseases.

It would transcend too far the limits of an editorial to touch upon the treatment of the complications we have mentioned. They may, in a great number of cases, be entirely escaped by an intelligent prophylaxis.
IS THERE SCIENTIFIC PLAUSIBILITY FOR MATERNAL IMPRESSIONS?

So much arrant nonsense, humbug and ludicrous absurdity have framed the presentation of writings on maternal impressions, that any physician who values a reputation acquired by years of industrious and intelligent labor, for scientific sobriety, comes to avoid this topic as he would a quicksand. Yet when we state that few obstetricians are able or willing to try to prove their reasonableness and plausibility, still fewer feel inclined to deny the working of so-called maternal impressions. From the days when Jacob evidently a student on embryology of extraordinary ability, got the better of Laban, by the artificial production of streaked goats and cattle, placing "pilled" rods of green poplar, hazel and chestnut before their eyes at the time of impregnation, down to the present time, when we seem to know even less than Jacob did on the subject, there has been a steady contribution of causes of maternal impressions. Although there is a certain amount of argument in the credibility of a view that has been so persistently advocated by many people in many climes, yet with the real investigators, the men who must either have a statement proved or see a reasonable analogy in the working of similar phenomena, a stumbling block has always been felt to faith in maternal impressions, in that there is no means of transmission of "impressions" from the mother to the fetus, or rather embryo.

If mental or physical thoughts, emotions, or actions, can impress themselves upon the growing embryo, they must reach that embryo not through the ordinary course of nerve filaments, but pass successively through a long series of nerveless epithelial cells composing the chorionic villi and the stalk of the allantois, or leap from the mother's blood through the osmotic villous layer to continue via the embryonic blood to its body cells, or pass through the watery amniotic fluid to reach them. It is difficult to believe that force waves capable of stimulating or repressing nutrition can pass along such media as epithelial cells, blood and water.

Not many years ago it would have been much harder to believe there were light rays which could penetrate hitherto
so-called opacities, and that we would be able to see the bones in our hands.

There is an analogous phenomenon connected with impregnation that is quite as marvelous as the above proposition, which we are compelled to believe. When the ovum emitted from the ruptured graffian vesicle enters the fallopian tube, it gently glides with the ciliary wave current toward the uterus. It is met and penetrated by the spermatazoid in the outer third of the fallopian tube. Up to the time that the ovum becomes impregnated, there are no physical changes in the female differing from usual non-pregnant conditions.

But so soon as this floating, unattached ovum becomes impregnated, the entire genital system undergoes a remarkable awakening.

The blood-flow is much increased, the endometrium begins its transformation to decide, a change that is so decided as to constitute one of the most extraordinary of histological metamorphoses and, at times, reflex vomiting in the female.

These changes occur while the ovum is entirely unattached to any cell or cells of the female, while it is slowly moving along the fallopian tube on its way to the uterine cavity, simply touching the surface epithelia of the tube.

When we contemplate and appreciate these phenomena of impregnation, phenomena which we all recognize and accept, there is nothing difficult in the problem of maternal impressions from a theoretical standpoint. Much attention is being given these days by investigators in biology and the allied sciences to the problem of brain and nerve forces, how they are generated, and how they exercise their power, and unless we are very much mistaken, very startling discoveries will be made in the near future, defining and extending the methods by which these forces work. There are, for instance, many data showing that there exists a radiating nerve energy which does not exert itself solely along the course of the nerve fibres, but like the electric fluid, may surcharge its proper conductor and pass through surrounding media. Let the "impressionists" work on, they may yet find themselves correct as well as famous. Only we pray they be mindful of their chronology.
A CONTRIBUTION TO THE LITERATURE OF YOUTHFUL MANUSTRUPRATION.

BY

FRANK K. GREEN, Ph. G., M. D.,
Louisville, Kentucky.

Someone wisely remarked that the very foundation of our modern social structure, i.e., the maintenance of the family and the continuance of human life, rests upon preservation of the sexual instinct, and that its perversion and misuse are most virulent factors in disintegration of the individual and the race!

The principal reason for wishing to add this dissertation to the already abundant literature anent manustrupration during infancy and early childhood is to question the correctness of certain prevailing impressions in connection therewith and to emphasize the following suggestions:

(a) That manustrupration in both sexes is more commonly practiced during infancy, early childhood, adolescence and even in adult life than has hitherto been believed.

(b) That the majority of previous contributions to the literature thereof contain gross exaggerations anent the deleterious mental and physical accomplishments and sequelae believed to necessarily accrue thereto.

(c) That being based upon erroneous premises, necessarily the conclusions reached by the majority of previous writers must be illogical or at least unwarranted by demonstrable clinical facts.

(d) That contrary to prevailing opinion, the attitude of legitimate medical practitioners is largely responsible for per-

*In this connection, the New York Medical Journal editorially remarks: But very few physicians, we fear, have formed a correct estimate of the influence of masturbation on the physical and mental health of those who practice it. The quacks, of course, depict its alleged direful effects in frightful terms, and, unfortunately, some of our text-books are not far behind them. The consequence is that many impressionable persons, conscious of having been more or less addicted to the practice in their youth, fall victims to tormenting remorse, accusing themselves of viciousness and of having brought upon themselves an endless succession of physical and mental abnormalities. They feel convinced that they are rapidly drifting into impotence or that they are doomed to end their days in a madhouse! Hirschkron agrees that the sequelae of masturbation are commonly much exaggerated, that the harmful effects depend chiefly upon the "exhaustion of ex-
cessive senery" and the nervous strain of constant struggle to overcome the vice!

petuation of the existing fallacies and erroneous beliefs, charlatans being accountable only secondarily therefor, since the exaggerated claims made by the latter can be adequately substantiated by citations from ancient and even modern medical literature.

(e) That essentially the fundamental principles concerned in preventing acquisition of vicious habits (including manustrupration) by the young of both sexes involve radical improvement in social, moral and hygienic environments, together with comprehensive early enlightenment anent the so-called mysteries of sex.

Notwithstanding the fact that manustrupration is one of the oldest vices known to humankind, from immemorial the prevailing popular belief has been that, practiced for an extended period by either male or female during childhood or adolescence, there may be expected to invariably ensue one or more of many serious local or constitutional (mental or physical) harmful and abnormal effects; e.g., defective memory, despondency, nervous irritability (the neuroses), bashfulness (diffidence) headache (periodic or constant), neuralgic pains (back and loins), vertigo, nausea and vomiting (digestive disturbances), diminution of strength (staggering gait), frequent involuntary (male) seminal losses (spermatorrhea), nocturnal and diurnal enuresis, neurasthenia, abolition of sexual sensibility, impotence (male) from penile and testicular atrophy, mental and moral perversity, melancholia, and chronic hypochondriacal invalidism. And, as a sequel to these mental and physical possibilities, there may not infrequently be expected: (a) hopeless imbecility, (b) incurable insanity, (c) speedy dissolution!

If existing impressions anent the immediate or remote deleterious consequences of occasional or habitual manustrupration represented even a single iota of truth, there would be presented for contemplation an exceedingly gloomy aspect of sociology; but the facts are that almost without exception such beliefs are based upon nothing more tangible than erroneous premises, fallacies, superstitions and traditions inherited by one ignorant generation from another whose understanding and
appreciation were necessarily infinitely less profound. And, that such inadequate appreciation of questions so vitally important to the youth and adolescent has been permitted to persist, certainly reflects most serious discredit upon those whose duty it should be to enlighten and educate, viz., (a) parents, (b) teachers, (c) physicians.

The statements of others to the contrary notwithstanding, investigation will demonstrate that, in the vast majority of instances, the phenomena commonly believed to be induced by manustrupration are more often than otherwise concomitant symptoms of local or constitutional disorders which may not be intimately nor even remotely associated with the reproductive system. Therefore, based upon observable external evidence, i.e., without thorough anamnesis, it may be distinctly incorrect for the attendant to claim that mental or physical phenomena exhibited bear any relationship whatever to manustrupration! And, the clinical diagnosis being thus erroneous any treatment instituted is necessarily misdirected and grossly misapplied, be it confessed to the everlasting discredit of the physician whose diagnostic conclusions are predicated upon insufficient data obtained by superficial examination and inattention to minor details of clinical investigation and injury.

*Several years ago Holt stated that he had observed nearly fifty examples of youthful manustrupration in private practice, and had been impressed with the great frequency of the mental effects in most cases; however, that they were the cause of the masturbation rather than the effect! Hummel claims that the masturbation of young children is merely a form of specialized tickling without true or major sexual excitement, practically without morbid results, and, as the habit is most readily acquired by previously neurotic children, cause is often mistaken for effect!

Rusel and others express serious doubt whether manustrupration ever induced insanity in those of good mental and physical constitution, whereas there is no hesitancy in assuming that a weak mentality is an almost invariable cause of the vice, that the youth who "mopes around the house" and shuns companionship of his fellows, the spoiled child of overindulgent parents who fear moral contamination by allowing him to mingle in the rough-and-tumble of life, is in greater danger of contracting the habit,—indeed that the desire for seclusion is evidence of a weak mentality.
According to Kellogg, masturbation may be said to be a universal vice existing among animals with instinctive persistency, common among savages, and equally frequent among civilized peoples, appearing in children too young to know what impels them, in single adults of both sexes and even in married persons, as a matter of choice in the mode of indulgence, and if it caused insanity as often as some claim, the whole race would have long since passed into masturbatic degeneracy of mind!

'As to the part supposed to be played by manustrupration in the production of insanity, if all young masturbators are destined to end in an asylum, will it be possible to find enough keepers for them?' (Royer).

While the premise is admitted without serious disputation that: (a) manustrupration may be an abnormal manifestation having its origin in a weakened or depraved mentality, (b) that it is a demoralizing and filthy vice, (c) an inexcusable insult to the laws of nature; yet the fact remains that it is practiced with much greater frequency by the youth, the adolescent and even adults of both sexes than the majority of those who have heretofore written concerning the subject appear willing to admit. Palmer at one time remarked that "of the male human being, it may be said that he begins sexual life as a masturbator!" On the other hand, Parvin is accredited with the statement that masturbation is a rare occurrence in females, being about three-tenths of one per cent., whereas in the male sex it is about three percent.

It requires but superficial investigation to demonstrate that the views of these distinguished authors are distinctly at variance with the facts. Certainly the proportion of masturbating human beings (male or female) from that remote period when "Onan spilled his seed upon the ground" to the present has never reached the minimum of three-tenths of one per cent; and it would be equally as absurd to attempt to maintain the dictum that every individual "began sexual life as a masturbator!"

While in rerum naturæ an approximately correct estimate may be manifestly impossible as to the percentage of either sex who have practiced manustrupration occasionally or habitually,
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yet observation, investigation and inquiry extending over many years warrant the conclusion that the proportion (especially during early youth and adolescence) is infinitely greater than hitherto believed, viz., over eighty-five per cent. in males, and over fifty per cent. in females! Furthermore, the assertion does not seem unreasonable that not two males out of a hundred reach maturity without having practiced the act occasionally or habitually, depending largely upon circumstances, associations, environments, the stability of their mentality, their hygienic and moral surroundings, etc.; and similar statements are equally applicable, except in lesser degree, to the female sex! Hence, the suggestion herein before mentioned, that were the habit fraught with even a modicum of the deleterious accompaniments and sequelae believed to necessarily assures thereto, sociologic conditions would be alarming, and mental and physical

*Robinson agrees that the habit (manustrupration) is as old as the human race, that practically every male has for a longer or shorter period been addicted thereto, that it is a liberal estimate to state that two or three per cent. of the male portion of humanity escape it, and that many species of animals indulge in the habit quite commonly.

A young man desiring to marry had postponed the event from time to time because he had masturbated during early youth and feared he had “destroyed his manhood!” While the practice had been discontinued, he had three seminal emissions per month and thought he might be “hopelessly affected!” The following advice given by the medical gentleman consulted might be aptly applied to other not dissimilar instances: “You say you are a clerk. As you leave your office you mingle in a crowd of brokers, traders, speculators, bankers, men of all trades, professions and crafts. Now, if you will bring me one of those men who has never masturbated, and will swear he never has, I will swear in my turn that he is either a liar or a fool! You frequently meet troops of rosy, healthy, happy school children tripping homeward, laughing, frolicking, rolling and tumbling in the snow, perfect pictures of health and beauty! These are the children of masturbators, their fathers, grandfathers and great-grandfathers being alike guilty of the charge. It is so nearly universal that it is safe for the philosophizer to claim it is universally practiced by the male portion of the human family!”
*It is not alone from the pamphlet of the catchpenny-quack, but from the teachings of the regular profession as well, that he (the youth) gets at least a part of the groundwork of his despair. To say to such youth that in absolute continence, sedatives, circumcision, and the cold sound, lie his only hope is, to my mind, whatever it may be from a moral standpoint, advice at variance with nature and so in conflict with science; and, in face of the exceptional cases of physical wreck that self-abuse has wrought, I would maintain that its influence, recognizing its almost universality of performance in boyhood, has been not only wrongly estimated, but most unwisely exaggerated! (Palmer).

Among the factors which contribute to production of the habit of manustration in infants may be mentioned: (a) oftentimes it is directly attributable to the absurd manner in which infants are dressed, the external genitals being continually overheated by superabundant flannels, (b) in the male an adherent or markedly redundant prepucce with irritation from accumulated smegma, (c) in the female the same statement is more or less applicable to the clitoris, (d) irritation from filth, excoriation from urine, anal and vulvar pruritus or eczema, (e) the presence of anal fissures and vermin about the anus or pudendum, (f) venereal infection accidental or otherwise, (g) the turpitude and wilful misconduct of playmates and nurses especially the vicious "yellow" variety of the latter.

*Nobody can accuse these infants of viciousness, they generally learn the habit from handling by nurses, carried out ignorantly or by design, for some unscrupulous nurses do not hesitate to pacify a turbulent child by titillating its genitals. (Royer).

The operative causes during later childhood are of a distinctly different character: (a) the influence and example of prurient older companions of both sexes who not infrequently practice mutual manustraction, (b) morbid curiosity which prompts children to handle or play with the genitals of each other to determine the difference between male and female, (c) irritation from a prepucce not previously completely liberated from glans or clitoris, (d) the influence of vicious nurses during this critical period must not be underestimated (and, by the way this is not the only vice attributable to the turpitude of this class of caretakers), (e) bicycle-riding constitutes a prolific cause in female children which has hitherto received inadequate consideration.

If perchance the child arrives at school-age without having acquired the habit of manustration, opportunities will then
be encountered in abundance therefor. The majority of schools present numerous predisposing causes; e.g., (a) sedentary tasks which provoke undue congestion of the genitals, (b) long intervals of sitting with crossed legs, (c) genital irritation from swings, slides, the climbing of poles and ropes, (d) the secret dissemination and perusal of erotic literature and pictures, (e) the abandonment of recess intervals which inhibits the amount of desireable relaxation and healthful physical exercise. According to Goldstone, one boy will teach the habit to others, and in this way pollute the whole school; later they practice pederasty, making use of boys and girls of their association; and these are the precursors of the army of moral perverts seen in large cities!

Still later the (so called) select boarding schools, military academies and other similiar institutions afford additional opportunities for acquiring and perpetuating the habit. And it is said that not only are the inmates of such institutions not exempt therefrom, but advanced schools are wholesale propagators of this and other vices of which the scope and intent of this dissertation will not permit specific consideration.

*In this connection, the observation may not be uninteresting that quite recently (1912) a distinguished high-school professor in an adjoining state (Ohio) was suspended for the declaration in an open meeting that at least “ninety per cent. of the school boys, and forty per cent. of the girls, were immoral!” He claimed these estimates were based upon personal investigation, and substantiated by eminent medical authority!*

Manustrupration has been observed in both males and females literally from the cradle to the grave! Even in nurslings onanistic movements (thigh friction, etc.) followed by excitation corresponding to the adult orgasm, are not uncommon; in children two to five years old the abnormal occurrence is frequently encountered, and in early youth and adolescense the vice is even more prevalent. Fournier records several examples of infantile manustrupation; Van Bambake cites three instances in infants of ten to twenty months; one girl of four had been addicted to the vice since early infancy; Goldstone noted the habit in infants of five months and says females practice the act more frequently than males; Rachford mentions the vice in female children of four months, and similar examples are re-
corded by Strasser. Lanphear observes excessive masturbation in a girl of three who indulged in promiscuous sexual intercourse at six; Townsend cites several examples in female children during the first year of life, and similar abnormal occurrences are recorded by Jacobi, Koplik, Adams, Holt, Griffith, Lararabe, Barbour and nearly every other prominent pediatrician in the world. Reports of manuistration in young male children are so common as to excite little comment. In the other extreme of life males of fifty-eight to seventy have been known to practice manuistration (but they belonged to the degenerate class and this was not their only vice), and the habit is not unknown in females over fifty!

The most prolific and unfortunate factor conducting to formation of the demoralizing habit of manuistration (and other vices) in the youth and adolescent of both sexes is unquestionably the profound ignorance concerning the so-called mysteries of sex prevailing among the laity, more particularly the fact that the meaning, uses and abuses of the sexual organs are not clearly explained by parents and others to whom children naturally appeal for adequate enlightenment. It is an astonishing and deplorable fact that many otherwise intelligent people still contend that children at an early age should not be educated in matters pertaining to sexual morality, their physiological being, their procreative functions, and their relation to each other, that their adequate enlightenment in this direction if not altogether impossible could be productive of no beneficial results; in other words, the least said about such matters the better for all concerned, and especially for the young, they should know nothing about such subjects,—at all events, that they will ascertain the principal features at an age sufficiently early for their own good, without instruction from parents or others! This unfortunate and erroneous noli me tangere attitude on the part of parents, teachers, et al has unquestionably been responsible for the physical, mental and moral downfall of many youth and adolescent of both sexes. What is needed primarily is a higher standard of morality for both sexes, and an earlier and more comprehensive knowledge of the law of procreation, together with a better understanding of the signifi-
cance of the passions and emotions more or less directly dependent upon them, as well as the consequences which follow their transgression, gratification, or perversion! Knowledge only can promote and maintain virtue and purity in youthful humanity; yet, in an attempt to conserve virtue, a false sense of modesty (or morality) has induced society (parents, teachers, et al.) to employ every method within reach to subjugate truth and to encourage, foster and perpetuate ignorance!

*False modesty is a besetting evil of our civilization. It should be discouraged by all having the welfare of the race at heart. Griswold inveighs bitterly against the false delicacy which is ashamed to speak of the mystery of life in a proper manner to the child, and prompts teachers and parents to let their boys and girls learn by a terrible experience, perhaps, and often too late, what they were too modest to warn them against.

Certainly the only way to protect the young from physical disaster and moral contamination is by a thorough enlightenment on these vital questions. It is a fatal error to allow them to gain this knowledge from extraneous sources, for reasons too obvious to require enumeration! (Mapes).

Along similar lines another author commenting upon the deplorable lack of sexual enlightenment among the masses inter alia remarks: When we come to the absolute ignorance of their most important function which this taboo entails upon many of our boys and girls, the case becomes most serious. How many of our boys have the true meaning, uses and dignity of the sexual organs delicately but clearly explained by them before the age of puberty, by their fathers; and how many of our girls, by their mothers? The first knowledge most of them obtain concerning this wonderful subject is from the filthy lips of some vulgar servant or prurient older schoolmate! Is it any wonder that driven by natural curiosity and the powerful impulses of awakening sexual consciousness, and ashamed to inquire of those who ought to be their natural instructors, they resort in an ignorance as pitiable as it is deplorable to experiments upon themselves, upon one another, nay—even upon lower animals? Truly, ignorance is the very mother of vice! (Hutchinson).

*Practically all the lower animals with penile generative organs masturbate, and the human child soon learns pleasure can be found in genital titillation! The deplorable fact is admitted that oftentimes small children have been taught the vice by older persons, as has already been sufficiently emphasized herein.
It is time some common-sense ideas were taught regarding certain vices, particularly those which are best relieved by hygienic and moral surroundings. The victims themselves often prove the falsity of the "bugaboos" commonly promulgated, and then leave the regular medical attendant for the wiles of the charlatan. The quackery of reputable medical men in connection with certain vices has tended to extension rather than repression, and led many patients to take refuge from an easily managed evil in one far more dangerous to the health and morals (Stockwell).

The true remedy for this and other forms of mental and physical degeneration is education on broad and general lines, the reading of good literature, out-of-door life, and healthy home environment. Athletic sports and out-door life within legitimate bounds are strongly to be commended, and there is little to fear from manuстрupration where physical culture engrosses public attention. (Russel).

It appears reasonable that prevention of youthful manuстрupration primarily depends upon early education and adequate enlightenment concerning physiological, hygienic and sexual laws. Certainly those entrusted with the care and upbringing of children should utilize every possible means of limiting the demoralizing habit, even though it be frankly admitted the consequences thereof may not be so serious as hitherto believed.

The most effective early preventive measures must necessarily be executed in the home during infancy and early childhood, and essentially consist in: (a) the adequate observance of well-known important hygienic and moral principles, (b) the correction of erroneous ideas so universally prevalent acent the dressing of infants, (c) the requisite early enlightenment of children concerning the so-called mysteries of sex, i.e., the meaning, uses and abuses of the generative organs, thus preventing acquisition of erroneous ideas from others, (d) the employment of not only intelligent but moral and trustworthy nurses.

When acquired by children after entering school, the habit is almost invariably continued, a guilty conscience of evil
YOUTHFUL MANUSTRUPRATION

prompting them to thereafter conceal the vice from parents and attendants except in rare instances.

With reference to preventive measures at school, it has been suggested that during instruction as well as intervals of play, the teacher be required to see that reciprocal manustrupration be not practiced between male pupils. If such practice be detected, the children should be informed in no uncertain language of the possible dangers incident thereto; furthermore, that through lectures and printed matter the parents and guardians should be admonished to fulfill their duties in this respect.

Similar statements will apply with equal force to those in charge of female school children, assuming, of course, that the instructors are likewise females. Masturbation is always a most difficult habit to break, especially in older children; in infants we can do a great deal to mitigate the habit, and to eventually cure it (Goldstone).

As to local measures to be recommended in obstinate manustrupration of male children: An artificial lesion may be produced upon the penis or prepuce by application of the actual cautery, nitric acid or other means. The victim will thus perform abandon the habit until the lesion heals. Another may be then produced, and so on until the habit is broken.

Various mechanical contrivances have been devised for preventing use of the hands in both sexes, and for keeping the thighs widely separated in females, all of which are useful within certain limits. Sleeping bags and other specially constructed night clothing have oftentimes been utilized with beneficial effect.

While elitoridectomy has been occasionally practiced because of inordinate manustrupration in young female children, the operation is merely mentioned to afford opportunity for its condemnation. It would be equally logical to suggest amputation of the male glans penis under similar circumstances.

Although drugs are of doubtful value in treatment of manustrupration of young children, in those older the internal administration of benzoate of sodium, hyoscyamus, camphor, arsenic, belladonna, the bromides of potassium, sodium, ammonium, strontium, etc., may be helpful in restoring normal mental and physical equilibrium. Oftentimes administration of
cod liver oil and other tonics are useful. Particularly should constipation and gastrointestinal derangement if present receive requisite treatment. If there exists any general or local disorder which might excite continuation of the habit, the necessary treatment should be promptly instituted. Daily morning baths and abundant out-door exercise in the case of older children are usually beneficial. While, as remarked by Goldstone, the correction of the habit is not always easy of accomplishment, the prognosis is favorable for ultimate cure in the vast majority of instances.

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The primary and exciting cause is some micro-organism, as the influenzal bacillus, the strepto—and staphylococci, etc. A dust-laden atmosphere, draughts, sudden exposures with chilling of the entire surface, and wet feet, may act as a direct exciting cause. It may occur secondarily to the acute exanthemata and to diphtheria, and is a frequent occurrence in children who are the subject of adenoids and chronic nasopharyngeal catarrh. Children who are convalescing from acute attacks of diarrhea are prone to develop bronchitis, from lowered resistance. It is a frequent complication of whooping-cough, increasing the severity of this condition greatly.

It occurs in rachitis and other nutritional disorders from a lowered power of resistance.

There is primarily a swelling of the mucous membrane of the larger bronchial tubes, with deep injection, followed quickly by a secretion which is largely serum at first, then mucopurulent as the disease progresses. It is usually bilateral and rarely in patches, even when the smaller tubes are involved. The inflammation is limited to the mucous membrane, and when it spreads to the peribronchial tissue the process becomes a bronchopneumonia. If there is a plugging of some of the smaller or capillary bronchial tubes the portion of the lung supplied by these tubes collapses.

If there has been a primary tonsilitis or laryngitis, a low fever and slight cough precede the active symptoms of the bronchitis. It may begin as an acute coryza, with sneezing, discharge from the nose and lacrimation. In mild cases, in which the process is chiefly limited to the larger bronchial tubes, there may be but few symptoms, slight rise in temperature, loss of appetite and cough. A child under five years of age, uninstructed, will swallow all mucus raised in coughing.

In more severe cases in which the smaller tubes are involved,

"Taken from "Diseases of children" by Henry Enos Tuley, M. D."
the child is acutely sick from the beginning. There may be vomiting; the temperature rises to 103° or 104° F., and with the development of the cough there is rapid breathing, with wide dilatation of the alae nasi. The dyspnea is frequently severe, and if any coryza exists it is difficult for the child to nurse. This is especially true where there are nasopharyngeal adenoids.

There is not usually a wide variation in the temperature between morning and evening. There may be an evening drop and a morning exacerbation in rare cases. The temperature usually lasts four or five days, though it may last for a week. It is more easily controlled by hydriatic treatment than the fever of broncho-pneumonia.

The respirations are hurried, frequently as high as 80 per minute, and there may be a decided pallor of the skin of the face. When asleep the skin of the head is bathed in perspiration.

The bowels may be disturbed, especially in young children, and the actions contain much mucus which has been swallowed.

Inspection of the bared chest shows in severe cases an employment of the extraordinary muscles of respiration, and if there is much spasmodic contraction of the bronchial tubes a recession of the suprasternal and clavicular notches.

Palpation of the chest in the first stage may be negative, but during the second stage when there is a secretion of mucus and mucus, bronchial fremitus is easily felt, owing to the thinness of the chest wall. For this reason and because of the large tubes, percussion is of little assistance as a diagnostic measure in this and some other of the pulmonary diseases of childhood.

In the first stage, before secretion has occurred, auscultation reveals sonorous rales if only the larger tubes are affected, and sibilant rales when the smaller tubes are involved. These rales are general in distribution, but heard loudest at the apex. With the advent of the second stage on the second or third day, with mucus thrown out, moist rales are heard. They are large and occur when auscultation is being performed, a small area of lung may be found free from rales entirely for a short while.
ACUTE CATARRHAL BRONCHITIS

Through the rales may be heard the normal vesicular breathing, though over the suprascapular and intrascapular regions the vesicular sound is replaced by a harsh, high-pitched expiratory sound simulating bronchial breathing. This fact should be borne in mind.

The principal diagnosis is from a bronchopneumonia, which may not be possible clinically. A localization of the physical signs of bronchitis and a continuation of the above symptoms beyond four or five days is a very suggestive condition. Dullness over a limited area is also suggestive of consolidation or collapse of a more or less large area of lung.

Older children with acute catarrhal bronchitis usually recover promptly in four to five days; in infants, until entire subsidence of symptoms the condition should be considered serious, because of the possibility of an extension of the process through the thin bronchial wall and the development of a bronchopneumonia.

In the secondary cases, especially following measles, the prognosis should always be guarded.

The child should be kept in one room, if possible, heated by an open fireplace, with windows open at the top and the temperature kept as evenly as possible at between 60° and 65°, never as much as 70°F. The patient should be kept in bed, and several times a day a tent made over it with a sheet and the air impregnated with moist air from a so-called croup kettle or steam spray, which can be medicated with benzoin or eucalyptus.

But little internal medication should be given, beyond a preliminary calomel purge. Frequent doses of syrupy cough mixtures have no place in the treatment of bronchitis.

During the first stage the following tablet is of decided benefit:

R Tartar emetic
   Powd. ipecac     aa gr. 1-100
   Sacch lactis q. s.
   M ft. Tablet No. 1.

These may be given every two hours to a child a year old, unless vomiting occurs. Dover's powders in small doses, gr.
HENRY ENOS TULEY

\( \frac{1}{8} \) or \( \frac{1}{4} \), or codeine sulphate, gr. \( \frac{1}{8} \) or 1-6, may be given when the child is put to bed for the night, if the cough is so persistent as to prevent its sleeping. In the presence of a sensation of tickling in the throat, adding to the cough, the application of a cold, wet compress to the neck, protected by a wide, dry flannel, is of great benefit.

Counter irritation of the chest is of the greatest benefit, mustard plaster giving the best results. One part of Coleman’s powdered mustard is mixed with 6 or 8 parts of flour into a thick paste with cold water, spread between two thin layers of cloth, warmed before the fire and applied to the skin. An edge is lifted from time to time to ascertain the depth of the redness of the skin. When the skin is quite red the plaster is removed and the surface greased with vaseline. Enough paste should be mixed to make two plasters, which are applied back and front at the same time. They are very soothing, as a rule, to a restless, dyspneic, child, until they begin to burn, and helps the cough. They should be reapplied when the skin is pale enough to allow it, probably as often as every four hours. With scanty urine, a teaspoonful of liq. ammon. acetatis in water every three or four hours is of benefit.

Stimulating expectorants can be given older children when the secretion has changed, as

R  Ammon carbonat  3 ss
    Vin ipecac  3 ii
    Syr. laurecerasi  5 ss
    Aquae dest. q.s. ad  3 ii
    M. ft. Sol.

Sig. One teaspoonful every three hours.

Prophylaxis is of the greatest importance. Children subject to lymphatism with adenoids and enlarged tonsils, should, in the spring or summer, have these removed. The importance of fresh air should be emphasized; children should not be started to school under seven years of age. They should have a daily morning bath, followed by a cool sponge and brisk rub until a vigorous reaction is obtained. The cold spinal douche is a great shock and not well borne by the average child.
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The sleeping room at night should preferably not have been used during the day, and if it has, should be thoroughly aired before the child is put to bed. The temperature should not be above 65° F.

The barbarous custom of "hardening" a child by keeping it without shoes or stockings at all seasons is responsible for many of these attacks.

Older children in colder climates should wear under-drawers as soon as bladder control has been established, as there is always a space from stocking top and drawers entirely uncovered.

The chronic form is a direct sequel or an acute bronchitis and occurs in older children who are the subject of nutritional disorders, as rachitis, lymphatism or organic heart lesions, syphilis, etc.

There is a chronic thickening of the mucous membrane, and numerous patches of dilated bronchi constituting either a local or a general emphysema. The mucous membrane is bathed with mucus and mucopurulent secretion.

Cough is the principal symptom, and this is frequently more distressing at night; expectoration in older children is sometimes profuse; the cough may be paroxysmal; dyspnea is often present; usually there is a very slight rise in temperature, not often more than 100°. There is pallor and a clammy skin, the child is listless and has very little endurance, showing little tendency to exercise or exhibiting great fatigue with an increase of coughing on exertion.

The chief differential diagnosis is from pulmonary tuberculosis. In chronic bronchitis the physical signs are general, the temperature not apt to be as high, the wasting not as rapid, the expectoration more profuse.

In children the subject of lymphatism, the prognosis is not very good. If the cough is relieved on the advent of summer the prognosis is better. It is rendered worse by the development of any intercurrent disease.

Nothing is of so much avail in these children as a change in climate, even though it be slight. Removed in the winter to a warm, salubrious climate, free from dampness and winds, in the pine regions, is of the greatest benefit. A place must be chosen
where this is possible to yield excellent results, eggs and milk forming the basis of the extra diet. Sweets of all description where this is possible yield excellent results, eggs and milk forming the basis of the extra diet. Sweets of all description should be denied rigorously. Cod liver oil gives the best possible results, administered pure, 15 to 30 drops after eating, if possible.

DR. C. EVERETT FIELD.

Scientific or business achievement frequently pays but small attention to personality because unfortunately there is but small sentiment in either, at times however the condition is changed and friendship holds its count. Dr. C. Everett Field for many years head of the advertising department of Kress & Owen Co., and newly elected as president of the Holotheol Chemical Company of New York is one of the few who has championed the cause of sentiment in business, and as a result there are a host of friends in both medical and drug circles who are wishing him every success in his new department of effort. Many years experience in private practice and laboratory work coupled with his knowledge of the drug business particularly fit him in directing the course of pharmaceutical specialties compounded for physicians use. Holotheol products are all allied to antiseptic; their formula originating with Dr. Field and every phase of compounding being under his personal supervision, will at all times assure definite and dependable therapy.

Besides being connected with many educational and civic bodies Dr. Field is a member of the American Medical Association, New York State Medical Society, Queens and Nassau County Medical Societies, National Geographical Society, Advertisers League, etc. etc. He is president and founder of the People’s Forum and organizer of Temple Forum and many societies of the “uplift” kind among young men.
NOCTURNAL ENURESIS IN CHILDREN

TREATMENT OF NOCTURNAL ENURESIS IN CHILDREN

By

MELLO-LEITAO,
Lecturer on Children's Diseases in the Medical School, and Assistant Physician to the Children's Hospital, Rio de Janeiro.

Nocturnal enuresis is one of the commonest disorders of childhood. Physiological during the first two years of life, it becomes, if persistent, a very troublesome condition.

Each author has a theory as to its pathogeny, and seeks to bear out its correctness by statistics. From this has resulted a multitude of therapeutic measures, and Olivier rightly says, "Les traitements de l'incontinence nocturne des urines sont si nombreux, si varies, si contradictoires, que leur simple expose sans commentaire fournirait sans doute un grand choix d'expressions techniques et sonores; mais, par contre, il serait fort pauvre d'idées pratiques."

A resume of the principal theories as to the pathogeny of nocturnal enuresis will now be given. Some of the children who suffer from incontinence of urine have an imperfectly developed spinal cord and no treatment is then efficacious. Heubner believes that cases are most frequently due to a hypoplasia of the central nervous system, the condition being merely a persistence after the second year of a physiological occurrence in early life.

Pfister holds that those cases in which enuresis manifests itself after five years of age are due to epilepsy.

Guinon thinks that children who suffer from enuresis always have a nervous inheritance, and Frankl-Hochwart reports that many adults suffering from neurasthenia give a history of enuresis in childhood.

Hutinel and Merklin believe that enuresis is the pollakiuria of the sleeping child.

Freud noted hypertonus of the leg muscles in about one-half of his patients, and therefore attributes the condition to hypertonus of the vesical muscles.

*From British Journal Diseases of Children.
Excessive irritability of the nervous system as a whole or only a local reflex irritability are commonly marked.

Vandenbosch distinguishes the enuresis-spasm, which is due to over-excitability of the vesical centre in the spinal cord, from the enuresis-tic of psychic origin.

Trousseau attributed enuresis to vesical over-irritability; Guyon, on the other hand, attributed it to atony of the sphincter vesicae.

Guinon thinks that enuresis is due to the over-excitability of the vesical fibres associated with a transitory abolition of the sphincter reflex.

Petit distinguishes three kinds of patients: (1) Children who are too lazy to rise from bed; (2) children who sleep so soundly that the warning of the distended bladder is unheeded; (3) children who dream that they are passing urine. Criado and Aguilar and Henoch also incriminate dreams, but Heubner declares that dreams are a mere symptom of enuresis.

Denis Courtade describes two varieties of idiopathic nocturnal enuresis: (1) The atonic, which results from a lack of tone in the external sphincter, with some defect in the nervous reflex mechanism; (2) the irritable, in which there is an exaggerated sensitiveness of the bladder. Both these varieties may exist in combination.

Civiale and Rochet and Jourdanet attribute enuresis to distension of the atonic bladder.

Among the reflex causes the most common are vulvitis and vaginitis in girls and urethritis and balanitis in boys. The seat of irritation may also be in the rectum, e.g. polypus, fissure, ulcer, and, much more frequently, infection with oxyuria. Calculi, tuberculosis and hypertrophy of the bladder have also been met with.

Ruhrah mentions the drinking of too much fluid, especially in the evening, and habitual eating of salt food.

Lewis Smith attributes nocturnal urinary incontinence to over-acidity. Clemens, on the other hand, regards alkalinity of the urine as the cause of the condition.

Children with adenoids are liable to suffer from enuresis.
The statistics of Mygind, Fisher, Gruback, Allaria, Kapsaun and Cautas favour the correctness of this theory; the statistics of Lilang rather oppose it.

Leonard Williams and Hertoghe have noted thyroid insufficiency in children who suffer from enuresis.

Sydney Haas on the other hand reports a case of enuresis associated with hyperthyroidism.

Zanoni considers enuresis a functional disorder of the suprarenals.

Hammonic, studying the question of the relation of phimosis and enuresis, believes that a long adherent prepuce is a factor in the causation.

We believe that enuresis is sometimes due to an alteration of the hormone of the internal secretion of the kidney, which becomes unable to act on the bladder sphincter.

The methods to relieve the condition are as varied as the theories as to its pathogeny.

The following are the principal modes of treatment:

Among the drugs which have been employed by those who believe enuresis due to over-excitability are belladonna, antipyrin and bromide of potassium. Strychnine and hexamethylenamin are sometimes used. In order to improve the acidity alkalies are given.

Clemens recommends sodium phosphate if the urine is alkaline. Leonard Williams uses desiccated thyroid; McCready, Hertoghe and Ruhrah have also obtained satisfactory results with this drug.

Zanoni has cured his patients by the use of adrenalin.

Psychotherapy has also been advocated.

Liebault uses hypnotism; Farez has cured an infant, aged 26 months, by this means, and Cullere reports sixty-four cases and claims to have cured fifty and improved ten. The case of Voisin is less important because he also gave several epidural injections of artificial serum. Cullere uses simple suggestion without hypnotism.

The apparatus used by Genouville acts entirely by suggestion. It consists of two metal plates separated by a piece of absorbent cotton. These plates are connected by wires, each to
one pole of a battery and a bell, and are placed in the bed beneath the child's pelvis. When the child urinates the wet cotton completes the circuit and the bell rings. The child is thus awakened, and in a few nights is frequently cured.

Hydrotherapy was used by Guersant and Underwood with favourable results.

Thure Brandt reports a series of cases cured or improved with massage per rectum.

Electricity has also been employed. Guyon and Ultzmann used faradic currents. Bordier advocates franklinisation, while Stevenson and Weill prefer galvanic currents. Denis Courtade claims to have effected a complete cure in 55 per cent. of his cases by electricity. All these authors support this method by statistics.

Berge reports a case cured with enemata of bismuth subnitrate. Jaboulay has suggested retro-rectal injections of 100 to 150 grm. of artificial serum, and Cahier has recommended subcutaneous injections of 60 to 70 grm. into the perineum, making the injection 1 or 2 cm. on either side of the mid-line.

Babinski and Boisseau report an interesting case in a girl between sixteen and seventeen years of age, whom they treated by lumbar puncture, removing 15 c.c. of fluid. After the second puncture the girl was entirely cured.

Albarran and Cathelin have suggested injections of artificial serum or of a 2 per cent. cocaine solution into the epidural space. This epidural method was used by several authors who consider it acts merely by suggestion. Dent, Valentine and Townsend used this method in the insane with good results. Loumeau claims to have cured 50 per cent. of cases; Luiz Montero, of Chili, has cured 88 per cent., and Kampsauer 75 per cent. In a series of eleven cases Bordot has cured ten, and very remarkable are also the statistics of Masmonteil, Barbier, Sisto and Saceone. On the other hand, in a series of fifteen cases Zubizarreta has cured only two.

Removal of adenoids also cures enuresis. Allaria reported 22 cases, of which 8 were cured and 3 improved; Kapsaun reported 55 cases, of which 50 were cured and 5 improved; and Cautas out of 15 cases cured 13 and improved 2. Lilang ex-
Hammonic performed 187 circumcisions for the purpose of curing enuresis. Of these 130 were cured.

We have employed Cathelin's method, Babinski's method, and renal opotherapy on the patients of the Children's Hospital in Rio de Janeiro. The usual drugs (belladonna, potassium bromide, and the alkalies) were always used before epidural injections, which were tried only in the refractory cases. Several children were cured by drugs; only the seven obstinate cases are reported here, of which 5 were cured with epidural injections, one with renal opotherapy, while 1 was entirely refractory.

Case 1.—Girl, aged 12 years, admitted on May the 10th, 1911. No history of any nervous disease in the family. Full-term child. Breast-fed for twelve months. Smallpox at the age of eight years, nocturnal incontinence of urine since five years. No improvement from the use of bromides and alkalies. Urine: Specific gravity 1010; acidity ($H_2SO_4$) 0.49 per cent.; no pathological elements. Twenty c.c. of artificial serum injected into the epidural space on July the 16th. When seen on July the 28th she had had no more incontinence. Lost sight of.

Case 2.—Boy, aged 11 years, admitted October the 27th, 1911. Full-term child. No nervous disease in the family. Measles at two years. Nervous, over-irritable child. After measles began to suffer from diurnal and nocturnal incontinence. Has also moderate pollakiuria. Belladonna, strychnine, and sodium bicarbonate used successively with no improvement. Examination of urine: In April, 1910, when he was still taking alkalies, specific gravity 1009; acidity ($H_2SO_4$) 0.98 per cent.; urea 11.12 per cent.; chlorides 3.5 per cent.; no albumin; no sugar. Fifteen c.c. of artificial serum were injected into the epidural space on April the 25th. The boy has now been quite free from incontinence for one year and ten months.

Case 3.—Girl, aged 11 years, admitted May the 21st, 1910. Full-term child. Mother hysterical. Patient is a nervous, over-irritable child, and frequently bursts into tears. She has always suffered from enuresis, and at present has also pollakiuria.
No improvement from nux vomica, followed by belladonna and alkalies. Urine examination: Specific gravity 1015; acidity (H\textsubscript{2}SO\textsubscript{4}) 1·05 per cent.; urea 14 per cent.; chlorides 5 per cent. Fifteen c.c. of artificial serum injected into the epidural space on October the 16th, 1910; October the 17th to 19th, no enuresis; October the 20th to 22nd, enuresis; 23rd, 15 c.c. of artificial serum injected into the epidural space; complete recovery.

Case 4.—Boy, aged 9 years, admitted on February the 14th, 1911. Full-term child. Family history unimportant. No illnesses from birth till the present time. Alkalies used with no improvement. Urine examination: Specific gravity 1012; acidity (H\textsubscript{2}SO\textsubscript{4}) 0·47 per cent.; urea 120 per cent.; chlorides 700 per cent.

Fifteen c.c. of artificial serum injected into the epidural space on May the 12th; recovery.

Case 5.—Girl, aged 7 years, admitted April the 11th, 1911. Full-term child. Has had measles. Family history unimportant. No improvement from alkalies and belladonna. Urine examination: Specific gravity 1018; acidity 1·20 per cent.; chlorides 8·00 per cent. Ten c.c. of artificial serum injected into the epidural space on June the 4th; June the 5th to 7th, enuresis; June the 8th, another injection of 10 c.c. of artificial serum; June the 9th to 11th, no enuresis; 11th, enuresis; 13th, no enuresis; 14th to 16th, enuresis; 17th, third injection of 15 c.c. of artificial serum into the epidural space, followed by recovery.

Case 6.—Girl, aged 11 years, admitted on November the 10th, 1909. Full-term child. Mother epileptic, father neurasthenic. Has had measles and whooping-cough; no adenoids; belladonna, strychnine, bromides, and alkalies tried with no improvement. Fifteen c.c. of artificial serum injected into the epidural space on February the 14th, 1910; February the 15th to March the 1st, enuresis as before; on March the 2nd a second injection of 15 c.c. of artificial serum. Enuresis persists till March the 10th, when a third injection of 15 c.c. of artificial serum is given. Enuresis continues. March the 15th, a fourth injection of 10 c.c.; no improvement. Last epidural injection of 15 c.c. of serum on March the 25th without improvement.

On April the 10th lumbar puncture with removal of 10 c.c.
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of fluid (Babinski's method). Enuresis continues. On April the 20th second lumbar puncture with removal of 10 c.c. of fluid. Enuresis as before. On April the 30th a third lumbar puncture with removal of 10 c.c. Enuresis continued, and the patient was lost sight of.

Case 7.—Girl, aged 10 years, admitted on August the 1st, 1910. Full-term child. Breast-fed for fourteen months. Mother suffers from albuminuria and slight oedema, and has had nocturnal incontinence of urine. Patient has had convulsions, whooping-cough, and asthma, nocturnal enuresis and polakiuria since birth. Drugs were tried, with no result. Urine examination: Specific gravity 1010, acidity (H2SO4) 0.96 per cent., urea 6.3 per cent., uric acid 0.266 per cent., chlorides 2.50 per cent. Fifteen c.c. of artificial serum injected into the epidural space on January the 10th, 1911. Enuresis continues till January the 20th. Subsequently epidural injections were given on the 20th, 25th, February the 1st, 3rd, and 5th, without any improvement. Lumbar puncture was next tried. On February the 26th, 25th, March the 2nd and 12th, from 5 c.c. to 10 c.c. of fluid on each occasion, without producing any effect. Finally renal opotherapy was employed. From March the 15th 10 grm. of fresh sheep kidneys were given daily, and after April the 22nd the enuresis was cured. The patient was kept on the kidney treatment till November the 25th.

Our own observations show that epidural injections of artificial serum often cure enuresis. Cathelin's method acts by suggestion.

Our experience of Babinski's method does not convince us of its value as a cure for nocturnal incontinence of urine. We would suggest that insufficiency of the internal secretion of the kidney causes nocturnal enuresis in a few cases, and that a small class of cases may be cured by the administration of fresh kidney. We would also call attention to the low density of urine, whether it be over-acid or normal in acidity.

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NERVOUSNESS IN CHILDREN—ITS CAUSE AND PREVENTION*

CHARLES F. NEU, M.D.
Indianapolis.

There is probably not another term in the realm of symptomatology used as frequently by the sick as that of nervousness in attempting to describe their feelings, especially when suffering from diseases of the nervous system, whether of so-called functional or organic basis. It is also pretty safe to say that there is not another term in medical literature applied to as many different conditions. This being the case, it naturally follows that any attempt to describe or interpret it as a tangible specific subject meets with the relative difficulty encountered in one’s inability to limit its application to a specific condition or group of conditions.

Again and again an attempt has been made to elicit from patients enumerating nervousness as a complaining symptom, definitely and specifically what condition or meaning it was desired to convey, with the almost invariable result of being informed that there was present an indescribable feeling of discomfort and negative feeling-tone, frequently apart from and in addition to any manifest physical or mental instability. Not only is it difficult to define just what is meant by nervousness, but it is also just as difficult to draw the line between what may be termed physiologic or normal conditions of nervousness and pathologic or abnormal states. On the other hand, it is comparatively easy to recognize what we are pleased to call a nervous temperament or a nervous constitutional make-up. It is another question entirely to describe all of the elements that go to make up that temperament or make-up. It has been said “that when an individual cannot endure the ordinary difficulties and conditions of life, or the natural physiologic functions of the various organs of the body without manifesting untoward distress and disturbance, it is plain that there must be some natural infirmity or instability of the nervous system.”

The essential difference between the neurotic adult and the neurotic child is one of degree modified by the influence of

numerous and varied experiences, as well as of a more mature mental and physical development. The child being less under the control of judgment, reason, volition and the emotions, will react more promptly and definitely in relation to the disturbing factors. These reactions are almost wholly outward or objective manifestations, whereas in the adult so many of them are inward or subjective disturbances. As a consequence, the neurotic child is characterized physically by evidence of want of normal nervous balance, signs of irregular nervous action in the various movements of the body musculature, particularly of the extremities, face and speech. Mentally, there is impairment of the power of attention, not necessarily any lack of intelligence, but more particularly a defective, inefficient power of control. Obsessions are often a marked feature in neurotic children, their weaker minds being more apt to become the victims of predominating or overpowering ideas. Moral obliquities, such as lying, thieving, etc., are also common in such children, more the result of an exuberant, romantic, riotous imagination than of any direct conscious or preformed reasoning or judgment.

In attempting to determine and analyze the conditions or factors which are instrumental in laying the foundation of a temperament or constitutional make-up of this nature, it will be found that for all practical purposes they may be included under three distinct groups, namely:

1. Hereditary influences.
2. Nutritional and hygienic conditions.
3. Educational and disciplinary influences.

We cannot with any degree of definiteness explain how it happens, yet at the same time it can scarcely be doubted that every individual inherits in his or her substrata, not only parental, but also ancestral qualities and characteristics of physical and mental make-up, which are ready to spring into activity or function at different periods of life, so that the qualities of one ancestor may come into existence at one period, and those of another ancestor become evident at another period of the individual's life. The single sperm cell, integrating the qualities of generations of male and female ancestors, unites with the germ cell, which in like manner has incorporated the qualities of male and female progenitors, and this combination gives rise
to a new organic product, which, minute as it is, contains in latent form all of the potentialities and actually displays during the evolutionary process many of the characters and qualities of the ancestors of both sides, and in addition, evinces new features as a result of that combination, properties which are unlike the constituents which entered into such original combination. This principle in hereditary transmission is fully recognized by all who have studied the subject throughout the whole realm of creation, not only in the animal, but also in the vegetable kingdom. This principle, furthermore, is being daily put to practical usefulness in the production and development of a better and more highly organized product in the various phases or forms of organic life not human. The human organism is subject to the same organic laws, passes through the same phases, and takes its corresponding part in the ultimate goal of the creation. It may differ to some extent in the degree or form of change and in the time required for their evolution, but the essential fundamental principle is the same.

In considering the question of the hereditary factor or factors transmitted, it is customary to speak of certain predispositions, tendencies or properties in the make-up of the individual, either physical or psychical, or a combination of both, as the hereditary element. These necessarily vary in intensity and number, and are said to be more marked in the transmission of the maternal than of the paternal characters, greater in males than females, and more in those born after the manifestation of definite disorders than before their appearance.

It is still a matter of controversy whether or to what extent so-called acquired characters are transmitted, yet it seems reasonable to assume that even if not transmissible they at least exercise a modifying influence either directly or indirectly on the constitutional make-up of the individual. This fact seems to be fully established when one considers the injurious effects on the offspring of such conditions as alcoholism, syphilis, tuberculosis and so-called functional types of nervous and mental disturbances. Von Ziehen states "that after heredity, chronic alcoholism is the most important factor in the transmission of neuropathic and psychopathic states." It is said that in at least 25 per cent. of individuals afflicted with epilepsy a
history of alcoholism can be obtained in one or both parents. In 1,000 cases of mental defectiveness examined by Fournier, there was a history of alcoholism in the father in 471, in the mother in eighty-four, and in both parents in sixty-five. It is also a rather common observation that children of alcoholics manifest lessened vitality, a low nervous tone, weakened vital organs, less competent to resist and endure disease or fatigue, less power of recuperation; are almost certain to manifest more or less incompetency or non-resistance, and, as a consequence, readily fall victims to the strains, temptation and unsanitary conditions of life. As regards syphilis, no less an authority than Ziehen has found positive indications of syphilis in 10 per cent., and probable syphilis in 17 per cent. of mental defectives. As to tuberculosis, it may be said that while even in mentally healthy children a history of tuberculosis is obtainable in 15 per cent., yet in mental defectives the percentage is much higher, varying from 23 per cent. (Piper) to 56 per cent. (Koliez). Also taking epilepsy as an example of so-called functional nervous disturbance, the influence of heredity is indicated by the fact that in 35 per cent. of epilepsies a history of epilepsy or insanity is traceable in the ancestors or collateral relatives. There is a family history of epilepsy in two-thirds of the inherited cases, insanity in one-third and both in one-tenth.

Improper food, some becoming half-starved, others overfed, others unsuitably fed, improper care and hygiene, never give rise to a good standard of physical or mental development, and such as a consequence, are unable to resist long or endure well those conditions which sap the vigor or poison the system when the test comes. Caulley says "that there is not the shadow of a doubt that on the methods of feeding and rearing infants during the early stages of existence depend the health and strength of the children, and in fact the strength and physique of the nation. One is almost justified in asserting that the health and physique of the nation varies directly as the food supply during infancy and early childhood." Insufficient and improper food means malnutrition, stunted growth, imperfect physical development, inattention, want of concentration, instability, irritability and other evidences of imperfect and retarded cerebral development. If not actually more prone to
contract disease, they are undoubtedly more prone to suffer severely when sickness does overtake them. Just as it is said that a sound body makes for a sound mind, so it is true that a feeble body is often the possessor of a feeble mind or unstable nervous mental make-up.

Proper and sufficient rest and sleep for the young child is only second in importance to that of good and proper food. Regularity in the hours of sleeping, feeding and awake infuses a sense of order which remains with them throughout life. Want of fresh air and sunshine, exposure to extremes of heat or cold, insanitary dwellings and surroundings often lay the foundation for the future instability and susceptibility of the nervous and mental make-up of an individual. Bad light, for example, may cause a great deal of harm to a child, even though the eyesight be good. Often the child seems stupid and slow, nervous, cross and irritable, when in reality the condition is due to the strain of tired eyes and the continued straining of the eyes must be a strain on the nervous system. These induce a more or less morbid restlessness, both mentally and physically, which eventually results in an enfeeblement of will and mental power which renders ineffectual the means employed to correct evils resulting therefrom.

The presence of physical defects or diseased conditions are very often responsible for abnormal nervous manifestations. Defective and bad teeth interfere with the proper mastication of the food, and this in turn leads to digestive disturbances and malnutrition, or to the absorption of septic products from an unclean oral cavity or injurious products of the impaired digestive process. Obstructions in the nasal cavity, adenoids in or catarrhal conditions of the nasopharyngeal cavity, or enlarged tonsils interfere with the process of respiration, lead to deafness, mouth-breathing and all the conditions that may follow that pernicious habit. Defective hearing, when present, often makes the child seem dull, backward, inattentive and irritable, and manifest various nervous and mental deficiencies or abnormalities. Visual defects likewise produce a role of disturbances, greatly interfering with the normal functioning of the nervous and mental activities.

However great and strong may be the hereditary tend-
encies or predispositions, for such after all are what are transmitted, these are not as important or powerful in the evolution and development of the organism that comes into existence as are appropriate and judicious nurture, education and training, which can also more or less modify and neutralize many defects and weaknesses dependent on a bad heredity. It has been truly said that the time of most vital importance in a human being’s life is from birth until the age of two to three years. The most striking characteristic of the new-born child is its unpreparedness for life. The brain centers are in a pitiable state of development. Its special helplessness at birth, its long period of dependence on outside aid is rich in biologic and sociologic significance. It presupposes a specially high development of the protective and fostering care of the parent.

Injudicious education and training alone may not only aggravate or intensify an inherent mischief, but may also give rise to an individual susceptibility or predisposition to nervous or mental derangements. Parents not only transmit the taints and vices of Nature, but too often foster their growth and development by bad example, by foolish training when the mind is very, if not the most susceptible, and a direction given to actions and conduct decisive for life. Parental harshness and neglect, repression of the child’s natural feelings, stifling its natural desire for love and affection, thus tending to drive it to a morbid self-brooding, or compelling it to seek solace in a world of weird, vague and unhealthy fancies. Foolish indulgence, from which it never learns the lesson of self-control or of respect for or recognition of the rights of others is, on the other hand, just as injurious as the former conditions.

Parental affection may be well founded, but too often the parental responsibility seems to begin and end with silly indulgence of the child. Often artificially fed, then pampered and spoiled, it grows without discipline to its desires, without a knowledge of the relations to those about it, and thus handicapped, it becomes domineering, resenting any interference which may oppose its desires, and overbearing on the one hand, or indolent, dissipating and intemperate in the habits of life on the other hand. There is a vast difference between the individual who has been schooled to meet some of the hardships and
difficulties of life, and the individual who has been weakened by protection, whose nervous reactions have been heightened by education and training; the one apparently recovering from a breakdown in a few months, the other often requiring as many years.

The natural pride of some parents in the accomplishments of their children often urges them toward educational and other attainments far beyond their capabilities, and, as a result, collapse follows, from which they practically never recover, and, while not depreciating the value of higher education for those who are in every way fit, it is safe to say that a diploma gained at the expense of an overworked physical and mental organization is certainly a poor investment in life's securities. There is no doubt that such morbid tendencies could be neutralized or rendered harmless by directing their activities along healthier channels by the influence of good education and sound training. Church writes "that a defective education that omits discipline and the cultivation of self-control, thus illy fitting the child for the rude shocks of life, may be a predisposing cause of neurasthenia."

Exhaustrating to meet the various examinations and the tests tend to make mere machines of some children, to impair their ability to reason, to produce instability and irritability of the nervous and mental activities. The evil influence of this over-taxation and strain is often seen in the tendency of many children to act queerly, to disappear from home or to run away from school toward the close of various school terms, such manifestations more frequently occurring in children having a neurotic family history.

Morbid sexual desires, instincts and habits are often generated by pernicious methods utilized by girl nurses in their efforts to quiet the restlessness and discomfort of some children, and such habits eventually lead to grave mental and moral delinquencies.

The psychological influence of those about them is often responsible for the nervous restlessness and waywardness characteristic of many children. There is still another question of a sociologic and economic nature which bears a more or less
direct relationship to and influence on not only the development, but also the resistance and vitality of the organism. It has been fully demonstrated in other forms of animal life that the size of the offspring can be directly influenced by the character of the diet and state of nutrition of the mother, and if this be true of other forms of animal life it must also be true of human life. Furthermore, it cannot be otherwise than that where during the pregnant state or even while nursing her offspring the mother is subjected to unwholesome nutrition, unhealthy environment, overwork physically, worry or excessive strain mentally, has her system saturated with poisons introduced within the body, must lower the vitality and vigor of the offspring.

Another feature is found in the social condition which objects to and interferes with the state of motherhood. Selfish motives, extra expenses, restriction of liberty, added duties and responsibilities incident to the care and rearing of children, desire to wait until more suitable conditions are reached, means utilized to prevent motherhood, one and all cause more or less worry and strain that is so nerve-wasting and dread-inspiring that many previously healthy mentally, physically and morally, become unstable and hysterical, neither fit for wifehood nor motherhood. When such are compelled to permit the pregnant state to run its course, they rarely accept the situation philosophically or perform the duties and functions of motherhood satisfactorily. Under such conditions the maternal instinct cannot be expected to overcome inherent deficiencies of education and preparation for the performance of that function. Maternal instinct cannot recover the energy spent in fear and anguish, nor is it probable that the development of the offspring is not influenced by such conditions.

From all of these considerations some conclusions may be offered as dealing with the difficulties to be overcome. First, we must admit that the unborn child is entitled to certain rights. It has the right to life. It has the right to protection from hereditary taints of degeneracy. It has the right to health. It has the right to Nature's food, which is mother's milk, with this in its normal, healthy condition. It has the right to natural protection, proper care and proper education.
and training. These rights being admitted, they demand the recognition of certain duties and obligations, amongst which may be mentioned a clean and normal life on the part of both parents, both before and after conception; constant supervision and regulation of the mode of life of the mother, particularly during pregnancy and after birth; proper care, feeding, education and training after birth, for if born healthy, babies can generally be brought up healthy by clean, sensible feeding and by reasonable attention to the hygiene and sanitary conditions surrounding it and by proper training of its mental and intellectual faculties. A prominent authority has said "that it is to the condition of the women and children, mentally, morally and physically, that we must look if we have regard for the future of our land." These can be improved by better education of the mothers, by the creation of more favorable conditions of life, and by the prevention and correction of physical defects and faulty tendencies during the early period of growth and development, for, as Goodhart writes, "It is in childhood, if at any time of life, that the opportunity offers of educating the individual out of faulty habits into a better regulated state of his nervous system."

While the solution of the problem involves sociologic, economical, educational and disciplinary difficulties, yet paramount to them stands medical supervision and direction. Consequently, on us as physicians lies the responsibility and rests the duty of advising and assisting to institute those measures looking to their solution. It is a duty incumbent on the medical profession, and one that they owe to humanity and should not shirk, to educate those who are in charge of the rearing and training of children. They should endeavor as far as possible to promulgate such information as will create a healthy public opinion which will not only aim to correct existing evils, but will also seek to prevent their production by restricting procreation to the fit and preventing procreation by the unfit. While it is true that too often but little attention is given, and much medical advice is wasted because of ignorance, carelessness, indifference or criminal neglect of those to whom it is given, yet that is no excuse why they should waver in the performance of their duty to their fellow-creature. Too often this
lack of influence of medical advice given is due to the lower moral standard of the physicians themselves, for one could scarcely expect advice of this character to have much influence if given by those who have been accessory to any interference with Nature's laws. In order to inculcate higher standards of morality into public opinion, it is necessary for the medical profession as a whole to themselves maintain that higher standard.

Assuming a child to be healthy and robust, to be properly fed and clothed, to have as part of its school course proper games and gymnastics, there is no reason why study should impair their health, either physically or mentally, if properly supervised and directed. Constant brain work with very little exercise, with insufficient or improper food, with faulty positions, attitudes or habits, with uncorrected physical defects, with unhygienic surroundings, will tend to impair or destroy the strongest constitution. Long hours of study without recreation interspersed is a trying thing for children to do, as they are probably much more diverse in their ways of thinking than our theories suppose. Certainly there is great risk in overloading the memory of the child with little details and impairing the development of the mental powers. The mental training of childhood, youth and early puberty is a question of paramount importance, as it calls for an education for the daily increasing requirements and competitions of modern life, which are apparently reaching higher and higher standards. One cannot fail to frequently observe the great discrepancy manifested between the views of some doctrinaires of education and the views of those who have practical knowledge of the laws of Nature, and too often the demands and exactions of the educationalist, aided by the over-indulgent and aspiring home influences, determine and produce lasting effects in the lowering of the vitality and resistance of the young child.

To sum up, it may be said that the solution of this problem can never be reached by the sociologist alone, or by the economist, or by the educationalist, or by the disciplinarian, or even by the physician. We can only hope to attain the desired goal by the closest cooperation of all. The sociologist must seek constantly to improve the social and moral conditions of life; the economist to determine ways and means to alleviate the intense
struggle for existence; the educationalist to better understand and direct the intellectual capabilities; the disciplinarian to instill self-reverence, self-knowledge and self-control, and the physician to supervise and direct all such measures as will be most conducive to the development of a healthy body and mind.

An analysis of the situation discloses the fact that an immense amount of money and a great deal of energy is being spent in caring for the nervously unfit individuals throughout the country who are rendered incapable of caring for themselves adequately, and while this is humanitarian and absolutely necessary from every standpoint, yet if the same amount of money and the same amount of energy were spent in determining means and measures to prevent the production of these beings and to give them appropriate rearing, education and training after their creation, a great deal more good would undoubtedly be accomplished. Before radical measures can be carried out, however, the people must be educated to recognize its usefulness and necessity, and the responsibility of this educational propaganda devolves almost wholly on us as physicians.
Meeting of the Southern Medical Association, Jacksonville, Fla.,
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Section on Diseases of Children

Progress in Preventive Medicine. Dr. M. Feingold, New Orleans, La.: The rapid strides of preventive medicine in many of its branches in the South naturally suggested the thought in what way our specialties might serve our country. If we want the citizen to be one able to earn his own living, provide for a family and to contribute to the further advance of humanity, we must provide him with good health and education. It is interesting what an important bearing our specialties have on these necessary requisites for success. A certain system of medical inspection of all the children attending school should be introduced in some form that will allow of the correction of the defects of sight, hearing, breathing, etc., before these defects have done any serious damage, physically or educationally. If a defect that can be corrected be found, the parent or guardian should be notified and advised to have the defect corrected by whomever he chooses. It will not always be necessary that all the examinations be carried on by the specialist. A good deal of the work can be done by the teacher or trained nurse, who could be properly instructed for such examinations by the physician or specialist.

Thrombo—Phlebitis of Orbits By Ozoena Bacillus—Death. Dr. M. Feingold, New Orleans, La.: That many an affection of the eye and the orbit is dependent upon the primary disease of the nose and its adjoining cavities has been well recognized, but certain points need further discussion. I saw, in consultation, a girl of fifteen years who had an edema of the upper and lower lid, so extensive that the eye could not be opened voluntarily. There was a hard infiltration through the upper lid to the depth of the orbit. The temperature was about 101°. The patient denied that there had been any previous affection of the nose. An operation was immediately performed, and an extensive focus of sticky, grayish, gelatinous pus was found and evacuated. Necrotic bone was also discovered in the orbit. The patient stood the opera-
tion well and spent a comfortable night. The next day, however, pulse and temperature gradually rose and patient complained of pain in the head. Probing revealed no further focus, but the edema on the right side had increased and dilated veins were visible over the forehead and nose. Atrophic retinitis was found on each side, with crusts and pus in the middle meatus, under them. On the following day the Killian operation was performed, and pus was found in the frontal and sphenoidal sinuses. After the operation the patient gradually grew worse and died on the night of the following day. The temperature had reached 106.1°, with profuse perspiration and very labored respiration. The pus was found to contain a pure culture of Bacillus mucosus capsulatus. Xo post mortem was obtained. The interesting points in the case are the facts that a sinus affection may be latent for some length of time, and that orbital infection may be brought about by the infection of the adjoining nasal cavities.

**Dr. J. J. Dowling:**

The case is very interesting to me; because it is somewhat in line with one that I had recently, which presented a frontal sinus disease of the ethmoid. I, however, found a different bacillus. The laboratory reported a pure culture of the pneumococcus from the blood and sub-spinal fluid. The patient died of cerebrospinal meningitis. Under preliminary treatment, the headaches, etc., were relieved to some extent; but this mental condition was becoming bad, and so operation was resorted to. His condition was fairly good up to the time that I removed the drainage tube. Before that time, they had found the pneumococcus in the blood; and later, it was found in the fluid. It seems to me that these operations frequently do bring about a general sepsis, which results in death. Ballenger, of Chicago, claims that they often bring about meningitis. When he presents to patients the possibility of operation, he tells them of the chance of such a complication; and I think that we should do so in undertaking operations on the sinuses.

**Prevention and Cure of Deafmuteism. Dr. M. M. Stapler, Macon, Ga.:** Deafmuteism cannot be diagnosed with certainty before the period at which a normal child would begin to speak. although physicians and parents may strong-
ly suspect such a condition before that time. That a large percentage of deafmute children may learn to speak without hearing and to read the lips, is a well-known fact, but that we can sometimes establish the hearing and have some of them hear and talk almost normally, will be news to a large part of the medical profession. Under my care at present there are ten patients who were deafmutes, and now have enough hearing to learn articulation aurally. Some of these hear almost normally, and the hearing may be permanent; yet if an experienced teacher does not take charge and establish a vocabulary, the hearing will be put to no practical purpose and the patients will use manual signs. The sooner deaf children are treated the more quickly the handicap will be removed. It is not impossible however, to get results in cases of long standing; and one cannot tell which cases will improve until they have had treatment. Any theory of deafmutes would be incomplete, if it did not assign a reasonable cause for the labyrinthitis, which is found in about 85 per cent. of all deafmutes.

The theory the writer thinks he has proved is as follows: Adenoids practically close the eustachian tubes and cause the air in the middle ears to become rarefied, so that the pressure on the tympanic membranes becomes greater from the outside. The effect of this unequal pressure is to force the membranes and ossicular chains inward upon the labyrinth. This puts the stapedius muscles on tension, and finally overcomes their contractile power; and the irritation caused thereby brings forth a flow of plastic serum, an inflammation being set up in the labyrinth. In the cure of such cases it is first necessary to remove the cause. The removal of adenoids will open the tubes and equalize the air pressure, but it will not raise the ossicular chains and permit the labyrinthitis to recover. I will show to you an instrument that will raise the stapes from the labyrinth. By the use of this instrument the patient is put in a condition to benefit by the instruction of a special teacher, which is also necessary to this cure.

Dr. Stapler: This shows that taking out adenoids will not do any good, unless you get the children to have a vocabulary. Here is the instrument I use to demonstrate the effect of the adenoids. You can blow into it all you are able, and that is.
what the soft palate will sustain. I will put the instrument into his ears (He did so, and blew into the instrument.) I claim that this see-saw movement, back and forth, makes the ossicular bones move back and forth. I can put on a suction pump, but I would pull up the soft palate. If you hitch up these two little tubes, made to represent the ears,—one to represent the middle ear, and one the labyrinthian side. If you hitch these two and put a little water in, it will make bubbles down here, but will not move over there. I put a little soapy water in there.

Dr. Feingold: Gentlemen, I think that we all owe Dr. Stapler thanks for his paper, which is now open for discussion. Is there any discussion? I wish, if there is, it would be open; so that we may all get the information, and not private. I am sorry that Dr. Shapler's labor meets with so little discussion, but I am sure that we all envy him in his results. I should like to ask him a question. I should like to know how he arrived at the diagnosis of deaf-muteism; because that is conditional upon the result of the treatment. How did Dr. Stapler know this when the patient was still a deaf-mute?

Dr. Ruddy: I should like to know how Dr. Stapler arrives at the conclusion that these cases are absolute labyrinthitis. Those of us who know how much work is being done on that line are aware that in a pure case of labyrinthitis there are some disturbances, such as vertigo, etc.; so it seems to me, while I am not doubting the results at all, that Dr. Stapler has given a wrong interpretation to the condition, which may possibly not have been a labyrinthitis. Again, we know that some cases of deaf-muteism are due to central trouble. The centers are not there, and yet he makes the tremendous statement that eighty-five per cent. of these cases are cured.

Dr. Stapler: No; I said that eighty-five per cent. had labyrinthitis.

Dr. Dupuy: It amounts to the same thing. If he said that eighty-five per cent. had the disease, I think he is mistaken in the diagnosis; so I should like him, in closing the discussion, to dilate on the subject of the diagnosis.
Dr. Stapler, closing the discussion: In reply to the question as to how one arrives at the diagnosis of whether a child is a deaf-mute or not, I would say that it is well understood that if a child does not respond to certain noises or calls, or show some sign of hearing, and also does not speak at the age when a normal child does speak, it is usually considered that he is deaf and mute. Before the eighteenth month, it would not be proper to diagnose him as a deaf-mute. After the eighteenth month, we make this diagnosis by the fact that we cannot demonstrate any practical degree of hearing and cannot get any response in words.

As to the labyrinthitis. I was basing that statement on the generally accepted idea given by the textbooks that had gone into the autopsies of these cases. In these autopsies, the claim is that there was a labyrinthitis in eighty-five per cent. That is my standard. The textbooks claim that eighty-five per cent. of the cases of deaf-muteism are caused by a labyrinthitis. That is the foundation upon which I base my claim that eighty-five per cent. are caused by labyrinthitis; because we know that ordinary inflammation of the middle ear does not shut a child off and show such a pronounced effect as that shown in a deaf-mute. We may have a child for two years, and, all of a sudden, he stops speaking; yet the middle ear is normal. You cannot get him to speak the words that he has been speaking. These cases usually shut off pretty suddenly. For that reason, I think that it is labyrinthitis; because we see no evidence of middle-ear trouble in these cases when they first begin. Of course, we cannot be certain that it is a labyrinthitis; because you cannot get, in a deaf-mute child, thus afflicted, whose other faculties are usually below the normal, the signs that we get in a grown person—nystagmus and other things. These children will not respond to these tests, unless you have been able to get them into school and train them. I have not been so fortunate as to get them into school. I had the Legislature provide a place; and when I tried to get it, somebody else stepped in and took the place; and they turned around and fought me without saying why they were fighting. Therefore, I have been in for all that sort of thing, and have not had a chance to test the matter out so thoroughly as I
should have done. I bring the patient before you, in order to show that something can be done in these cases. This is not a selected case. I have some patients that are better than this one.

Chronic Nasal Diphtheria. Dr. Clifton M. Miller, Richmond, Va.: Primary nasal diphtheria, essentially chronic in type, has been recognized for thirty years; but the textbooks that devote much space to diphtheria and those on the subject of public health do not lay sufficient emphasis upon the existence of this condition, which is probably the cause of many of the epidemics that have been observed. The diagnosis of this condition is fraught with some difficulties, and cannot be positively made without careful rhinological examination and the taking of a culture. It is usually found in children under the age of seven. The prognosis is good, death rarely occurring and paralysis being almost unknown. I have seen six cases of this condition. The diagnosis in all of these was confirmed by a bacteriological examination. It is my opinion that the examination of all dispensary patients presenting a long continued nasal discharge would bring to light many more such cases, and it seems probable that many of our epidemics of diphtheria would be prevented by such care.

Dr. J. W. Jervey, Greenville, S. C.—The question of chronic nasal diphtheria is, I think, one that has been recognized only in recent years to any extent. About fourteen years ago, when on service in the China Dispensary (?) at Charleston, a negro woman of thirty years presented herself to me for treatment, with almost a typical diphtheria covering the right surface of the nares. I was just out of my student days, had very little experience, and had no idea of what I was up against; but after seeing her three times, I had a bacteriological examination made. The Klebs-Loeffler Bacillus was found, and I made a diagnosis of chronic nasal diphtheria. My old preceptor at Charleston looked at me and said that there was no such thing as chronic nasal diphtheria, as diphtheria was an acute infectious disease. Naturally, I was not in a position to argue the matter out with him; but I stuck to the diagnosis, and sent the patient away to a city physician for anti-diphtheritic treatment. This she received, and
recovered from the condition promptly. I was delighted, a year or two afterwards, to run across, in the English Journal of Laryngology, a report of some cases of chronic nasal diphtheria, made by some Englishman—Grant or Turner, or someone; and I sent this article to by former preceptor, to show him that there were some authorities who had recognized chronic nasal diphtheria.

Dr. U. S. Bird, Tampa, Fla.—My experience with diphtheria lately has been almost wholly confined to that class of cases. The general practitioner gets almost all the ordinary cases of diphtheria; and unless they require instrumental work, or special treatment, we seldom see them. I have, however, seen so many of the nasal kind that I consider practically distinctive of nasal diphtheria. My experience is that it is not entirely so mild a condition as Dr. Miller stated at first; because I recall a case that I saw in the office, in which the child had been suffering with nasal discharge for nearly a month. I told her people what was the matter; and, as the child was not very sick, I suggested that we get a bacteriological report before administering antitoxin. I was careful, however, to warn them that the child was liable to have a violent attack of ordinary pharyngeal diphtheria at any time. That night, this happened. The condition extended to the pharynx, and I was unable to reach the house; so someone else was called in. The patient had a severe attack of ordinary pharyngeal diphtheria, and was in extremis for almost a week. I have always taken the precaution, in making a diagnosis of that kind, to guard myself and also try to protect the patient by informing the parents that the child is liable to become seriously sick without any warning; but I have usually made a bacteriological examination before administering antitoxin, as the patients do not often seem sick. I have yet to see a case that I have diagnosed clinically as nasal diphtheria that has not been proved to be diphtheria by the bacteriological report.

Dr. Homer Dupuy, New Orleans, La.—About ten years ago, I commenced to carry on a series of investigations covering four or five years. These must have included certainly as many as fifty cases of what we diagnosed
simply as membranous rhinitis, the question being to prove from the microscope only whether or not the case was one of diphtheria. Out of fifty cases, forty were positively diphtheritic according to the microscope.

As regards the mortality, I recall a death in the Charity Hospital, of an infant nine months old, the death being apparently due, according to the student's statement, to heart-failure. Ten years ago, associated with a pathologist of New Orleans, I conducted an experiment with a family in which six children presented nasal diphtheria, as proved by the microscope, the question being to determine how long the discharge would extend, and what time the microscope would give us the evidence of a negative result. It took these children six weeks. During the interval, we made weekly examinations, and cultures of one, two, three, four, five and six weeks. These remained positive up to the fifth and sixth week. This will give you some idea of the chronicity of a nasal diphtheria. In New Orleans, the recent outbreak of diphtheria has simply served to corroborate what we have been proving in recent years, since the institution of our examinations of school children: that nasal diphtheria is a most potent cause of obscure outbreaks of diphtheria in schools. In one school, the Howard, an outbreak of diphtheria compelled us to undertake an investigation in that school; and we found forty children with nasal diphtheria who were associating with the other children. Therefore, it is a great question; and we, as rhino-laryngologists, can certainly do an enormous amount of missionary work along these lines. We have become so impressed in New Orleans with the seriousness of these cases as being the innocent carriers of infection that the city Board of Health, through its Secretary, has recently assured me that they are going to require two control cultures from the physician in charge of a case of diphtheria—one from the throat, and one from the nose. They contend that it is only in that way that we can hope to cut down these outbreaks of diphtheria, which are usually traceable to the obscure innocent nasal-diphtheria carrier.

Dr. A. W. Stirling, Atlanta, Ga.—I agree with what the previous speakers have said with regard to the seriousness of obscure nasal diphtheria as a possible
source of infection. There is only one point that I think one ought to bear in mind from the standpoint of pathology. It seems to me that it is hardly proved that every case in which one may find diphtheria bacilli is necessarily a case of diphtheria; because, in the presence of an epidemic of diphtheria, it is highly probable that a large number of individuals will have such germs in the nose, seeing that the air is full of them and one draws this air in at every breath. They pass through the nose, and are probably filtered out there; so that the germs would be caught in the nose, if they were in the air. The clinical symptoms of this common form of diphtheria are, however, so comparatively mild that they are likely to pass unnoted. Every case of this kind, while dangerous and a possible source of infection to others, is yet not a case of what one would call true diphtheria of the nose. It would be interesting to distinguish these two classes of cases pathologically from each other. In a case requiring antitoxin, if there was no membrane, one would be justified in saying that the nose had bacilli in it, without being actually on it.

Diphtheria Carriers. Dr. S. S. Ledbetter, Birmingham, Ala.—I have seen quite a number of cases of diphtheria of the nose, nasal diphtheria; but it is only within the last few years that we have recognized the chronicity of diphtheria at all. For that reason, I have kept no records, and have no way of getting at these cases. I should like, however, to report a couple of cases that I have seen recently which, I suppose, according to Dr. Miller's idea, would be classed as chronic. Before doing that, I should like to say that I think that diphtheria carriers should be classed as entirely a different type from cases of chronic diphtheria, for this reason: a diphtheria carrier may have the germs in the tonsils and their crypts for an indefinite period. I have seen cases that for months would respond to the test, and yet the children would be well and going to school. Some of these cases were discovered in school. Without having any fever, sore-throat, or any other symptom, they were found to have the bacillus in the tonsils. I have treated a number of these children with a view to curing them, and have finally had to remove the tonsils. I did not class these cases as chronic diphtheria, but as diphtheria carriers.
SECTION OF PEDIATRICS

Regarding the existence of chronic nasal diphtheria, I would say that I do not know whether I have had a case of this or not. I had an interesting case in a negro child from North Birmingham, a few days ago. The mother stated that the child had been having attacks of choking and difficulty in breathing, and that she thought there was a growth in the nose. Therefore, she wished me to examine it. Recently it had been blowing bloody crusts from the nose. The little negro was rather a curiosity. The mother said to the child, "Open your nose", as if she were asking it to open its mouth; and the little negro expanded its nostrils. Inside both nasal passages, I saw a surface that looked ulcerated. There was no membrane on it whatever, but just an appearance of ulceration. I made smears of it, and the bacteriologist reported it positive. The case was put down as diphtheria. How long it had existed, I do not know; but the mother said that the child had been having bloody crusts for a number of days, and difficulty in breathing for quite a while. It is hard to get accurate histories of negro children. Indeed, it is practically impossible. That case, I suppose, might be classed as chronic nasal diphtheria.

Not long ago, a physician friend of mine, retired from practice and living in the mountains near Birmingham, had allowed his family to go off for a visit. One of the children took diphtheria while away, and was afterwards brought home with enlarged glands and a postnasal discharge. This discharge was quite considerable, and lasted for months. The glands were also enlarged, and some of these enlarged glands broke down and suppurred. I did not class that case as one of nasal diphtheria, although it may have been one of chronic nasal diphtheria; but a younger child, three months after that, contracted a pure and simple nasal diphtheria, evidently from the older child. How long the child had the germs in the nose, I cannot say; but the father had thought that it had a foreign body in its nose for two or three days. On examination, I found no foreign body in the entire nares, nor any evidence of one farther back. I examined the child under rather unfavorable circumstances, at night. On the following day, or two days later, examination showed a membrane in the nose. A culture was made, and it proved positive. The child was four or five
days in recovering from the diphtheria. No cultures were taken after about a week. I did not see the patient any more, as it was apparently well; so I cannot say how long the bacilli remained in the nose. Dr. Miller says that he classes any case as chronic that persists two or three weeks, so that case of mine may be put down as chronic nasal diphtheria; but the peculiar feature about it was the length of time from the first case to the second, in the same family, and the fact that the children had no opportunity to contract the disease elsewhere, living so far away from other people. The older child continued to have postnasal trouble and a nasal discharge. The tonsils were quite small—apparently no larger than normal tonsils; but the glandular condition continued to exist for twelve months, when the glands were removed. They proved to be tubercular. The enlargement of these glands came from an attack of diphtheria, yet a year afterward they showed tuberculosis. I may add that they brought the child in for removal of the tonsils, and they were removed. While quite small, the whole tonsil with its capsule was filled with exudate; and that exudate was tubercular. Whether the tuberculosis was grafted on these tissues as the result of an inflammatory condition brought about by the diphtheritic trouble, I do not know, but apparently that was the source, because the children were living on a mountain eleven hundred feet above the sea-level and were not in communication with any other children, from whom they could have contracted tuberculosis. The whole history is interesting.

Dr. Miller, closing—I am very much obliged to you for the discussion of my paper. This is what I wanted.

Dr. Dupuy spoke of missionary work. A number of cases have been reported that have been seen and observed, but not nearly so many as must have occurred; so the first missionary work that we need is among ourselves. All the textbooks that go to print do not mention this condition. I have recently talked to Ballinger and Phillips, of Chicago, who have written the best text-book of recent years; and neither gives any reference to it. You cannot find any book on pediatrics that mentions it, yet all of you have seen and known of it. I hit at every text-book writer or man connected with pediatrics or rhinology
that I have been able to get at. I think we need a missionary among ourselves. Let our charity begin at home. Go and spread the fact that our duty to the profession demands among ourselves, and not keep our knowledge locked in our own breast and let the public health suffer—not because of selfishness, but probably from laziness.

Dr. Jervey spoke of the difficulty of convincing others. I went to the Board of Health and discussed the matter as to whether I was mistaken as to the conditions present, the general symptomatology and the fact that the children were running around. I finally took a bacteriologist and gave him a good talking to; and then a man who goes around to administer antitoxin. Now he is recognizing such cases. Our diphtheria in Richmond has been materially lessened in the last two years, since I have convinced these people; because the general practitioners are now looking for these cases.

Dr. Bird said that the carriers are rarely seen by specialists. That is true, but the specialists must go among the general practitioners and convince them that they are not dealing with a condition fraught with no danger to others.

I have not had any acute infections, such as he speaks of. I felt that the patients were being immunized and, therefore, did not have the acute condition.

Dr Dupuy spoke of forty out of fifty cases as positive microscopically. I think that if he could have seen the other ten through the entire clinical history of the case, he would more than once have found bacteria. I feel that every case of true membranous rhinitis should be treated as diphtheria until repeated bacteriological examination is negative—not for any other reason than the protection of others. You had better keep ten children housed that have not diphtheria than allow one to go free, even though the bacteriological test may be negative. I think that there is no indication that the causes of school outbreaks are in this line. I distinctly said that I did not confuse this condition with that of diphtheria carriers. Some observers have spoken of diphtheria carriers as chronic diphtheria cases. Unless we have more clinical symptoms than the bacteriological examination, we have no chronic diphtheria, but simply a carrier of diphtheria. The disease frequently ac-
companies other condition, as an atrophic rhinitis. It is found in all cases in which the nasal condition may be abnormal. When diphtheria is about town, you may find many persons with diphtheria bacilli present; but they are incidental, and not causative of the pathological condition found in the nose. I class as chronic the cases of those who have no symptomatology of an acute diphtheria. They may be but a week old, but they have no acute symptoms—no history of a rise of temperature and no depression. Their circulatory condition is good and there is absence of albumen in the urine. You simply have the nasal obstruction with the presence of the bacilli and the pseudo-membrane. These cases I call chronic diphtheria, no matter how old they are.

The Treatment of Chronic Laryngeal Stenosis In Children by Specially Devised Intubation Tubes.

Dr. Homer Dupuy, New Orleans, La.—When a laryngeal stenosis is the result of hyperplastic changes, some form of dilatation is the most logical method of overcoming it. Gradual, systematic dilatation by means of intubation intubation offers very favorable prospects of success. The tube with a low retaining swell and a wide head would seem to meet a want in the treatment of this form of stenosis. In children, hypertrophic laryngitis is largely responsible for a chronic laryngeal stenosis. In this particular affection tracheotomy is more apt to induce connective tissue changes than to effect a final cure. Long pressure, to be effective, must be concentrated at the subglottic and extreme upper tracheal regions. The Dupuy-DePoorter low-retaining swell intubation tube is so constructed that the retaining swell hinges on that portion of the subglottic area which is the seat of constriction. The use of this tube overcomes the stenosis of chronic type and greatly reduces the possibility of dangerous auto-extubations.

Dr. S. S. Ledbetter, Birmingham, Ala.—When the writer of the paper asked me, yesterday, to discuss it, I told him that I had had no experience in that particular class of work—I mean the using tubes to correct these conditions. I have done more than two hundred intubations, all told. I do not remember just how many, as I did not make a.
list of them. Out of these, I have had possibly half a dozen cases that ran over ten or twelve days. One case ran as long as four weeks. Only two cases really gave me any considerable trouble. These were the only two cases that I should say would call for the use of that kind of treatment. In these cases, I did tracheotomy. In one, the child, about six or seven years old, was intubated, the tube being removed on the fifth day; and after about twenty minutes’ interval, the dyspnea became so considerable that the tube had to be replaced. The second removal of the tube also came very near to being disastrous. After the tube had been removed and the gag taken off the child’s mouth, I saw that the child was making desperate efforts to breathe and getting absolutely no air at all. I immediately tried to replace the gag, and could not get the mouth open. I thought that the child was gone. I happened to see a spectacle-case lying on the mantel. It was a shell-shaped case. I got it between the child’s teeth and pried them open, so that I could get the gag back into the mouth; and by that time, the child was unconscious and not breathing at all. It turned black in the face, and then white again. The tube was rapidly replaced, and artificial respiration started up; and eventually the child was restored, after quite a scare. The tube was allowed to remain in for five days more, and then removed again. I took the precaution this time to leave the gag in the mouth. There was no respiration, and the tube was put back without being removed from the extractor. It was replaced in the larynx, and then all was right. After that, I did not consider intubation any further in that child’s case, but did a tracheotomy. This child wore that tracheotomy tube for three years, and never did get so that he could get along with the tracheotomy tube closed. He died three years after the operation, having had a rather remarkable history. A year or so after the operation, he had developed measles. There was considerable swelling of the tissues, with obstruction and dyspnea; and it looked as though he would die from the effect of the choking of the tubes in the trachea, evidently below the tracheotomy tube. He pulled through, however, but six to twelve months later, he developed scarlet fever, and had the same trouble over again. He pulled through that also. A few months afterward,
however, I heard that the child was dead, and found that he had had meningitis. I thought that he had had his share of trouble.

In the other case in which I had the same experience, although not to such an exaggerated extent, when I took the tube out, the child’s breathing would be hard and labored. On one occasion, I left it out for two days; and during this period the child could take no nourishment. I kept that up for thirty days, and then a tracheotomy was done. The tube was allowed to remain in for a couple of weeks, and was then removed. After a short time, the condition developed again; and the tracheotomy had to be done over again. From the time the first intubation was done until the tubes could be left out, the case covered a period of six months. These were the only cases that could be termed chronic and to which Dr. Dupuy’s treatment might be applicable. I did not know of it at that time, and did the tracheotomy instead.

Dr. Homer Dupuy, New Orleans, La., closing the discussion: Of course, I expected no lengthy discussions, simply because possibly I have been one of the unfortunate ones. Fate has thrown such cases into my hands to test my ingenuity; but these six cases have certainly impressed me with the fact that stenosis of this character is one of the Rubicons of laryngology, and the meagre amount of information on the subject that I could discover was simply astounding. There was only one valuable contribution on the subject, made by John Rogers, Jr., of New York, eight years ago; and his suggestion was the intubation tube. He realized, as everybody does who handles these cases, that the ordinary extubations are so frequently life-threatening that there must be something devised to keep the tube in situ. Then the hard rubber tube with silver or rubber pins seemed to be the device that met the indications. That device, however, is complicated; so in my six cases my ingenuity was tested to the utmost until I got light on the subject from Rogers after I had begun my own work. Laryngostomy, a French procedure, which is so formidable in character and so unfeasible in children, consists in making a new pathway. It means the changing of dressings every few hours. Ballinger, in his wonderful work, decides that laryngostomy is
of use in these persistent cases; but when one considers the age of the child and the impossibility of a frequent change of dressings, as well as the fact that the patient must be quiet for days and weeks and months, one can see that laryngostomy will not solve the problem. It must be some form of dilatation, either intra-laryngeal from the start, or merely dilatation below. Schroeder has taught a means of dilatation from below. The tubes are awkward and painful, and are inapplicable to the cases of children; so that my device proved to me a welcome thing. I do not say that it is the last word on the subject; but if fate is as unkind to you as it has been to me in thrusting into your hands the care of such cases, you will welcome anything that promises some relief.

As to the voice, in this last case, six weeks after the last extubation, her voice was clearing up. I have recently heard from her parents, and they say that it is clearing up all along. In the cases in which the patients have lived—three beside the one now reported, which makes four—the voice has returned to about normal. That, however, is a mere bagatelle; for this is a life problem. It means either a victory by dilatation or a consignment to the perpetual wearing of a tube and canula. I think a disabled voice would be rather preferable to that.

The Report of Two Unusual Cases of Nasal Polypus Occurring In Sisters—With the Results of the Operations

Dr. Chas. W. Kollock, Charleston, S. C.—When these patients first came under my care they were nine and twelve years old, and had been affected two and four years, respectively. The elder girl was of average intelligence, while the younger was unmistakably dull, and inclined to be irritable. From a distance of thirty feet the polyps could be distinctly seen projecting from their noses. Before coming under my care both had been operated on several times with only temporary relief. Under chloroform anesthesia I did a most thorough operation upon each. Large masses were removed from the noses. They were brought back in about a month’s time in practically the same condition I first saw them in. The younger child was later operated on again by means of the Killian operation. The frontal sinus either did not exist or was.
so small that it could not be found. The turbinate bones had been destroyed by the pressure of the growths. By breaking through the upper portion of the septum the cavities of the opposite side could be easily treated, without making another external opening. It is now two years since this operation was performed and there has been no recurrence of the growths. The girl has grown rapidly, the hearing has improved markedly, and the mental condition is wonderfully better. About a year later a similar operation was done upon the elder child. The result in this case has not been so good as in the first, as the growths have returned to some extent. I am inclined to think that the polyps involve principally the antra and ethmoid cells, and perhaps the sphenoidal sinuses, but not the frontal. I am convinced that only by the radical operation can any real improvement be expected, and that the opening on the side of the nose, below the inner canthus is indispensable for the thorough removal of the growths.

Dr. J. W. Jervey, Greenville, S. C.—I had the opportunity of seeing these cases some three or four years ago, and they presented a truly remarkable appearance. The photograph does not begin to show the amount of deformity as I recollect it. A year ago, I reported a case at the meeting of the American Laryngological, Rhinological and Otological Society; and, while not wishing to throw any aspersions on Dr. Kollock’s photograph, I wish to say that the deformity in my case was four or five times as great as in his cases. My case was one of long standing, in a man fifty-four years of age, with a sarcomatous tendency in the growth. By complete removal of the growth and removal of the entire middle turbinate, the process was cracked; and the man has been free from any return. I am surprised, as Dr. Kollock’s cases were of so long standing, that the microscopic examination showed no tendency to break down into malignancy.

Dr. Feingold: Was your tumor a fibromyxoma?

Dr. C. W. Kollock, Charleston, S.C., closing the discussion: Yes; it was a fibromy. The remarkable thing is that these cases should have occurred in sisters. An important point in treating cases of this kind is that they should be treated not only through the natural openings, but also through an
opening high up on the side of the nose. The latter is an important adjuvant to the operation. This opening was large enough for me to put in my little finger and feel the entire area of the cavities of the antrum. This gave me a much better idea of the situation than I should have obtained if I had had to operate from below; and, having the two openings, it was much easier to work around and free the nasal cavities of these growths. To one who had not done a case of this kind, it would not seem so difficult to do this; but after I thought that I had freed the cavities of the growths, the introduction of the finger would show me that more had dropped into the places of the others that had been removed. It seemed an unending job to get the cavities thoroughly clear.

Nail Occluding Third Bronchial Ramus; Upper Bronchoscopy; Recovery

Dr. J. W. Jervey, Greenville, S. C.—The following case is interesting, because of the child and the size of the foreign body. The patient was a white boy, 3½ years old, who had inspired a nail five days before I saw him. An X-ray examination showed it lying diagonally, head down, about the center of the chest. The classical symptoms of active pneumonia were present. The Jackson method of bronchoscopy was used in this operation, except that the open speculum, without a slide, was employed. It was found that the point of the nail, directed obliquely upwards, was imbedded in the left side of the tracheal wall, a half inch or more above the bifurcation. On account of the size of the nail, it was impossible to use forceps. Recourse was had therefore, to a blunt wire hook. The point of the nail was released by gentle manipulation downward, and the bronchosopic tube was slid quickly down so as to include the nail point in its orifice. The tube was then gently pressed onward until about half the length of the nail was included in its lumen, and the hook was laid along side of the nail and firmly rotated on its long axis, so as to press the nail snugly against the inner wall of the tube. Hook, nail and tube were withdrawn together in one movement. There was no shock or other postoperative complication. The following morning the father of the child
insisted on taking the patient home. This necessitated a 50 mile railroad journey, which caused a recrudescence of pneumonia. It was of a severe character, running a typical course of about nine days, and was followed by convalescence without further complications.

Dr. Feingold: We ought to congratulate Dr. Jervey on his fortunate result, but I think that it was due principally to the resistance of the child. I am sure that you have all had similar experiences.

Dr. C. H. Thigpen, Montgomery, Ala.:

Dr. Jervey is to be congratulated. I do not think that this radiograph gives him technique justice. From my observation, I can corroborate Dr. Jervey’s views. I reported a case a year ago. It was published in the October, 1911, issue of the Southern Medical Journal, and was that of a child who had swallowed a six-penny nail in a similar position to that shown here. It was removed by means of superior bronchoscopy, with good results; and the child went home on the fourth day. It is not always easy to remove a metallic foreign body without tracheotomy, unless you have a special instrument.

Dr. U. S. Bird, Tampa, Fla.: The Von Eichen forceps is the best instrument for the removal of metallic foreign bodies in the bronchus.

Intra-Nasal Deformities With Their Attendant Sequelae.

Dr. C. B. Wylie, Chattanooga, Tenn.—The opinions of eminent men as to the causes of intra-nasal deformities vary greatly. Personally, I am of the belief that faulty adjustment of forceps during an instrumental delivery might produce such a condition. Traumatism during the period of adolescence might also produce a deformity. Another condition that I believe to be responsible for some septal deflection is hypertrophy of the inferior or middle turbinated bone. Intransal deformities are of importance only in proportion to the amount of obstruction to drainage, respiration or ventilation which they produce.

Dr. Clifton M. Miller, Richmond, Va.—I have been very much interested in Dr. Wylie’s paper. I think that this question of intranasal deformities is a very important and a broad one. I believe that he has laid insufficient stress.
on the varieties of pain that we meet with in such cases. I find that it is for pain, as often as for any other reason, that patients present themselves at my office.

I recall a case that I saw in consultation, five or six years ago. The patient was one of the most powerful men physically that I am acquainted with. I was summoned by his physician, thinking that he had acute inflammation of the maxillary sinus. When I got there, his physician told me that he had had half a grain of morphine by the mouth and hypodermically in the previous five hours, the last dose having been half a grain hypodermically, an hour and a half before my arrival. There was no inflammation of the maxillary sinus, and no pressure in his ethmoid region; but there was a very large septal spur, far back on the septum, pressing on the inferior turbinate. This quantity of morphine had given absolutely no relief. He was in as great pain as before he had taken it. He had contracted an acute rhinitis, which was then in the second stage. Cocaine and adrenalin, locally applied, gave relief within an hour and a half or two hours. In spite of this, he refused to have the spur removed; and he had a second attack, after which he passed out of my hands. I refused to tinker with it any longer.

My experience with these high deflections is along the line of Dr. Manning's and Dr. Dowling's remarks yesterday; that is, that they produce eye symptoms. I have under treatment a girl of fourteen years, who had made the rounds of the oculists of my town. Her mother had been told that she was a school-shirker, because they found a refractive error of twenty-five in one eye, and fifteen in the other, with absolute muscular balance. They said that she pretended to have headaches, because she did not want to work. Her family physician brought her to me with this history, and said, "There must be something wrong. I have been an attendant of the family for years, and know that she is an ambitious girl and wants to go to school. At any rate she wants to read novels, and cannot even do that."

I found that a deflection of the perpendicular plate of the ethmoid was causing great congestion and deficiency of drainage. The optic fundi were perfectly normal. Her variation without correcting lenses and with them was one. I told the mother and the physician the condition that I had found
present. She had just arrived at the age of puberty. Her bones were still developing, and also her sinuses; and I thought that if I could tide her along for a year or a year and a half, I should prefer not to do an extensive nasal operation for a while. Adrenalin and persistent drainage kept the congestion down. I gave her the weak correcting lenses that she required, and she can now read for hours with comfort.

I have had a number of such patients, in whom the symptoms of pain about the head almost anywhere was due to this matter of deficient intranasal drainage. Another experience that all of us have had is with patients presenting themselves with enlarged tonsils, showing infection. They have probably passed to the age when the adenoids have shrunken and are not offering any obstruction; but a nasal obstruction of some kind is present, particularly a spur interfering with the inferior turbinate. If you remove the spurs, you often do not have to take out the tonsils; although this is sometimes necessary in these cases, as they do not recover without having this done. My experience is that washing out the tonsil-crypts after the removal of the spur will often cause the tonsil to shrink down to normal; so that the patients pass years without any further attacks of tonsilitis, and their digestive disturbances improve. I do not like the term, "operative interference." I like that of "operative intervention," because I do not think that surgical work is interfering. I believe that we surgeons should sit down on that term of "interference."

I think that a young operator who is a right-handed man will find that in a submucous resection he can operate better from the right-hand side. The resilience of the septum is such that if you do the operation with the instruments indicated by Ballinger, you can draw the cartilage into any position you want. He advocates that, particularly in the beginning operations. He finds that a great many patients, (this is an operative point in the technique of anesthesia) are nervous and high-strung, and require a general anesthetic; and he always accedes to this request. At the meeting of the American Laryngological, Rhinological and Otological Association, Dr. Mosier (or Mauser), of Boston, advocated the use of a general anesthetic, because he said that his patients were nervous
and required it; but he lost courage because the men have frequently done submucous resection after having the ether withdrawn, and concluded my operation without putting the ether-cone over the head again, having the patient during the final steps of the operation able to look at me. I have them put in a semi-upright position on the folding operating table. In using general anesthesia, this gives me great comfort; and I have had very little trouble in withdrawing the anesthetic in these cases.

Dr. C. B. Wylie, Chattanooga, Tenn.—There are only a few points that I wish to speak of in closing this discussion, and one of these is with regard to submucous work, making the initial incision on the right side. I said that for the reason that nine-tenths of rhinologists are right-handed. In addition to that, Dr. Miller spoke of the flexibility of the septum in the developed portion. My experience has been that at least fifty per cent. of these septa are so tense and hard that the pressure required to straighten them and draw them to the opposite side is so great that the surgeon is liable to lose his sense of touch and not know how hard he is pushing. If your instruments are sharp, you are likely to cut into the cartilage. If the vomer is much developed and the ethmoid plate, far back, is very thin, you will, if you exert much pressure, get into trouble on the opposite side.
RETROSPECT OF CURRENT PEDIATRIC LITERATURE.

Infectious Diseases
Under the Charge of
ST. GEO. T. GRINNAN, M. D.
Chief of Clinic in Practice of Medicine, Medical College of Virginia; Visiting Pediatrician, Memorial Hospital, Richmond, Va.

Pathological Changes of the Pharyngeal Mucosa, an Early Symptom of Poliomyelitis, by M. Neustaedter, M.D., Ph.D., New York (New York Medical Journal, 14th September 1912).—After acknowledging that we have made great strides in our knowledge of the pathology, mode of infection, contagiousness, and method of entry into the body, the writer goes on to say that we still need a method of diagnosing the condition in the prodromal stage before the onset of the paralysis. For while the cytological findings of the cerebro-spinal fluid are, when positive, quite pathognomonic before the onset of the paralysis, lumbar puncture cannot be resorted to in every case, especially in those in which the onset is mild or masked, as it so often is by gastro-intestinal symptoms. The onset of the paralysis in these cases, is so sudden that it comes like a bolt from the blue sky, when least expected, and that any sign which could give us the least warning would be of the greatest importance.

In searching for a set of symptoms which will prove a guide to further knowledge of the disease, the writer turned to the pathological conditions. These are now recognized as uniform but varying in intensity. The pathological findings are oedema of the cord and brain, a circumcellular and circumvascular exudate which extends from the pia circumvascular lymph spaces into the grey matter, and into the spinal ganglia, and a hyperæmia of the brain and cord.

Hæmorrhages are also spoken of as pathognomonic of this disease. In connection with these facts we must take into consideration the point where the trouble starts, which is in the nasopharynx, and the fact that the patients, being mostly infants, almost invariably swallow the discharges from that region.

Remembering the toxins which the infective agent produces we must realize that the condition is a constitutional one, that we shall therefore get as one of the prodromal symptoms fever and, considering its sight of entry, we should expect to get signs in the nasopharynx.

These Dr. Neustaedter says have been invariably present in the 52 cases which he has seen in the last two years. He finds that there is not the ordinary condition of redness and hyperæmia of the mucosa of the throat, so common in the other infectious diseases of infancy, but that the pharyngeal mucous membrane is anaemic, glistening, and oedematous, and covered with a frothy serous exudate quite analogous to the oedema of the cord in this condition. This condition appears quite early, and persists even for some weeks after the appearance of the paralysis.

This sign Dr. Neustaedter considers as quite pathognomonic, and, when taken along with the other signs, should give a clear indication of the necessity for lumbar puncture. The other two signs which he lays most stress on are the presence of headache and pain. The former in infants can only be surmised from the fact that although the child is not comatose, and the intellect is always clear, it is giddy and drowsy; signs of which older children always make some complaint. This he thinks depends on the
fact that although there is hyperemia of the brain and cord there is no increase in the amount of the cerebro-spinal fluid, as there is in meningitis, where coma and loss of intelligence are the rule.

The pain depends on the fact that there is always some infiltration of the spinal ganglia, especially in the lumbar region. As the result of this the children are found with their extremities in a flexed position, and any attempt at extension or passive movement will cause such pain that the patient cries out when approached by the doctor or nurse.

Dr. Neustaedter goes on to say that the latter symptoms of paralysis do not concern us, as they are only too common and easily recognized, but in conclusion emphasises the invariable symptom complex which he has described, and lays special stress on the presence of the signs to be sought and found in the nasopharynx.


Experimental research has been prosecuted with vigor during the past year, resulting in several contributions of importance to our knowledge of this disease. Flexner has made a number of interesting contributions to our knowledge of the nature and properties of this filterable virus. It is highly resistant to drying, light, and chemical action. In dust it survives weeks and months, and has been detected in one instance in the sweepings of a room occupied by a patient suffering from the disease.

The point which is at present attracting the greatest interest is the question of the routes of invasion of the virus, and the mode of spreading the infection. The most recent experimental evidence on this point appears to be somewhat contradictory. The virus had been demonstrated in the nasopharyngeal mucosa and tonsils of monkeys and human beings infected with the disease, and Flexner had expressed the view that the nasal mucous membrane is the site both of ingress and of egress of the virus, of poliomyelitis in man, but until recently all had reported negative attempts to demonstrate the virus in the secretions of the nasopharynx and intestines. Such a demonstration is necessary if we are to accept the view that the virus is eliminated through the mucous membrane, and disseminated in coughing and speaking through the means of active and passive carriers. The demonstration of the virus in the secretions of healthy persons would complete the evidence in favor of this mode of infection.

A Case of Delayed Development in a Boy Treated With Thymus Gland, by Drs. C. G. Kerly and S. P. Beebe (The Amer. Jour. of the Med. Sc., August, 1912).—The physiology of the thymus gland is very imperfectly understood. It seems to play a very important part in the economy of life, especially in the younger years of life. The thymus remains in active conditions during the presexual life. The thymus also seems to bear some relation to the development of the skeleton. There has been no active substance found in the thymus. For therapeutic purposes the whole gland, either fresh or dried, has been used.

Dr. Kerley used dessicated thymus gland in a boy that had reached sixteen years without sexual development. He was undersized, had ceased to grow, his genitals were small and undeveloped and the testicles were not in the scrotum. 15 grains of the thymus extract was given daily. At the end of six months he was much improved and when he was seventeen years and ten months old he had his first erection. In 18 months under treatment there was a gain of 3 inches in height after he was 17 years old, and 19.5 pounds in weight when there had been no growth according to the mother's statement for two years and nine months before. The sexual organs are apparently normal and well developed.
Infant Feeding in Health and Disease

Under the Charge of

MAURICE OLIVER MACID, M. D.

Adjunct Pediatrician Beth David Hospital, New York City; Assistant Visiting Physician, O. P. D., Pediatrics, Cornell University Medical College; Formerly Physician in Charge of Infants' Milk Depot of the New York Milk Committee, etc., etc.

Maternal Feeding.—In American Journal of Obstetrics and Diseases of Women and Children, November, 1912. J. P. Sedgwick well puts it, "Maternal feeding should be the keystone of the propaganda for the prevention of infant mortality." From the study of replies received in answer to questions asked, the author concludes that the number of mothers who nurse their infants can be increased. The methods by which this may be done are discussed at some length. The article concludes with a request that all join in the dissemination of information concerning the importance, possibility, and technic of breast feeding.

Sugar of Breast Milk.—Monatsschrift Fur Kinderheilkunde.—F. Lust calls attention to the fact that, while the literature abounds in various articles on the proteid and fat content of human milk, very little has been written about the sugar. Lust examined the sugar from the milk of twenty-five women and found that the average percentage of sugar was 7.1 per cent. The least amount was 5.5 per cent, and the greatest amount 8.5 per cent. Thus it is seen that some breast milk contains thirty grammes more milk sugar in a litre than others. Lust shows that a large amount of milk sugar in breast milk may be the cause of diabetes, while a small amount, on the other hand, may cause constipation. Lust experimented to see whether adding sugar to the mother's diet would increase the amount of sugar in the milk. In some cases the percentage of the sugar in the milk was slightly increased by giving 100 grammes of malt extract to the mother daily, while in other cases the percentage of sugar was not affected.

Infant Feeding in Its Relation to Infant Mortality.—Dr. Joseph E. Winters made an address on this subject before the New York Academy of Medicine (Medical Record). In this he pointed out the enormous mortality now prevailing in the first months of life and contended that this could in large measure be prevented if mothers universally could be induced to nurse their infants. That women could, as a rule, be brought to do this had been shown in some of the European schools for midwives. The fact that mothers did not nurse their infants more generally was due to a very large extent to the obstetricians and midwives, and the time had now come when there should be a change in this respect. The act of parturition was only half completed when the child was delivered, and it ought to be realized that it was as essential to the mother as to the child that the latter should be nursed at the breast during the puerperium. At the end of utero-gestation the uterus and its blood-vessels were enormously enlarged, and in order that involution should be successfully accomplished it was necessary that the organ should contract powerfully and continuously. This could be secured only by the stimulus afforded by the act of nursing. Every time that the infant took the breast the uterus could be felt to contract firmly, and by this nursing, post-partum hemorrhage could be prevented and perfect involution effected. It could thus be seen that most of the evils, such as uterine displacements, etc., which now make women chronic sufferers and bring them to the gynecologists could be avoided if nursing at the breast were more generally practised. As to the infant, the colostrum was exactly what it required at the time, and the green stools which it often caused were entirely physiological. The vomiting not infrequently observed was really of no consequence. It was a common practice to give the new-born
infant water, but this was a mistake, as it made it refuse to take the breast. It should be put to the breast just as soon as the mother had received proper attention, and during the colostrum period it should be allowed to nurse as often and as long as it would. It was not necessary that breast milk should be the exclusive food of the child for a very long period, and as early as the second month it might be allowed one bottle of properly prepared cows' milk with advantage. In this way the mother could have an undisturbed night's repose, and the weaning could be gradually and easily accomplished. As a rule, women nursed their infants for much too long a time. The only substitute for mothers' milk was cows' milk, properly modified. The young infant required a strictly animal food, and proprietary foods were injurious. Physiology was the keynote of infant feeding. The food should be of the composition of the body, and that which he had elaborated from the top half-ounce of cream was based strictly upon physiological principles and was identical with mothers' milk. The protein was floeculent, and would thus pass freely through the extremely narrow orifice of the infant's pylorus.

"Some Errors in Infant Feeding" was the title of the paper by Dr. Arthur D. Holmes. Jour. M. S. M. S. The writer attributed the greater portion of infant mortality to improper feeding, and the most essential feature in feeding, reform, he considered the education of the physician and through him the proper training of nurses and mothers. The physician who attended the confinement should also give directions in regard to the feeding and proper care of the infant, which matter was too often neglected. Dr. Holmes emphasized strongly the advisability of breast feeding, which was too frequently relinquished for comparatively unimportant reasons. Breast feeding should be continued until the ninth month. Czerny Keller and Finklestein maintain that with rare exceptions, every mother can nurse her child if the technique is right. Night feeding should be cut down as early as possible. A common error made by physicians is to permit the use of the nursing bottle before the secretion of milk is well established. The speaker emphasized the importance of regular feeding intervals, which should not be less than three hours. Each babe should be studied and dealt with as conditions demanded and not made to conform to the so-called average baby which in the opinion of the essayist did not exist.

The paper which was somewhat lengthy does not lend itself satisfactorily to abstracting, consequently much valuable information has been omitted.

Influence of High Protein Feeding on the General Metabolism, Intestinal Flora and Temperature of Infants.—In this series of five observations upon three infants by L. E. Holland, P. A. Levene (Amer. Jour. Dis. Child., 1912, iv. 265) with clinical observations by A. Brown, bacteriological by M. Wollstein, and metabolic by A. M. Courtney and J. A. Moore, a 'synthetic' food was employed. In order to secure a diet containing the maximum part of the caloric requirement in form of protein, milk had to be avoided as the solvent of the casein, as such a mixture generally gave too high a caloric value to the food. The casein was therefore dissolved with the addition of a solution of sodium hydrate; the final mixture being, however, rather on the acid than on the alkaline side. The following facts were noted by the various observers. Alimentary fever may under certain conditions occur in infants after administration of casein of cow's milk and perhaps of other proteins. The rise of the body temperature was observed only when the food mixture was made up so as to contain about 6 per cent. of protein (chiefly casein) and a minimal quantity, only about 150 to 175 c.c. of milk daily. The rise of body temperature was invariably accompanied by a retention of chlorids, which, however, usually preceded the febrile attack by two or three days. After the first rise of temperature the fever persisted so long as the diet was continued, but in every instance promptly disappeared as soon as the food was changed. For this reason and since the bacterial conditions of the intestines noted dur-
ing the period of the "synthetic" food were not different from those noted during the preceding period, the fever is apparently due to the direct action of the absorbed protein. It would appear that the changes in the food influenced the chemistry of the excreta more than they did the bacteriology. For while the chemical changes resulting from the food variations differed considerably in the individual cases, the bacteriology changed along the same general lines in all. In view of this fact and of the slow changes in the intestinal flora, such changes would seem to have but a limited application for therapeutic purposes, though a very definite one when the food changes can be made sufficiently great. It seems clear from these observations that one may use considerably higher percentages of protein in milk formulas than the 3.5 per cent. of Finkelstein's formula. This is a point which may be of much practical importance in conditions in which there is marked intolerance both of fats and carbohydrates. Such high proteins as 4.5 per cent, or over should be used only for limited periods, and never given at all except with a suitable proportion of whey. This report emphasizes the physiologic importance of whey in the nutrition of infants and other young animals. While laying stress on the dangers of whey, especially from its sugar content, in many forms of intestinal disturbance, Finkelstein and Meyer have also appreciated the dangers to nutrition which may follow reduction of the salts. Recently Osborne and Mendel also have found that the mineral salts in the proportion present in whey were absolutely essential for the growth of animals, and that in the absence of salts, though maintenance of life was possible, growth could not be induced. As yet it is not possible to formulate any definite opinion as to the nature of the whey components which inhibit that action of casein, which, in the absence of whey, causes the rise of body temperature. The present observations call special attention to the work of Vaughan and his collaborators, who have repeatedly reported the production of fever by the subcutaneous injection of various proteins.

**Dried Milk in Feeding of Infants.**—E. C. Aviragnet, L. Bloch-Michel, and H. Dorlencourt (Arch. de med. des enf., Sept., 1912, Amer. Jr. of Obs. & Dis. of W. & C.) give the results obtained by them in feeding infants with dried milk in the form of powder. It has been administered to both healthy and sick infants with all grades of intestinal troubles. The powder is made by the evaporation of milk in a vacuum, and consists of a yellowish-white powder, very light and having the odor of cooked milk. It may be used in three forms, according as it is made from whole milk, or that from which all or one-half the cream has been removed. It is dissolved in sufficient water and given in increasing dosage after a small dose has been found to agree. It has proven of service in summer especially; because, being sterile, it has not the dangers of contamination and fermentation to which ordinary milk is subject in hot weather. In normal children it gives as good results as ordinary milk; in dyspepsias it gives as good or better results as milk. In cases of vomiting it is of especial value because it can be given with very little water, almost in the form of a dry diet. In this milk the sugar is not changed, the fat remains much the same, but the casein is rendered much more digestible, as is the case with other forms of albumin that are cooked. Toxic albumins may be rendered innocuous by cooking them. In treating a sick child we give the dry powder immediately after the water diet. Digestive ferments may be used with advantage in combination with this milk.
Diseases of the Alimentary System

Under the Charge of

JAMES WARREN DERSLICE, M. D.

Assistant Professor of Pediatrics, Rush Medical College, Chicago, Ill.

Starch Digestion in Infants. The age at which, in the alimentary tracts of infants, the various digestive ferments first make their appearance has an obvious bearing on the possibilities of artificial feeding at early ages. There has been a widely prevalent, though frequently contradicted view, that the starch-digesting enzymes do not manifest themselves in the early days of infancy—hence the obvious proscription of starch-containing food materials from the dietary at this period. Jacobi and Heubner have both long contended that food containing starch can be utilized during the first month of an infant’s life. The earlier contrary conclusions have been based on post-mortem search for diastatic ferments in the appropriate glands of the digestive apparatus, as well as an examination of the feces for evidences of residual amylases and other enzymes. The ingenious method of Dr. Alfred F. Hess of New York, whereby intestinal contents can be removed by the use of the duodenal catheter, has made it possible to obtain data regarding the pancreatic and intestinal secretions which have hitherto not been accessible to direct examination intra vitam. It is of decided interest and physiologic import to learn through the application of the new experimental and diagnostic procedure, that even before new-born infants have been put to the breast, that is, before there is any food factor to incite secretion, the three familiar pancreatic ferments are found in the intestine. Dr. Hess reports that, although the amount of pancreatic secretion is still very scanty during the first week of life, it contains the starch-digesting enzyme with increased regularity. In older infants, a mouth or more of age, there is a decided augmentation in the amylolytic power of the pancreatic juice. Without attempting to interpret the functional significance of the occurrence of an enzyme at a period when, in normal nutrition, it can scarcely be called on for participation in the digestive process, it is apparent that the findings quoted must modify the point of view of those who still debate the digestibility of starch in early infancy.—J. A. M. A.

Edema in the Gastro-Intestinal Disturbances of Infancy.—J. Lovett Morse in Boston Med. & Surg. Journal quoting Comby presents a very interesting review on the subject of the general edema so frequently observed in infancy in the course of chronic gastro-intestinal disorders. These edemas in some cases may be ascribed to a lesion of the kidneys, heart, or lungs. In other cases they have been ascribed to retention of salts, particularly chloride of sodium, and this has been the usual explanation of these edemas (Meyer). That retention of chloride may cause edema was shown by Comby, who produced edema in an infant by giving a very salty vegetable broth, which disappeared when the salt was suppressed. Comby, however, does not believe this to be the sole or even the commonest cause of these edemas, and that it cannot explain certain cases recently reported by Hume. In Hume’s cases there was edema but not retention of chloride of sodium before the salt was given, and he gave a great quantity of salt without producing an increase of the edema. If these edemas cannot be explained on the ground either of a heart or kidney lesion, or of retained salts, their cause must be sought elsewhere.

In two of Hume’s cases there was at autopsy a striking lesion of the adrenals, consisting in a sclerosis of the medullary substance accompanied by a degeneration of the cortical cells. Both children clinically had shown marked improvement under treatment with subcutaneous injections of adrenalin chloride, and the comparison between the course of these cases, and those not so treated convinced Hume that the adrenals play an im-
portant etiologic role in these edemas. Comby agrees with Hume in attributing these lesions of the adrenals to toxins absorbed from the gastro-intestinal canal. The lesions, through functional disturbances of the adrenals, lead to a reduction of blood-pressure with peripheral cyanosis and edema.

We believe that this is a plausible hypothesis, but that it is not necessary in all cases to suppose a lesion of the adrenals to be a necessary condition in the occurrence of these edemas. That they are of toxic origin, and that the toxins are absorbed from the gastro-intestinal canal is extremely probable, in fact, there is no other satisfactory explanation for their occurrence. It is probable that the toxins in certain cases may affect the adrenals, but it seems to us equally probable that those cases also fairly common, in which there is a demonstrable lesion of the kidneys, may also be attributed to toxin absorption. Moreover, it seems equally probable that toxins absorbed from the gastro-intestinal canal may affect the nervous system in such a way as to cause a vaso-motor paralysis. The good therapeutic effects of adrenalin can just as well be explained on this hypothesis.

**Infantile Eczema and Indigestion.**—H. P. Towle and F. B. Talbot (Amer. Jour. Dis. Child., 1912, iv, 219) present a preliminary study of the relationship of indigestion and infantile eczema. They find that the acutely inflammatory form of eruption in infantile eczema presents so many features which are constant in occurrence and in form that its claim for consideration as a definite fixed type of disease deserves further attention. For directly opposite reasons, the less intense inflammatory form or eruption cannot lay claim to such consideration. The chief findings show that the indigestion of fats and carbohydrates are the only types which can be demonstrated to occur with any regularity and definiteness in association with infantile eczema. The occurrence of the acute exudative type of eczematous inflammation of the skin in such frequent association with an indigestion of fats and sugar indicates that the process in the skin and the process in the digestive tract probably have some etiologic relationship. Contrariwise, the fact that the majority of infants presenting the same symptoms of indigestion do not likewise present a cutaneous reaction points to the inevitable conclusion that some underlying condition, probably systemic, which the eczematous infants possess, is lacking in the non-eczematous individuals. Therefore, indigestion must occupy an intermediate position, if any, in the mechanism of the production of eczema.

**Hypo-alimentation in Infants.** Mme. Nagcotte-Wilbouchewitch, continuing the discussion on M. Merklen's paper, British Jl. C. D., stated that the habit of under-feeding had become very frequent among the young mothers of the Russian colony at Paris, students, artists, etc., who adopted scientific formulae and gave the breast every three hours for five minutes. On the other hand, the poorer Russian Jewesses, guided only by instinct, reared healthy children.

M. Variot was glad to have his observations confirmed by those of the previous speaker and M. Merklen. It had been erroneously stated that the vomiting due to inanition (there was no question of hypo-alimentation at this period) had been described by Parrot in his work on athrepsy; but there was not a single passage in the book which justified the assertion. Hypo-alimentation and the disturbance caused by it dated especially from five or six years ago, and were the consequence of ill-founded doctrines prevailing in lying-in institutions; in country districts, where the mothers were free from this influence, the infant mortality was under 4.5 per cent. He drew attention to two striking facts: the attitude assumed by these infants was constant; they kept both hands at their mouth with the fingers thrust in as far as possible, which they sucked with avidity—they often slept in this position. He had practised radioscopv on several infants and noticed that the stomach was empty of milk and transparent as if it contained a certain quantity of air; after a bottle this air-chamber was sometimes larger than.
normal, but in all these cases the spasmodic contraction of the muscular coat
nevertheless took place and the stomach eventually assumed its opaque gobu-
lar aspect. In these circumstances it was probable that the air was
swallowed by sucking the fingers; it differed, however, from the aerophagy
described by Lesage in that it existed before the ingestion of milk. Prob-
ably aerophagy played an important part in causing vomiting.

Orthopedic Surgery
Under the Charge of
JAMES K. YOUNG, M. D.
Professor Orthopedic Surgery, Philadelphia Polyclinic; Clinical Professor Ortho-

Assisted by
A. BRUCE GILL, M. D.
Assist. Surgeon to Widener Memorial Industrial Training School for Crippled
Children, Philadelphia.

The Simplest Operation for Hallux Valgus, By A. M. Forbes. The
Medical Council, October, 1912. The skin incision is made over the dorsum
of the great toe and to the inside of the tendon of the extensor longus
halluces, beginning at the interphalangeal joint and extending backwards
three inches. The metatarsophalangeal joint is exposed and the head of the
metatarsal is freed and delivered through the incision. The head of the
bone is removed with a Gigli saw by an incision running obliquely back-
wards and inwards. The sesamoid bones on the flexor longus hallucis are
removed, if enlarged. The wound is closed by deep catgut sutures and
horse hair sutures in the skin. Redundant skin or an enlarged bursa are
left untouched.

Early Operation for Psoas Abscess. By James K. Young. The Medi-
cal Council, October, 1912. Psoas abscess should be opened early and be-
fore it has obtained even moderate size. The diagnosis of abscess ac-
companying Pott’s disease should be confirmed by the X-ray. The author
employs his modified Treves operation. An incision is made two and one-
half inches long over the spinous processes and parallel with the spine and
midway between the last rib and the crest of the ilium. The sheath or
aponeurosis, of the erector spinal muscle is divided along its outer border.
The muscle is retracted inwards and the posterior sheath is then also divided.
The quadratus lumborum is thus exposed. At the site of the transverse pro-
cess of the third lumbar vertebra the fibers of the quadratus lumborum are
separated and a blunt dissector is introduced external to the transverse pro-
cess mentioned, and is pushed in until it reaches the abscess cavity. The
opening is enlarged by the finger or by blunt forceps. The abscess is
irrigated with loric acid solution and dried with gauze. A gauze drain is
kept in the cavity for eight to ten days, after which time an early closure is
to be desired.

Methods of Employing and Indications for the Uses of the D’Ars-
of Surg., October, 1912.

The D’Arsonval current is a high frequency current first produced by
Prof. D’Arsonval of Paris in 1893. Two methods have been used in apply-
ing the current for therapeutie or vascular hypertension and metabolism.
In one, the auto-conduction method, the patient is placed within a large
solenoid, or coil, whose ends are connected with the condensers of the elec-
tric machine. In the other, the auto-condensation method the patient lies
upon an insulating cushion above a metal plate to which is connected one
pole of the D’Arsonval current. The patient holds the other electrode in
his hands. The second method is now most generally employed, and is
known as the indirect D'Arsonval method. The direct method is for thermic effect and is applied by placing the two electrodes of the current on opposite sides of the body or of the part of the body to be treated. This direct method is also known as diathermy. It produces a local hyperemia much more efficient, it is claimed, than that produced by the Bier methods. This hyperemia produces an increase of local nutrition, metabolism, and phagocytosis. If a strong current is applied with a small electrode at one operating terminal, local destruction of tissue occurs at this terminal.

The auto-condensation method produces a relaxation of the arterial system of the body, and thus lowers blood pressure which permits of a free circulation of the blood through the tissues and increases general metabolism. D'Arsonvalization is therefore indicated as the most efficient means of treating hypertension. Properly regulated exercise and a diet limited in quantity and free from the purin bodies should be employed in association with the electrical treatment. D'Arsonvalization does not depress the heart and is not contraindicated in cardio-vascular disease. Thus may the advance in arteriosclerosis by delayed and its complications deferred.

The author employs the direct, or thermic, D'Arsonval current in the treatment of various types of local infections: early tuberculous conditions of glands and joints and even of the kidney and prostate gland, carbuncles, boils, and whitlows. He thinks it will be shown to be of great value in the treatment of typhoid fever and appendicitis and pneumonia. It is employed also in the local destruction of neoplasms where a small electrode can be applied directly to the growth.

Arthroplasty. By Jas. M. Neff. (Surg. Gyn. and Obstet., Nov., 1912). The author describes the history of the various methods of arthroplasty that have been employed. The successful ones were those that succeeded in interposing or causing to grow between the ends of the bones a mass of fibrous tissue. Under the influence of pressure and the sliding motions of the ends of the bones this fibrous tissue undergoes degeneration and softening in the center with the formation of a cavity. Embryologically the true movable joints of the body are formed by a degeneration or liquefaction of embryonic connective tissue between the ends of the articular cartilages. And, similarly, the bursae in various parts of the body are formed in connective tissue under the influence of pressure and motion.

As to the best method of producing permanent and useful motion in an ankylosed joint, the author argues that, since there must be present a pad of connective tissue between the ends of the bones before a bursa, or new joint, can be formed, the method of choice must be that which accomplishes this in the quickest, simplest, and most direct way. Therefore the interposition of the joint capsule, or of a flap of fascia, either pedunculated or free, must be the most direct method. All other methods are indirect and may be used only if the former are not applicable.

Arthroplasty is indicated (1) in bony ankylosis of the various joints of the body, (2) in certain unreduced fractures and dislocations, (3) in fibrous ankylosis that has resisted conservative methods, and (4) in cases of diseases and deformity of a joint where resection and the formation of a new joint are demanded.

Probable contra-indications to arthroplasty are (1) youthfulness, (2) old age, (3) recentness of severe fractures or dislocations, (4) acute activity of pathological process in the joint or the articulating bones, (5) extreme and permanent atrophy of the muscles that move the joint, (6) thinness and lightness of the skin over the ends of the bones, which may cause sloughing of the skin after the operation, and (7) disease of the skin overlying the joint or sinuses about the joint.

The author describes in full the method of operation on the following joints: elbow, temporomaxillary, hip, knee, shoulder, wrist, radio-ulnar, metatarsophalangeal, and interphalangeal. He concludes the article with some case histories and appends a bibliography.
HABIT SPASM IN CHILDREN.

G. F. Still defines habit spasm as "certain oft-repeated and seemingly purposeless movements which most commonly affect the face and head, and which, although they may change in character from time to time, are for varying periods persistent, whether the movement be a simple twitch of one muscle or the more complicated action of several muscles."

As will at once be recognized, it is a very common affection, the form most frequently observed, consisting of a rapid blinking of the eyes, or possibly a "screwing up" of the eyes. In certain cases this is the only form of spasm that develops, but more often others follow it, the original spasm either persisting along with the later forms, or replaced by them. Occasionally one sees the eyes themselves affected, turning suddenly upward or sideways, or rolling in various directions. Various movements of the face are also not uncommon, twitching of nose or mouth, eyebrows or forehead. Sometimes the head is nodded or shaken, or tossed abruptly upward. Less commonly the limbs are affected, and the arms more frequently than the legs. The movement most often seen is a shrugging of one or both shoulders. Still gives an account of a female child of 11 years, who for three weeks had the habit of snapping her fingers, a habit which at the end of that time was suddenly abandoned and replaced by an upward jerk of the head. Another girl, 8 years old, struck her chest repeatedly with her hand, changing to the blinking habit and after that a jerking of the head. Still another child, a boy 8 years old, blinked for eight weeks or so, and then began to "paw the ground like a horse." A girl of the same age always stood on tiptoe when
about to speak. Movements of the trunk are uncommon, but do occur. A very annoying, and not uncommon form of habit spasm or "tic" is the repetition of some peculiar and meaningless sound, perhaps an articulate word or syllable, perhaps a mere grunt or gurgle or clearing of the throat. One curious feature of habit spasm is the fact that it decreases or ceases entirely in many cases if the child is conscious of being watched.

An almost endless variety of forms exist, even one which has been, aptly enough, termed "psychical tic."

This is generally a feature of a case in which the movements have been marked. In one girl, 8 years old, the first symptom was the usual blinking; this followed by shrugging of the shoulders, and this by the use, apparently without realization by the child, of obscene language.

A boy, 10 years old, began with clearing the throat, followed by a frowning movement with a jerk of the head, and two years later he insisted that he had "microbes on his hands" and refused to take food from them. Commonly, however, the "psychical tic" is manifested in great excitability, passionate-ness or morbid waywardness.

The sexes are about equally affected, with a very slight preponderance in the number of girls. The greatest number of cases occur between the ages of 5 and 9, and we almost invariably have a history of nervous instability, as shown by the disorders associated with the spasm, nervousness, headache, somnambulism and enuresis. Rheumatism is frequent in the family history. Mental strain, shock or excitement are frequent etiological factors, and so are various forms of local irritation, den-tition, carious teeth, ocular defects, catarrh and adenoids.

The difficulty in diagnosis lies in distinguishing some forms of tic from some forms of chorea. In many cases this difficulty is not met with. In tic we have a repetition of one movement or set of movements, whereas in chorea the movements vary irregularly. Habit spasm is usually much more limited in distribution, and is lessened by watching, whereas chorea usually increases under observation. It is unsafe to attach too much importance to the last named distinction, however, as it may occasionally be reversed in both cases. Also, a slight chorea limited in extent, may be difficult to distinguish from some of the habit spasms, and a hasty diagnosis is frequently impossible.

Yet a fairly prompt diagnosis is important, since the treat-
ment of chorea is diametrically opposed to that of tic. In the former, rest in bed is indicated, whereas outdoor life is the best treatment for the latter. Lessons must be stopped and recommenced only after pronounced improvement, and then tentatively. Any form of local irritation should be discovered and removed, excitement and fatigue avoided, and the child should not be scolded or punished for the peculiar movements, as is too often the case when parents set them down to "naughtiness" or carelessness. In certain cases, the child does better at school than at home, but this is when the home influences are such as to encourage neurotic tendencies. Always late hours should be carefully avoided. Still cautions against the removal of adenoids except in cases of extreme necessity, as the "nervous disturbance caused by fright of the operation or of the anesthetic has made some cases of habit spasms much worse." As for drugs, the most useful is liquor arsenicalis, 3 to 4 m., with 5 to 10 gr. of bromide three times a day. This is kept up for three or four weeks, reducing the arsenic if necessary, then discontinued for a fortnight, and resumed again for another period of three or four weeks.

Experience seems to show, however, that change of environment, "especially living among strangers," is often of more avail than drugs.

BRONCHITIS IN CHILDREN.

Bronchitis is a disease especially fatal to young children, nearly 50 per cent. of the deaths from this cause occurring in patients less than five years old, and, according to Samuel West, half the cases in children of that age proving fatal.

These figures are doubtless swelled considerably by the newborn infants who succumb to this disorder induced by exposure of some sort, whether in unwise bathing, in rooms of low temperature or in the open air. But during those first four or five years of life there has been noted a tendency in children for any bronchial catarrh to extend with dangerous rapidity to the smaller bronchi, and such a condition demands the most expert physiological management. After this period, when the longitudinal elastic tissue of the fibro-vascular coat has ac-
quired adult characteristics, and can offer more resistance to pressure in the longitudinal vessels from inflammation, bronchitis is not so much to be feared.

But in young children bronchitis is never other than alarming and fraught with danger. Either one of two types may be encountered. One involving the inner plexus, is sudden in attack and if not checked promptly and efficaciously proves fatal in a few days. When the outer plexus is the seat of involvement, however, the disease begins insidiously with indistinct symptoms and continues an obstinate course sometimes for several weeks. In bronchitis of the small tubes which is always secondary and due to extension from the larger tubes the sudden accession and marked collapse give the appearance of a primary affection.

In diagnosis, temperature has no value, but auscultation may reveal fine crepitations at both bases posteriorly, or the tubes may be so choked by mucus or by swelling of the membrane that the breath sound may fail entirely over both bases posteriorly.

The respiratory act is "a short, labored inspiration in which all the accessory inspiratory muscles participate, marked recession of the lower part of the thorax, and retraction of all the inferior intercostal spaces, followed by prolonged difficult expiration, in which the abdominal muscles participate. Whenever the expiration becomes prolonged in bronchitis, extension into the fine tubes is to be apprehended."

Treatment should include mild diaphoresis, gentle catharsis, cardiac sedatives, and warm, soothing air to come in contact with the respiratory tract. The temperature of the air breathed should be kept evenly at 72° F, and ventilation made as perfect as possible, at the same time rigorously excluding all draughts. The little patient should wear light flannel over the entire body, and a change of suits be always on hand.

In case drugs become necessary, aconite is the chief reliance to limit arterial pressure. Diaphoresis, best secured by the use of sweet spirits of niter, also lessens arterial pressure. Baths, sponging, and the coal tar antipyretics are distinctly contra indicated. For diminishing the excessive secretion which may inundate the bronchi, camphor is useful, also carbonate of ammonia, nux vomica, oxygen inhalations and counter-irritation.
For the last named, mustard, one part to six of flour, mixed to a paste with white of egg and cold water and applied between linen cloths is invaluable. When a more serious condition of deluged tubes has been reached recourse should be had to emesis, and the patient kept in a prone position, in order that the excessive secretions shall be ejected by coughing rather than swallowed.

In this disorder, as in others to which infancy is subject, much depends on the previous feeding of the child, and those which have had the advantage of mother’s milk from birth will successfully combat an attack of bronchitis which would prove fatal to those fed on proprietary foods or pasteurized or sterilized milk.

THE COST OF CHILD LABOR.

In spite of all the agitation and legislation the child labor problem still confronts the public, and is likely to until there are enlisted in its solution not only philanthropists and altruists but also the rank and file of the country’s population. Perhaps no more effective way of securing this co-operation can be hit upon than by bringing to the front the economic aspects of the question, the tremendous loss in productive power entailed upon the community by the wasteful employment of children during the period when they should be developing the forces which would make them profitable members of the community in adult life. The absolute folly of this expenditure of energy is shown by the fact that even disregarding its ultimate loss it brings no present gain to the child’s family. That is, in trades where it is possible to use women and children, the entire earning capacity of the family is no larger than is that of the man alone in those trades where only men can be employed—a fact fraught with far-reaching significance for the thoughtful.

And for this mere semblance of gain, empty of reality, is bartered the future of the community.

The laws, pitifully inadequate as most of them are, are unenforced on one hand and evaded on the other, and children far below the legal age of 14 years toil day after day, not only for the “12 hours a day or 60 hours a week,” which the Pennsylvania law, for instance, permits, but anywhere up to 68 hours in
one week, and sixteen consecutive hours in one day. Night work, and night work alternating with day work, so that even if strength permitted the child can attend neither day nor night school, add their quota to the list of disastrous influences.

In the northern states much honor has frequently been expressed at the conditions in southern mill towns, but there is no need to cross Mason and Dixon's line to find painful realities. A recent number of Charities contains an article fairly but graphically depicting the state of more than 20,000 of the children of Pennsylvania, and that other northern states can furnish similar examples there is little doubt. Recently a friend of the writer attended a New Year "party" at a settlement in a town in New York State, where the hostesses were girls employed in the local factories. "Over fourteen" of course they were supposed to be, but half of them would have failed to measure up to the ten year old girl in our own home, and hollow chests and bent shoulders augured ill for the future.

Aside from the physical disaster resulting from the hard work and long hours, a further evil is wrought by depriving these girls of all opportunity to learn how to keep a home. A girl, whose life has been spent in the factory knows neither how to cook nor clean nor sew effectively, and married life for her spells disaster. She brings into the world children stunted physically, mentally and morally and does not know how to care for them after they are born.

A century ago the children of the working population of England were swept into the cotton mills, and today England is in a panic over the degeneration of her national physique. That is the cost of child labor. Can we afford to pay it?

**GOAT'S MILK FOR INFANT FEEDING.**

The rapid increase of tuberculosis in infants, or rather that this condition is now the more often diagnosed, reminds us that Professor Behring insists that "all tuberculosis originates from milk feeding in children." He has not hesitated to declare that even the phthisis of young adults "is only the last verse of the song that was sung to them in their milk-feeding days as infants." Be this as it may, we all realize the fact that notwithstanding the great improvement in the character of the milk supplied to us, tuberculosis among cattle has not been wholly eradicated. But recently the herd of
cows supplying milk for one of the largest infant institutions in New York City was found to contain many tuberculous cows.

In view of this, as well as of the increased cost of furnishing clean milk, the United States Department of Agriculture has been led to investigate the goat as a source of milk supply for children.

The goat in this country is practically free from tuberculosis which would make its milk of great value as a food to all children, but especially to those infants of tuberculosis parents, not yet infected.

A goat will produce nearly 1,000 pounds of milk a year of a food value much greater than that of cow’s milk.

Its composition is: Fat, 4.30 per cent.; proteids, 4.70 per cent.; mineral matter, 0.60 per cent; total solids, 13.50 per cent.

It is claimed that by proper feeding the curd of goat’s milk may be rendered less solid than that of cow’s milk, and the amount of fat and proteids easily diminished.

The goat has been used for hundreds of years in the older countries as a source of milk supply and the government feels that with knowledge will come an increase in its use.
The object of this series of talks is to make plain to you some things which you know about in a more or less general way. The subject will be dealt with in a plain straightforward manner and at the end of each of my talks, the subject matter of each talk will be open to general discussion by my audience. Ask questions about anything I have discussed and yet not made as plain as you would have had me. These talks are to be for your benefit and I want every one of you who listen to them to go forth richer in the right kind of sexual knowledge than you were before you heard them. Do not look upon me as a mere lecturer or distant instructor who comes before you to "air" his supposed knowledge on this subject but as a friend who seeing an opportunity to do you a good service as regards your present and future well being hastens to your assistance. In fact the service I hope to perform for you not only is to be for your health and happiness, but is also to protect the health and happiness of those whom each of you will love and value above your own life and health, if you are real men—your future wives and children. I want to show you the difference between being merely a male and a real man. The difference between being merely a so-called "sport" and a gentleman. The difference between "sham" and reality.

To properly understand talks on sex and sex hygiene you should have a general idea of one's anatomy, and the physiology of these genital parts. I refer to the anatomy and

*Delivered by invitation before the Hebrew Educational Institute, Brooklyn, N. Y., the Emanuel Brotherhood of New York City; the New Era Club of New York City, and elsewhere.

The author offers the use of these lectures, in part or in whole, to any one who may wish to make use of them. In giving these talks the author always encourages the asking of questions at the end of each, so as to be sure the members of his audience have thoroughly understood the matters which have been spoken of.
physiology of the genital or creative tract in the male. You are all familiar with the appearance of the male external organs of generation. As you know they consist of the penis and a baglike structure hanging apparently from it, which is called the scrotum and in which are two oval shaped masses known as the testes. But these are only part of the male genitive tract, so commencing from the inside of the body we will trace the entire tract from within outward. For convenience we will start at the tests. These are as I have just said, the two oval like shaped masses which can be felt hanging in the scrotum. They are two in number and are absolutely separate from each other. They come under the heading of glands and it might be mentioned here that when glandular tissue is mentioned it means a kind of tissue which secretes or gives out some body fluid, Thus for example we speak of the salivary glands of the mouth as secreting the saliva into the mouth. The function of the glandular organs known to you as the testicles is to secrete the fluid which passes from the male during or rather I should say at the height of the sexual act. The testicles are not the solid mass of tissue that you thought them perhaps, but are semi-hollow and divided into a number of compartments. The testicles are not loose in the scrotum but hang suspended in it, each at the lower end of a rope shaped mass known as the spermatic cord. The right testicle is attached to the right spermatic cord and left testicle to the left spermatic cord. The left spermatic cord is a little longer than the right one so the left testicle hangs somewhat lower in the scrotum than does the right. To revert to the testicles again and continue our study of them. They are the most important part of a male creative tract because within them are manufactured the contribution of the male to the perpetuation of the human race. This contribution consists of a number of self propelling little animals, let us call them for want of better name, in a quantity of stickylalbuminous fluid which has a most distinct and strong odor. The living part of this contribution is known as spermatozoa; the semi-mucloginous portion as semen. Each testicle varies from one and a half to two inches in length, one inch in breath and about an inch and a quarter in thickness. In weight they average from $\frac{3}{4}$ of an ounce to an ounce. I do not go further into the detail of the testicle for fear of confusing you but I would like to add
this, that each little compartment I spoke about above, contains a number of little tubes and as the number of compartments are variously estimated as from 250 to 400 in each testicle you can perhaps imagine to yourself how many feet of these little pipes, let us call them, each testicle contains. One very reliable anatomist and histologist has calculated that there is almost 2000 feet of them averaging about 1-200 of an inch in diameter. It is certainly a most wonderful picture of Nature's great skill to think of this fact. Other competent observers have calculated up to five thousand feet. It is from highly specialized cells, forming the linings of these little tubes that the semen is excreted, and it is certain of these cells that develop into the spermatoza. When I speak of body cells I refer to certain definite divisions of the tissues that go to make up the body. These very minute divisions, each of which is a living thing with certain special functions, can be seen under the microscope, appearing when highly magnified to be about the size of the head of a pin. You can try to imagine how many millions of them go to make up a human body. These tubules gradually converge into a single large duct or pipe which is known as the vas deferens. The vas deferens, the blood vessels of the testicles, both arteries and veins, the lymph vessels and the nerves to these parts from the spermatic cord, to the lower end of which I told you the testicles were attached to. The blood supply to the testicles is a very liberal one as plenty of nourishment is needed for these parts to enable them to carry out properly the important manufacturing work they have to do. These parts are also well supplied with nerves of a specially delicate sensitiveness. Any of you who have received a blow from any source, accidental of intentional, know the very painful and sickening sensation you experience. We will not spend much time discussing the spermatic cords but will just say a word or two about the part of it called the vas deferens. The duty of the Vas Deferens is to carry the semen and its contained spermatoza from the sources of supply to the organs that act as reservoirs for it until it is called into use. It therefore starts from the lower part of the testicle and travels upwards at the inner and rear edge of it until it is out of the scrotum and into the lower part of the body. This division of the body we call the pelvis. In the pelvis it reaches backward and downward until it is between the base of the bladder and the
rectum. It gradually unites with the duct of the vesicula seminalis to form the ejaculatory duct. In length it is about two feet. The vesiculae seminales next engages our attention. They are two in number, one for each side. They lie between the base of the bladder and the rectum and act as reservoirs for the semen to which they add a secretion of their own. They are pyramidal in shape, coiled upon themselves each one being about two and one half inches in length in this shape. As already stated they join with the vas deferens of their respective side at the base of prostate gland to form the ejaculatory duct of that side.

When the coils are all unraveled each vesicula is from four to six inches in length. The ejaculatory ducts are two in number, one for each side, and are each about three quarters of an inch in length. I have already told you that they are formed by a union of the ducts of the vas deferens and the vesiculae seminales. They commence at the base of the prostate gland and running through it open into the prostatic portion of the urethra. The name it self explanatory—their function being to eject the semen at the proper time during the sexual relation. I have mentioned the prostate gland several times and so before proceeding any further let us discus it. The prostate gland is a somewhat chestnut shaped gland containing a large amount of muscular tissue. It is placed just below the neck of the gland around the urethra at its beginning at this point. Its secretion is conveyed by some dozen and a half ducts into the prostatic portion of the urethra. Remember this mere mention of the prostate gland and its location for it is important and will be spoken of again several times. In passing to the penis we will study it in its various parts. In the female there is a distinct urinary tract and a distinct genital tract. In the male the tracts are also separate except as to the penile portion which has to do both with the passing of the urine and the sexual function. You are familiar with its outward appearance. You also know that the penile portion of the male genito-urinary tract is capable of expanding and contracting. That is when in the resting state, the penis is a soft flabby organ of small size. Under certain conditions it can however become enlarged in size and firm in consistency. The divisions we make of this organ is three—root, the body and the head or glans penis. The root is the portion of the organ whereby it is connected to the body. The glans penis is that portion of the penis from the
outer end to the ridge like ring which surrounds the organ about an inch from its point. This base of the glans penis is known as the corona. In the newborn male child and uncircumcised males the head of the penis is hidden by the circular skin covering it but in those who have been circumcised this surplus skin has been cut away in a manner that allows the glans penis to be uncovered. Why circumcision is a good act will be discussed later. Between the root and glans is the body of the penis. It is in the body of the penis that the changes of expansion or erection and contraction of flaccidity take place. The opening in the middle of the head of this organ is called the urinary opening, although as I said before the semen is also discharged from here also. Back of this opening is a long tube called the urethra which extends backwards from this opening to the entrance of the bladder. You will recall that I told you a few minutes ago that the ejaculatory ducts discharge the semen into the urethra in its prostatic portion, so we will have to study the urethra a little later on in this talk.

The body of the penis is composed of masses of erectile tissue enclosed in cylindrical compartments. These number three and are situated two on the upper part of the organ and one on the under part. Those above are alike and are called the corpora cavernosa. It is the distension of these with greater blood supply under certain conditions that brings about the expansion or erection of the penis. The compartment on the under part of the organ is known as the corpus spongiosum. Through it runs the urethra. Cowper’s glands are two small glands placed in the membranous portion of the urethra and secretes a thin viscid fluid. The urethra extends from the neck of the bladder within to the tip of penis, the urinary opening, externally. It is about nine inches long. Its shape varies, depending whether the penis is in a flaccid or erectile state. We divide the urethra into three portions which we will call the prostatic, the membranous and the spongy parts. The prostatic portion is so called because it passes through the prostate gland from base to floor of this portion is the verumontanum or caput gallinaginis. Its function is to prevent the semen from going backward into the bladder. Extending along the sides of the verumontanum is the minute openings of the ducts of the prostate gland. In front of it the openings of the ejaculatory ducts. Beginning at the apex of the prostate gland and running outwards for about
three quarters of an inch is the membranous portion of the urethra. The rest of the urethra is the spongy portion. This very much condensed study of the male anatomy of the particular parts that concern our talks, together with the rough sketches of these parts that I will now pass around will, I think, give you some idea of yourselves in these parts. At this point I think we will conclude talk one to give you time to digest this information. Do not however think that this very brief talk has told you in detail all there is to be said of the anatomy and physiology of these very important organs for it has not by any means. I have practically only skimmed over them in the lightest manner. A more detailed account, though, is unnecessary for our talks and would take several hours.

ANENT THE ANCIENT OPERATION OF CIRCUMCISION

BY Q. W. HUNTER, M.D.,

And

Frank K. Green, Ph. G., M.D.,
Louisville, Kentucky.

From time immemorial the prevailing belief has been that surgical removal of a portion of the prepuce of the infantile genus homo masculinus originated among the Jews, and that it was necessarily a part of their religion. Investigation of the "writings of the fathers," however, indicates that while circumcision may be the most ancient of all surgical operations and has always been a common practice among the Jews, the custom did not originate with that race, nor does it appear to have ever been an important or essential integral part of their religious belief. Moreover, the designation "circular cutting" (of the foreskin) is almost certainly not Jewish in origin. "The researches of Welcke led to the discovery of a true specimen of circumcision on the mummified person of Amen-enhab, who lived between the years of 1614 and 1555 B.C. The belief in the Jewish origin of the practice, however, has been even more hopelessly demolished by the discovery of the widespread practice of circumcision among the aborigines of the Australian continent, and of the Malayan Archipelago."

It is quite evident that circumcision has been practiced to a greater or less extent by people of all nationalities since the beginning of history, and at the present day the conditions have
not materially changed. While the operation has never been made obligatory among the people of any particular race, i. e., it has always been optional among both "Jews and Gentiles," the assertion seems amply warranted that more Jewish male children have been circumcised than of all other nationalities combined. It has been advocated as a prophylactic against venereal disease, as a means of assuring greater cleanliness, as a sanitary and hygienic measure, as a preventive of maunistrupration, and for many other probable and improbable reasons. The indications as stated by Ricketts are: (1) Local: Hygienic, phimosis, paraphimosis, redundancy (where the prepuce more than covers the glans), adhesions, papillomata, eczema (acute and chronic), oedema, chancre, chancreoid, inflammatory thickening, elephantiasis, naevus, epithelioma, gangrene, tuberculosis, preputial calculi, hip joint disease, hernia. (2) Systemic: Onanism, seminal emissions, enuresis, dysuria, retention, general nervousness, impotence, convulsions, hyster-epilepsy.

While not desiring to appear hypercritical, the writers wish to emphatically disclaim even the probable existence of ninety-nine per cent. of the foregoing mentioned indications for surgical removal of the prepuce, and to as emphatically claim that in every instance the positive contraindications far outnumber and over-balance the probable indications therefor. They would go a step further and most emphatically deny the premise that circumcision is ever indicated as a routine measure, the statements and opinions of others to the contrary notwithstanding. Whether it be true or otherwise that Jewish or other males are less subject to venereal disease because of previous circumcision, is a matter which cannot be legitimately discussed herein, and the writers reserve the right of expressing their opinions thereon dextro tempore.

It has been claimed that the foreskin, like the appendix and certain other portions of the human anatomy, having no known physiological function, might as well be eliminated from the economy, since it can serve no useful purpose to the individual. Based upon present knowledge this observation may be literally true, but it is believed future investigation will demonstrate that every anatomical structure composing the human economy has a definite function to perform, and that the prepuce is no exception to the rule, otherwise in rerum naturae
why are not all of the genus homo masculinus born without such an appendage?

Reasoning from analogy it would appear nature never intended that the prepuce should be extirpated, since as is well known every mammal having a penile appendage also possesses a protecting foreskin completely covering the glans with the organ in its quiescent state. When the prepuce is removed by surgery or otherwise, no protection is afforded the exquisitely tender and sensitive glans, and serious irritation and induration oftentimes ensue (vide case report). In some instances where the foreskin was only partially extirpated, it became imperative that the individual thereafter wear a permanent protective dressing or "sling" to secure even a reasonable degree of comfort.

Harlow takes strong grounds against the practice of circumcising infants. He says the delicate surface of the corona of the glans is provided with innumerable nerve papillae of exquisite sensitiveness. Nature has provided a careful protection to this surface,—the double flap of foreskin which is common to male animals of the higher as well as the lower species. "Circumcision produces an ugly mutilation of the penis, of which one arrived at man's estate, unless he were a Hebrew, might feel greatly ashamed. It is cruel to inflict unnecessarily such a mutilation upon a helpless child. Let the operation be performed only upon adults, with their own consent, and when it is a necessity." In this connection, Mercier records details of an operation for restoration of the prepuce. The patient had been circumcised two years previously, but so sensitive was the glans that he suffered considerably from the least friction, and having tried in vain all kinds of applications begged for some operation to restore his prepuce! "Circumcision is a relic of barbarous and semi-civilized times, before soap water and sanitation had been preached. It no doubt served a useful purpose among the nomadic tribes of tropheal countries; but in these days physicians should cease to preach or impose upon their patients an unnecessary and irrational mutilation."

Accidents have not infrequently happened in performing the apparently trivial operation of circumcision (vide case report), and the individual has been thereby irrevocably injured. It came under my personal notice (Schwartz) that part of the glans penis was cut off; in another where too much of the foreskin was taken off; and recently one in which a piece of the
serotum about the size of a half dollar was missing! Moreover, after removal of the protecting prepuce the glans may become markedly indurated (callous) from continued friction, and consequent thickening and hardening of the external surface thereof render it less sensitive thus conducing to diminished pleasure during the copulative act. In some instances, as a result of early circumcision, the external surface of the glans penis later became so thickened and indurated as to be almost utterly devoid of sensation during coition. Examples of this character may be regarded as extreme, but mention thereof seems necessary to direct attention to factors hitherto ignored or overlooked.

Observation one: W. H., a robust, healthy boy of eight, had a moderately redundant prepuce, and was accordingly circumcised when a few weeks old by the family physician in the orthodox manner. Through accident or otherwise an inordinate amount of the prepuce was removed, and as a result of penile development the skin and mucous membrane later became tightly drawn from before backward. Irritation from contact with the clothing induces frequent painful erections, the glans penis shows evidence of marked indurated thickening, and he suffers continuous discomfort therefrom. Moreover, it seems certain that the habit of manu-trupration owes its origin to improperly executed circumcision in this instance. There have been repeated recent rumors of a damage suit against the physician for malpractice, but thus far litigation has not been instituted.

Observation two: B. L., now aged five, of poor parentage, when a month old was circumcised by the surgical assistant in a free college clinic, the clamp method being employed. The child's penis was diminutive, and the prepuce considerably elongated. In applying the clamp preparatory to severing the foreskin, for which purpose a pair of large scissors were awkwardly utilized, there was inadvertently included the outer third of the glans which was also excised in the operation. Hemorrhage was considerable, and some difficulty was experienced in accomplishing its control. The penis was so small that application of suitable dressings was the source of much embarrassment. This boy is left with a "stump" penis for which there is no remedy either medical or surgical. Fortunately, probably owing to the immaturity of the parts, there resulted no retraction of the urethra.
Observation three: T. N., nineteen, contracted specific urethrorrhea two years before, and after partial recovery therefrom the attendant advised circumcision because of a moderately redundant prepuce, which was accepted and the operation accordingly performed. It seemed impossible to prevent subsequent erection, the sutures repeatedly cut through the tissues, and healing was in consequence markedly delayed. After union had finally taken place and the dressing discarded, irritation from contact with the clothing induced marked swelling and induration of the glans, the penis was almost continually in a state of erection, the patient suffered constant discomfort during waking hours, and was oftentimes awoken at night thereby. To secure a reasonable amount of comfort and rest, it is necessary for the patient to constantly wear a protective dressing, which of course has to be frequently removed and reapplied to insure adequate cleanliness, to permit micturition, etc. The dressing has been omitted for a few days on several occasions to determine if its use could be entirely dispensed with, but irritation and swelling of the glans with painful erections again supervened, thus rendering permanent protection imperative.

Bernheim has observed three instances of inordinate hemorrhage following circumcision in "bleeders," with two deaths, and believes this is more frequently true in consanguineous marriages which are common among the Jews. He concludes that circumcision is contra-indicated in certain cases of very feeble infants and instances of hemophilia. Gangrene of the penis following circumcision is recorded by Brothers and many other writers. Death usually follows in a few days. Syphilis has not infrequently been transmitted to infants at the time of circumcision, and Kinnicutt refers to ten boys who were circumcised by a man who afterward died of tuberculosis. The preputial wounds were infected by the operator's saliva (mezizah). Symptoms developed a short time thereafter, seven of the poor victims died, three survived with tuberculous adenitis.

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Kinnicutt: Medical Record, March 4, 1893, p. 285.
It is only within the past thirty or thirty-five years that the attention of the Medical profession (to say nothing of the laity) has been called, in a special way, to the diseases of infants and children and to the fearful mortality resulting therefrom.

When we remember that this enormous death rate is claiming 20 per cent. of all children born in America before they reach the age of one year, regardless of all our scientific research and modern treatment, we are forced to wonder what must have been the death rate before the Specialists, aided by the Scientists, began a mighty crusade to reduce this mortality and give to the baby a chance?

In this destruction of young American life, mostly because of environment, poverty and ignorance on the subject of the care and feeding of infants, the colored American is one of the chief sufferers and losers.

The summer diseases of children are responsible for most of the deaths of our young and for that reason they should be closely studied by every up-to-date physician; therefore I come to you with this most important subject.

The younger the patients the greater the death rate in these diseases and hence the more careful should the doctor and parents be.

Dr. Crandall reports that in 3,000 cases treated he observed the following results, to wit:—"under 6 months of age the death rate was 14 per cent.; from 6 to 12 months of age it was 29 per cent.; from 12 to 18 months of age it was 24 per cent.; from 18 to 24 months the death rate was 17 per cent., while over 2 years it was 16 per cent."

The summer diseases of infancy and childhood are so many and varied that for convenience sake I have further limited myself to what, in my experience, has proven the most seri-

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ous and destructive of all the summer diseases of infancy and childhood, namely "Acute Gastro-Enteric Infection."

Clinically there are only two forms of Gastro-Enteric Infection. 1st. The Simple Form, and 2nd., True Cholera infantum. But in this paper I am considering only the Simple Form, as you have no doubt discovered, because it is one of the most frequent forms of the summer complaints of infants and childhood met with in general practice.

Among the causes of Gastro-Enteric Infection are acute indigestion and all causes, involved in all forms of diarrhoeal diseases, age, environment, constipation; warm climates, very warm and hot weather, bad foods, and worse methods of feeding there are cases on record caused by feeding children on milk infected by cows grazing on poison weeds. A study of the death rate among infants and children (largely due to Gastro-Enteric Infection) in New York, Boston, Philadelphia, Cincinnati, Atlanta, New Orleans and other large cities in this and other countries will show that the disease appears in an epidemic form almost yearly in or about June and increases rapidly until early in the Fall. The heights of the epidemic are reached in the months of July and August, with the highest death rate in the month of July.

Investigations by Seibert of New York and Barginskey in Berlin show that the humidity of the air and rain fall have little or no influence on the prevalence of this form of gastric and intestinal infection. But in my years of experience in the wet hot summer days there is an increase in the prevalence of the disease.

There is one point, however, I desire to call your attention to relative to the increase in the number of cases of Gastro-Enteric Infection in any community, and that is, that the temperature producing this increase is about the same as that in which the bacterial life begins to be active.

The bacteriological study of this disease has proven two things: 1st., The bacteria so far discovered in the cholera infantum type of the disease belong to the "Protein" group; 2nd., The bacteria found in other cases mostly belong to the Saprophytic group—the most prominent of these being the hay bacillus.

These germs enter the body through the food and drink, especially water and milk. I do not believe the disease can be
communicated by contact; at least I have not had that to happen in my many years of practice.

The intestinal lesions are often very slight; amounting only to a simple superficial catarrhal intestinal inflammation.

We may say acute gastro-enteric infection is the middle ground between acute indigestion and ileo-colitis in infants and children and its serious results lie in its deceptiveness to the eye and understanding of the unexperienced doctor and mother and often before either realizes the gravity of the situation, the baby is far out beyond the breakers of hope where it is hard for the doctor with all his skill and remedies to reach it.

When we find grave and serious symptoms we will know at once that the inflammation of the stomach and intestines are extensive due to the rapidly advancing infection, then our own prognosis should be guarded. Some times what first seems to be a very simple case will rapidly develop into a very grave and dangerous type.

The symptoms are sometimes few and are often far advanced before the physician is called. In mild cases the on-set is gradual; there is little fever and some times none and very little gastric disturbance. But it is not often we can reach the case in this stage.

In severe cases the attack is sudden, accompanied with a rise of temperature and vomiting. The child is fretful, restless and will give the colicy cry occasionally; the tongue is coated, the presence of gas in the stomach and parts of the colon is evident; stools frequent, thin, some times green, yellow or brown, often containing particles of undigested food or milk; sometimes there will be mucus present in the stools which are often very offensive: the babies' eyes are sunken and spincer muscle around the mouth is frequently constricted.

In cases developing suddenly all the above symptoms are increased and aggravated—with the skin hot and dry, temperature is elevated to 102 and possibly 105—all the symptoms indicating a serious state of illness of our little patient. The vomited matter is often sour and if milk is the food used it will be thrown up in hard curds.

This vomiting usually begins in from 4 to 6 hours and some times earlier after the case develops. The little patient will often lie in a stupor with sunken eyes and weak pulse, a relaxed condition and some times convulsions will rapidly follow the above symptoms. The patient is very thirsty, but as fast as
GASTRO-ENTERIC INFECTION

the water is taken, it is vomited. These symptoms are quickly followed by severe diarrheal symptoms—frequent stools—in some cases as many as 4 and 5 in as many hours or more.

A microscopic examination of the stools will reveal undigested food, large numbers of epithelial cells, groups of cells and blood corpuscles. Just here let me urge all of our physicians to better prepare themselves for the examination of the feces, urine, sputum and blood of all patients where any such examination seems to be indicated. We must not stop in this day of advancement with the mere noting of the pulse rate, taking the temperature and looking at tongues. We must go deeper until we shall have found the cause of the foul tongue, the increased pulse rate and the elevated temperature.

Gastro-enteric infection is often difficult to differentiate from acute indigestion in our little patients; but as a rule the temperature in gastro-enteric infection is higher and the nervous disturbances are greater, the stools are more frequent and offensive and more fluid in consistency and the attacks occur mostly in the summer months—while acute indigestion occurs at any time of the year and the symptoms are shorter in duration and less severe. Sometimes for the first three or four days it will be difficult to differentiate gastro-enteric infection from ileo-colitis; however the continued high temperature beyond the second day, the continued pain, the appearance of blood and mucus in the stools will indicate inflammatory changes and clear the differential diagnosis.

Another point worth noting here is that almost any of the acute ailments of infants and children may be ushered in with gastro-intestinal disturbances and especially is this true during the summer months. But as these have other physical signs we will soon be able to reach a correct diagnosis.

Cases of simple gastro-enteric infection properly treated ought not to prove fatal only in very young infants and those already much amaciated from other diseases of a wasting character. Some times, however, even the mildest cases will prove fatal, hence we should be guarded in our prognosis in all cases.

As long as teething and hot weather were thought to be the main causes of this disease very little could be accomplished in the way of prophylaxis. But with the onward march of science these old ideas have been greatly changed and the subject of prophylaxis can be in part named as follows:
1st. Where it is practical send the little patients from the large cities to the country during the hot summer months.

2nd. Educate the laity—the mothers and nurses—on the subject of feeding, along these lines.

A. Regularity—have regular times to nurse or feed the baby.

B. Don't over-feed the baby or over-nurse; not enough is better than too much.

C. In under-feeding (if you under-feed) don't let the baby go hungry too long.

D. Study the patient and if not at the breast, select the best food for its system. What will be good for one baby being artificially raised will not do for another. Examine the mother's milk and if it is not up to the standard endeavor to improve it; if you fail then select the best artificial food for the little patient, or a wet nurse.

3rd. As guardians of health we should urge the passage of laws that will regulate the transportation and sale of milk.

4th. The exclusion of germs from milk and other foods used for babies as far as possible.

5th. We should urge that all milk used for babies during the summer months be sterilized.

6th. See to it that all nursing bottles and other containers for babies' foods are thoroughly cleaned.

7th. Prompt and proper treatment in all mild cases.

8th. Sterilize all water used for baby during the summer, and when the symptoms and conditions indicate gastro-enteric infection decrease the amount of baby's food and increase the amount of water.

The treatment of gastro-enteric infection readily divides itself into four divisions:

1st. Hygienic treatment.


The hygienic treatment simply means that the hygienic surroundings of the patient should be made as good and pure as the means of the parents will permit.

If an improvement is not noted in two or three days, advise a trip to the mountains or sea shore.

But this treatment could be extended to some extent and the children of the poor benefited and many little lives saved
if our Women's Clubs and similar organizations would organize in every southern town and city what they have in many northern cities—namely, Fresh Air Homes in the country where the little suffering patients are taken during the hot summer days. They also have days set apart when all the children must be taken to the parks for fresh air. It is true in many of our southern towns and cities we have no parks and in some where there are parks our little children are not permitted to go, but some day these conditions will change, but until then we must do the best we can to save as many of our babies as we can and make friends of all and enemies of none.

There are so many little ways that these little sufferers can be assisted if some one would only help the doctor; and some times I think the doctor would get more help if he would only tell the people what he wants.

Artificially fed babies, and especially those fed on cows' milk are very susceptible to gastro-enteric infection. The reason for this is plain when we note the fact that this milk is handled in most of our cities from unsanitary wagons and unclean cans and by unclean dealers, and is heavily laden with bacteria from 69,000 to 2,355,500 to the cubic centimeter and these numbers will rapidly increase with the age of the milk.

Dietetic treatment is of vast importance since its aim is the limitation and selection of foods for the baby.

The selection of food is one of the first essentials in all the acute diseases of the human family, but in the early stages of the disease under discussion the physician must ever remember that the chances for the little patient's recovery will be hindered or increased just in proportion to proper or improper feeding.

This is the reason why many of us will call today to find our patient doing well, only to return tomorrow to find the symptoms greatly aggravated and the patient worse. Here mother, in her anxiety to help the doctor and assist the baby to gain its strength and health, has given it milk or food when we had ordered absolute rest to the stomach, and the symptoms tell the sad story. It becomes necessary sometimes in most cases to withhold even breast milk. The mother never tells the doctor what she has done until after days and perhaps many months, after our little patient recovers—then with eyes pleading forgiveness she tells us what she did. If the baby had died the secret would have been buried with it.
The better classes and many of the poor of all races do not have this to contend with since the former have trained nurses in most of such cases while the patients from the homes of the latter, are often sent to charity hospitals where they receive better and more intelligent nursing.

As long as vomiting continues the stomach should have absolute rest; even if the baby is nursing it should be taken from the breast and all food of any kind withheld for at least twelve hours. The patient will be thirsty but this can be allayed by giving small quantities of Albumen water or whey or Barley water. These may be given cold or warm, as the conditions of the patient will require; if the baby refuses to take any of these or vomiting should begin again, proceed as before and give the stomach rest. Stimulants are only ordered when the symptoms of the case indicate.

After vomiting has ceased for 24 hours, or more, if the patient be a nursling it may be put to the breast once every four hours, two or three minutes at the time, not oftener or longer.

If it becomes necessary to begin the use of artificial foods in rearing babies the same cautions and cleanliness must be followed as we have previously mentioned.

In using milk for very young infants it should be diluted from four to ten times, using a sugar of milk solution together with well prepared Barley or Rice water, brought to the temperature of breast milk. In some cases the milk can be peptonized for ten or twenty minutes when it will be better retained and more easily digested.

If milk will not be retained, and we need something more than Albumen water, we could try some of the following: Beef juice, animal broths and some of the many baby foods on the market. Note, I have not mentioned any of the brands of condensed milk. They are dangerous foods for babies. I admit that the milk is largely used by the laity, but in many cases it is not clean and there is too much sugar in it while the fats are too much for some babies and not enough for others.

All directions for mothers and nurses should be written lest they be forgotten or neglected. Give special directions as to the number of feedings in so many hours as well as to the amount to be given at each, and the kind of food you desire to be used.
The first thing to do is to clear the canal, as we do in all acute cases, and make it as aseptic as possible. Calomel, one eighth of a grain every hour until eight doses are given—followed by a dose of castor oil usually will be sufficient.

It may be necessary to wash out the stomach; if so, a good and clean way is to have the patient take large draughts of water which will be at once thrown off. Here we have obtained a reduction of the temperature and the inflammation has been greatly reduced. If the vomited matter be sour, then one or two ounces of water containing ten grains of Bicarbonate of Soda should be left in the stomach. In some cases we irrigate the colon and in doing so we use saline solutions two or three times a day or as the case may require. The plan of irrigating after each action is too exhausting for the little patients and we lose more than we gain.

As to drugs, bismuth, salol, subgalate, and beta-naphthol, magnesia, bismuth, lime water, chalk mixture are serviceable. Bismuth Subnitrate is prescribed by many, but to be effective it must be given in very large doses, as much as two drams a day being given to a child of two years.

Salol is very good since it is decomposed in the intestines into salicylic and carbolic acids. Astringents will not help and should be avoided. Some times the mothers here add to our trouble by the use of teas of roots and red oak bark or other astringents before calling us in. Opium may be needed in some cases, but if used first clear the canal. Stimulants will be needed in most cases—let this be brandy or aromatic spirits of ammonia. I would advise that very little medicine be used; have a few select drugs and use them when the case demands. The older I grow the less medicine I use in my practice. I would suggest that you do not write prescriptions when called to see a patient just to keep your hand in, for it is a very costly hand to deal to the sick.

I have spoken to you from the standpoint of a specialist on the diseases of infants and children. Out of the depths of my heart I have endeavored to bring to your notice a subject that must appeal to you all and it will appeal to the great American nation some day and I hope that day is not far off.

Thirty per cent. of all children born die before they are twelve, mostly of preventible diseases and the state and national governments are doing very little to prevent it. Let
me urge the specialists and general practitioners who may be called to these little sufferers in the future to give them closer attention.

Let me urge that this and other state medical societies put themselves on record by drawing up a strong petition and sending a committee to present it to the legislature, asking that it provide eight or ten thousand dollars annually to secure two of the best equipped men in the diseases of children, one white and one colored, to travel over the state and enlighten the mothers, nurses and fathers on the subject of how to save the lives of the children.

When Congress meets it begins with the discussion of high tariff and then to low tariff and every other kind of tariff; I am fifty years old and it has been discussing the tariff ever since I can remember and it is still up for debate.

Hence, our Congressmen have for more than fifty years been working on the tariff and today it is about as near fixed as it was fifty years ago, while a part of that time and a small amount of that energy and some of that money could have been spent toward helping the nation save its infants and children upon whom it must depend for its men and women.

The national government has spent years and millions of money trying to regulate foreign immigration and say who shall and who shall not enter our country when, if it had spent half that time and half those millions in saving and protecting the lives of the children born within its borders it would need no foreign immigration.

It has been only a few years ago when Georgia, South Carolina and some other Southern states sent delegations to New York to arrange with the immigration commissioner to send to these states some of the immigrants that swarm daily into Castle Garden, when, if they had spent that money to instruct the mothers how to rear their babies before and after birth they would not need any foreign element. It was said they wanted these foreigners to take the place of the colored laborer because of his unreliableness. I must, with sorrow in my heart, admit that there is a deal of truthfulness in the charge to the unreliability of the negro. But as I saw it, these foreigners were to take the place of the falling off by the death rate of the children in these states.

Most of our law makers make a terrible noise some times
and really fool some of the people, but when we sift all they have done and get down to the practical side, there has been nothing done, it was only a noise.

They have legislated on the conservation of forests, conservation of the water power, men have been sent out by the government to doctor trees and teach the farmers how to treat their trees; it has sent men out to study the tick and to teach the farmer how to keep the ticks off his stock; this will help some, and in these things both North and South joined; but listen: as late as January 30, 1912, a United States Senator made an effort to have that body pass a law appropriating the pitiful sum of $30,000 to take up and investigate the causes of infant and childhood mortality, but some of the Southern Senators objected, fearing it would infringe upon state rights; to them the South, with its hundreds of thousands of little, innocent graves, weeping mothers, sorrowing fathers and sad homes, is far sweeter than the strong hand of the national government, backed by its millions of money, closing up those little graves, wiping away mothers' tears, making fathers rejoice and homes happy and increasing its population.

ACUTE CATARRHAL BRONCHITIS

By

BENJAMIN KNOX RACHFORD

Cincinnati. Ohio.

Bronchitis is a catarrhal inflammation of the bronchial mucous membrane which, especially in infancy, has a tendency to spread downward and involve the small bronchi.

Etiology—Glandular tuberculosis, rickets, syphilis, anemia and chronic diseases of the adenoids, tonsils, pharynx and nasal mucous membrane are the most important predisposing causes.

Infection is the essential factor in the etiology of acute bronchitis. The most common exciting microorganism are the staphylococcus aureus, the pneumococcus, the streptococcus, the influenza bacillus, and the baeillus catarrhalis, but it may be produced by typhoid, diphtheria, and tuberele baeilli, and it is commonly associated with epidemic grippe, measles, pertussis.

and scarlet fever. The influenza bacillus is commonly responsible for the chronic form of bronchitis.

The great majority of these cases occur during the winter or spring months. This is partly because the contagions which produce bronchitis are rife at this time, but also because this is the season when children are huddled together in close, ill-ventilated rooms, not only at school but in their homes. They are thereby forced to breathe an impure, germ-laden air, which is the direct cause of bronchitis. If the laity could get away from the bugbear that "catching cold" is the all-important cause of this disease and learn that the way to avoid bronchitis is to live and sleep in the open air, the morbidity and mortality from this disease would be enormously decreased. I do not wish to convey the impression that prolonged exposure to damp cold can do no harm; on the contrary, it is an important exciting cause of bronchitis. This factor, however, can only excite bronchitis in children who carry upon their respiratory mucous membranes one or other of the microorganisms which may cause this disease. I do not believe it is wise to expose the legs or other portions of the body to damp cold, with the idea that it exercises a hardening influence upon the child and prevents disease. It is not desirable that the skin of the child should be hardened, but only that it should breathe fresh air. During the winter months, in order that this may be accomplished with safety, it is not only wise but advisable that the child should be properly clothed so that all portions of his body may be comfortably warm.

Age is an important predisposing factor. Bronchitis is most common between the sixth month and the end of the third year of life. After this time it rapidly decreases in frequency.

Pathology—The mucous membrane of the trachea and bronchi is congested and swollen, its blood vessels dilated, and its secreting structures, especially the mucous cells, increased in size and activity. The mucosa and submucosa are infiltrated with small, round cells, and with the bacteria producing the disease. The bronchi contain more or less mucus or a mucopurulent exudate. The peribronchial tissues are not involved.

Symptomatology—Fever and cough announce the onset of simple bronchitis. There is nothing characteristic in the fever. It rises gradually to 102° or 104° F., is irregular in character, runs a short course, and usually reaches normal in from four to seven days. It runs an afebrile course as in intestinal dis-
case, rickets, or other acute infections; the high fever seen in the beginning is due to the general toxemia. As this subsides, the lower and irregular temperature of bronchitis may continue for a number of days before it reaches normal. If the fever remains high and prolonged, it is evidence of a beginning bronchopneumonia, otitis media, or some other complication. The cough is the most prominent and the most troublesome symptom. It is always present, except in very young and feeble infants, and directs attention to the lungs as the site of the disease. In the beginning it is usually dry, irritating and unproductive; at this time the child is not seen to swallow following the cough. Later it is loose, less paroxysmal, and less troublesome, and usually gives more or less relief as it brings up into the pharynx some of the mucus which the child is seen to swallow following the cough paroxysm. In some instances the cough is associated with pain and more rarely with vomiting. Children under six or seven years of age do not usually expectorate; it is therefore difficult to obtain specimens of sputum for examination. If this is thought necessary, however, the sputum may be obtained by wiping out the pharynx with a gauze-wrapped finger or a cotton-wrapped probe. In this way is may be possible to decide whether the disease is produced by pneumocci, influenza bacilli, streptococci, or other microorganisms. Such information is of little or no value from a therapeutic standpoint, and this procedure therefore is hardly justifiable as a routine method of differential diagnosis.

The respiratory movements are more rapid than normal, and perhaps slightly labored. In simple bronchitis, in children over six months of age, there is practically no evidence of dyspnea; when, in such a case, therefore, the wings of the nose begin to flare, and the peripneumonic groove begins to recede with each inspiration, it is time for the physician to employ his most potent remedies to prevent the onset of bronchopneumonia. It should be remembered that there is also a form of afebrile-asthmatic bronchitis, presenting all the evidences of increased labor on the part of the accessory muscles of inspiration, such as dilatation of the alae nasi, sinking in of the suprasternal notch, and inspiratory recession of the walls of the chest in which, notwithstanding these symptoms, there is little or no danger of bronchopneumonia. This form may commonly be differentiated.
from ordinary bronchitis by the inspiratory stridor, the sibilant rales, and by the fact that the child has little or no fever. In very young and delicate infants there is even in simple bronchitis a slight amount of dyspnea with flaring of the nostrils and a slight recession of the peripneumonic groove.

Physical signs—The physical signs are well marked and by them the diagnosis of bronchitis is made. In almost every case bronchial fremitus may be felt. The vibrations of the chest wall are very significant to the experienced touch. The early sibilant and whistling rales, and the subsequent mucous rales, which may be heard in both the large and medium-size bronchi, give unmistakable evidence of this disease. Fine crepitant rales, which may occur at any time during the progress of a bronchitis, mean the onset of pneumonia. Inspection may reveal rapid breathing and a light inspiratory retraction of the chest wall. This is especially true in young and delicate children, but when these signs are exaggerated they may be an indication of a beginning bronchopneumonia. Percussion is of comparatively little value except for determining when the disease is passing from the stage of bronchitis to that of pneumonia.

The course of simple bronchitis is usually from four to eight days; the disease, however, may be prolonged with intermissions for a period of from four to five weeks; this is common in those cases associated with subacute or chronic disease of the adenoids and tonsils. Reinfection may cause relapses in hospitals and even in private homes which are not properly ventilated and disinfected during and following an epidemic of bronchitis.

Complications—Otitis media, mastoiditis, bronchopneumonia, intestinal toxemia, and gastroenteritis are common and dangerous complications.

Prognosis—The prognosis is, on the whole, good, but during the early week of life it should be guarded, since at this time the disease may run an insidious course with little or no fever, few constitutional symptoms, and but slight cough, and yet, during all of this time, well-marked physical signs of bronchitis may be present, and a fatal bronchopneumonia may develop before the physician is aware that the infant is seriously ill.

Prophylaxis—Every rhinitis, pharyngitis, or slight catarrh of trachea or bronchial mucous membranes should have prompt and careful treatment; this especially applies to the
new-born and to syphilitic, rachitic, and other badly nourished fants. Breathing pure air, living out of doors during the day, sleeping with open windows at night, and wearing during the winter months, clothing that will keep the skin and body warm and dry are important prophylactic measures. All contagion should be avoided. Well infants should be kept away from persons suffering from ordinary colds, tonsilitis, grippe, and other acute infections. In children in whom the disease recurs from time to time, or who have a tendency to subacute nasopharyngeal catarrh, the throat and nose should be inspected and all diseased tissues removed.

TREATMENT—The infant or child with acute bronchitis should if possible, be confined to bed in a large, bright, isolated room, the windows of which are opened wide enough to let in plenty of fresh air. Care should be taken that the atmosphere of the room be not dried out with artificial heat; a moist, pure air is soothing to the irritated bronchial mucous membrane. As a rule all that is necessary is to admit the outside air; this generally secures sufficient moisture. Where this cannot be satisfactorily accomplished, the air of the room may be moistened by heating water in an open vessel. The infant or child should be clothed so that its body will be kept warm whatever may be the temperature of the room. In winter, the bedroom should be kept between 60 degrees and 70 degrees F.

The medical treatment is largely symptomatic. In the beginning, if the child be suffering from some acute intoxication, such as influenza, which produces high fever and marked discomfort, phenacetin may be given for one or two days but should not be continued longer. A safe prescription in these cases is guaiacol carbonate, 1 grain; salol, 1 grain, and sugar, 1 grain. This dose may be given every three or four hours to an infant under one year of age, and may be increased to suit the age of the child. The cough may be allayed by the use of bromid of potash, 45 grains; tincture of belladonna, 15 minims; glycerin, 2 drachms, and elixir of laetated pepsin, enough to make 2 ounces. A teaspoonful of this mixture may be given every three hours to an infant one year of age. For older children, syrup of ipecacae, 1 drachm to the ounce, may be added to this prescription, and the doses of the other ingredients increased to suit the age of the child. The opium preparations are almost never indicated in children under two years of age, but for sturdy children, over this
age, 1 to 2 drachms of camphorated tincture of opium may be added to the above prescription. There most decidedly is more or less danger in giving opium, cough syrups, ammonium carbonate, ammonium muriate, tartar emetic, squills, and ipecac, in ordinary bronchitis. These remedies are rarely indicated, and I feel quite sure that more harm than good is done by their indiscriminate use in children under two years of age.

In beginning the treatment, the gastrointestinal canal is to be thoroughly unloaded by a dose of castor oil, and throughout the disease this dose is to be repeated every three or four days to prevent intestinal infection by the mucus and pus which have been coughed up and swallowed. Warm tub baths or warm sponge baths are very grateful, and serve a useful purpose in the treatment of bronchitis. They quiet the nervous system, promote the action of the skin, and act as a general tonic. Cold baths and cold packs are not indicated; this is especially true to infants under eighteen months of age. Antipyretics are not needed to reduce the temperature. Inunctions of guaiacol, 1 drachm to the ounce of anhydrous lanolin, should, in one-half teaspoonful doses be thoroughly rubbed into the skin of the chest, night and morning. A light oilskin jacket, lined with a thin layer of cotton-wool, is of value, and is especially indicated in the infant and young child during the cold winter months when the fresh-air treatment is being given. If, at any time the symptoms indicate that a broncho-pneumonia may be developing, flaxseed poultices are to be used as directed in the chapter on Broncho-pneumonia.
Protein Milk As Corrective of Digestive Disturbances.

Dr. Herbert B. Wilcox and Miner C. Hill.—Different observers have differed widely in their methods of preparation of protein milk which has given widely divergent fat percentages and caloric values to the mixture. Our experience has to do with a protein milk made from skim milk having a fat content of less than one per cent. During the summer of 1910 and the winter of 1910-11 Dr. John Howland used protein milk as a routine and continued diet for nearly all patients in the wards of Bellevue Hospital. The study which we present is based on the conclusions which he reached, namely, that the value of protein milk depends upon its use as a corrective, and that it is not to be considered as a fit means of prolonged nourishment, its period of usefulness being limited to the first seven or ten days of the dietetic treatment.

In any acute digestive disturbance low fats and sugars are certainly indicated, while higher percentages of proteins than were formerly believed advisable are now known to be well borne and indeed actively beneficial. Protein milk seems to be better adapted to the early stages of such digestive disturbances than any other food preparation, but as the severity of the condition lessens, the tolerance for and the need of more fat and carbohydrates increases while the high protein is needed less as a neutralizer of fatty and carbohydrate fermentation. Its prolonged continuance brings about a needlessly heavy drain on the nitrogen metabolism.

In Dr. Howland’s Observations about 400 infants varying in age from prematurity to twelve months were fed on the protein milk as a substitute for other milk mixtures, in most instances during their entire stay in the hospital, a period averaging one month. The results were most gratifying in that the children quickly recovered from the acute evidences of their digestive disturbances. They had been unsuccessful,
however, in their attempt to make the children gain in weight. This led them to begin the use of protein milk as a corrective alone. We have deviated from the principles laid down by Finkelstein and Meyer only in the lower percentage of fat in the mixture. In the application of the food we have followed a plan quite different from that of the originators or of others with whose work we are familiar. We have found no need of preceding the protein milk by tea or cereal decoctions. Finkelstein and Meyers took up three days which involved an initial loss in weight with this preliminary treatment. It has become apparent that there is no objection to the use of protein milk in combination with other foods. We have combined it with benefit with plain milk mixtures, breast milk, and some solid foods. Our experience lead to the belief that the continuance of protein milk over many weeks is necessary and oftentimes injurious. Finkelstein and Meyer obtained a gain in weight only by the administration of relatively large amounts of carbohydrates and by feeding very large amounts of food. These observers experienced great difficulty in getting the infants changed from protein milk to other foods and advised strongly against its use with any of them.

This paper shows that: 1. Protein milk is best given without a preliminary course of treatment with tea or cereal decoctions. 2. That it is efficacious in all acute and chronic infections of the gastrointestinal tract. 3. That it is equally suited to fermentative and putrefactive processes. 4. That it is better given in combination with other foods than alone except for a short initial period. 5. That children taking the protein milk can, without danger, be quickly swung over to plain milk mixtures.

In the period from May, 1911, to November, 1912, 261 children were given protein milk for a variety of digestive disturbances. These children varied in age from prematurity to nine years. In many instances, before instituting the protein milk diet, plain milk mixtures were tried for comparison. Clinically, the cases treated were divided into three broad groups as follows: 1. Acute infections of the gastrointestinal tract evidenced by vomiting, bad stools, and fever. 2. Apparently non-infectious indigestions due to previous nutritional abuse. 3. Simple diarrheas, namely, those cases in which the infants could not be given food strong enough to
increase body weight without accompanying gastric or intestinal overactivity.

In general it may be said that protein milk is better suited to children over rather than under three months of age. The number of cures of children over three months of age was 20 per cent. greater than that of the very young. The improvement resulting from the use of protein milk in acute intestinal infections, as evidenced by fever and frequent bloody mucous stools, was more striking than in any other condition. In 44 cases of severe intestinal infections of longer duration which we failed to correct by plain milk modifications 70 per cent. were cured when changed to protein milk. With the initial use of protein milk in 198 intestinal cases, many of which were of a severe type, 73 per cent. of cures were effected.

Protein milk has also proved of value as a means of controlling vomiting. While there were very few cases having gastric symptoms unassociated with evidences of intestinal derangement, in 74 instances vomiting was the predominating symptom; of these 30 were put at once on plain milk modifications and 80 per cent. did well. The 20 per cent. failing to respond to this treatment promptly recovered when put on the protein milk. The remaining 44 were put on protein milk at once and good results were obtained in 82 per cent. of the cases.

The indication for protein milk seemed equally clear whether the indigestion depended upon fat or carbohydrate incapacity primarily, and it also seemed to be indicated whether the indigestion was due to bacterial fermentation or putrefaction. Whether it was the fat or sugar that was at fault an incapacity for both usually soon obtained. If fermentation predominated the low fats and sugars tended to retard it and the high protein, whether chemically or mechanically, seemed to be active in neutralizing this fermentation in aiding the digestion of other food elements, and in restoring the balance of intestinal flora. If putrefaction existed protein milk furnished enough sugar to inhibit the pure proteolitic activities of the bacteria by turning the facultative organisms into fermentative activity.

It cannot be claimed that protein milk is a general panacea nor can it be considered the only means of controlling digestive abnormalities. It has been our experience, however, that those indigestions which do not respond to the usual means of treatment will respond much more readily to this method.
Formerly every child entering the hospital with digestive disturbance was given an initial dose of castor oil; now only the very severe cases receive this drastic initiation. There is reason to believe that diarrheas due to the gas bacillus, the bacillus dysentericus and other bacterium may as logically and more easily be corrected by protein milk than by purely bacterial starvation methods.

The reason is found in the fact that these inhabitants of the intestinal tract were more or less facultative in their biochemical activities, and anything like a pure culture of any one group is a rare intestinal finding.

The buttermilk which we used was made from pasteurized milk containing 1.75 per cent. fat, to which was added one ounce of buttermilk per quart of the pasteurized milk. This was allowed to stand for twelve hours at a temperature of 70 F. to 80 F., being thoroughly beaten at intervals of two or three hours and then placed on ice until needed. Each day the buttermilk was made from that of the preceding day, a smaller amount of stock being needed as time went on. The amount of stock used was determined by the degree of acidity required. To make the junket two quarts of pasteurized milk and two Hansen junket tablets were used. After standing twenty minutes at a temperature of 100 F. the precipitated casein was strained through gauze, washed in water, and forced several times through a fine seive with a potato masher. The seiving was facilitated by adding buttermilk to the curd and was continued until the curd was thoroughly broken up into fine flakes. To one quart of buttermilk was added one quart of water and one grain of saccharin and the whole added to the curd and beaten to form a suspension. In feeding there should be a large hole in the nipple and the bottle should be shaken every two or three minutes.

As soon as the digestive condition showed some improvement malt sugar was added; the dextrine maltose being preferable as it could be added in greater quantities with less danger of gastric or intestinal irritability than the other forms of malt sugar that had been used in these cases. The aim in treatment was to make the period in which the protein milk alone was used as short as possible. It was found that better results were obtained from the addition of malt and some plain milk than by providing all the calories needed with malt alone and thus raising the carbohydrate percentage higher than was safe or
The Double Function of Fats and Carbohydrates in Nutrition and Their Nutritive Properties.

Dr. Henry Dwight Chapin, New York:—Fats and carbohydrates are generally classified as foods whose function is merely to supply heat and energy and it is customary to express their nutritive value in calories. In calculating human dietary it has become the common practice to work out the number of calories of the different components of a feeding and by adding them together to determine the nutritive value of the food, on the assumption that the nutritive value of the different food elements varies directly with the amount of heat they would yield when burned outside the body. Body heat, however, is a by product. If the animal organism demanded food primarily for the heat it yields, such methods would be exceedingly useful and accurate, but food is not utilized in this manner. It has to be digested, assimilated, and carried to the muscles, organs, and tissues before it can be of value to the body or before it can be burned. It has never been shown that the animal organism uses heat derived from food except to maintain the bodily temperature, and in the summer time little or no food is required for this purpose; yet food is required under such conditions. An infant uses just as much milk in the tropics as elsewhere. The heat above that needed to maintain body temperature is excreted. It is evident that the fats and carbohydrates are not required primarily for the heat they yield, and that the heat excreted is not the measure of the food
needed for growth. Body heat is produced by the expenditure of energy. When a human-being is awake and sitting up, or standing, more muscles are brought into activity and heat production increases proportionately, while during sleep there is a suspension of external activity and the production of heat by the internal organs is at a minimum. When severe muscular exertion is made heat production increases at a tremendous rate, being over nine times as great as during sleep. Heat production is not dependent upon the size of the body nor upon its weight, but upon the amount of activity of the body organs. The energy of the body is derived from the combination of oxygen of the air with the assimilated fat and carbohydrates and a part of the protein of the food. When energy is expended in the body it is changed into heat and then becomes a waste product which must be excreted. The energy content of the food cannot be measured directly as the expenditure of a definite amount of energy always liberates a definite quantity of heat; potential energy can be measured indirectly by the heat of combustion of the food.

The amount of heat produced during digestion and assimilation depends upon the digestibility of the food, that is the amount of energy needed to bring about its digestion. Zuntz of Germany made some experiments to determine the amount of energy needed for chewing different kinds of foods having practically the same nominal caloric values and found that it took 76 calories of heat to chew one pound of hay, 21 calories for one pound of oats and six and one-third calories for one pound of corn. Available energy may be defined as the total energy minus that lost in the excreta and in the gases, and net energy as available energy minus the cost of digestion and of preparing the food for use. Hence physiological food value and caloric value are not identical. It has often been observed in practice that certain foods in small quantities are more nutritious than larger quantities of other food having the same caloric value.

The food needed for growth is not shown by the heat produced in the body. Each new cell contains fat and carbohydrate and there must be more of these substances in the food than the heat excreted shows has been burned, therefore the heat excreted cannot be used as a standard for determining the quantity of fats and carbohydrates needed in the food when growth is taking place. Carbohydrates are primarily suppliers
of energy and secondarily of heat. Babcock has recently shown that they have another function which is to supply water to the cells in a manner that controls cell nutrition and growth. The digestion of carbohydrates consists in converting them into dextrose, the sugar of the blood, and this is brought about by the digestive enzymes adding two parts of water to cellulose, starch, glycose and dextrim and one part of water to cane sugar, maltose, and milk sugar. The assimilation of carbohydrates consists of converting into glycogen, which is insoluble, the portions not needed for immediate use, and the process consists of removing two parts of water from dextrose. The method of producing growth and nutrition in the cell consists essentially of dehydration and hydration.

As oxygen and hydrogen are present in carbohydrates in the proportions that neutralize each other and form water, the carbon is the only portion of the carbohydrate which can combine with the oxygen from the air and be available as an energy producer. When fat is completely oxidized in the cell it is changed into carbon dioxide gas and water, the water produced weighing more than the original fat. There is a difference between fats and carbohydrates in the way in which this water is produced. In the carbohydrates it is merely split off from the carbon, while in the case of fats it is actually produced in the cells by the oxidation of the hydrogen of the fat. As producers of energy the fats and carbohydrates are interchangeable, but as water producers in the cell they have unlike properties.

Cell nutrition depends upon metabolic water, that is the water chemically produced from the food. If the cells are to obtain nourishment from the blood the cell contents must be of less concentration than the blood or the soluble contents of the cell would flow to the blood and the cells would be starved. When dextrose or fat is oxidized in the cell the carbon is removed as a gas and the water split off from the carbon of the dextrose, or produced by oxidation of the hydrogen of the fat, was left behind to dilute the contents of the cell. The blood is now more concentrated than the cell fluids and its nutriment flows toward the cell. As fats, when oxidized in the cell, dilute the cell contents almost twice as much as the same quantity of carbohydrates and thus stimulate a more rapid flow of nutriment to the cells, it is not difficult to see why cod-liver oil, butter, and cream are so useful in tuberculosis as constructives. They are not needed for their energy as cases needing these
foods are not abnormally active, but are kept as quiet as possible.

Cow's milk contains four or five per cent. of carbohydrates, two-thirds of the caloric value lies in the fat and one-third in the carbohydrates. The fat will produce over two ounces of metabolic water to dilute the cell fluids and the sugar about one and one-half ounces of metabolic water to fifty ounces of milk.

The chick in the egg is not expending bodily energy and its body heat is maintained by the hen or the incubator so that it needs little food to meet its energy and heat demands, and yet the hen's egg contains nearly 23 per cent. fat but no carbohydrates and the fat contains less carbon than other fats. When it is remembered that growth consists of enlargement and division of the cells which calls for rapid assimilation of nutriment, it will be seen that a substance with great capacity for producing metabolic water and thus causing a rapid flow of nutriment to the cells is just what is needed in milk and eggs. It is supplied as fat.

Metabolic water is all that some animals require. The imbibed water of other animals is needed mostly as a vehicle to carry off waste products by changing them into latent heat when the amount of heat produced is too great to be carried off by radiation, and for removing protein waste when in a soluble form as urea. Metabolic water would probably be sufficient for all animal needs were it not for the elimination of poisonous substances resulting from protein degeneration.

Dr. Chapin concluded with the following practical observations: It is quite evident that an overemphasis has been placed upon the caloric value of foods particularly as far as the nutrition of infants and growing children are concerned. Infants need little food for energy except as this is expended in digestion and assimilation of foods. Their natural food is highly specialized in composition and in digestive properties and is peculiarly suited to their needs. Milks of various animals vary in composition and digestive properties directly with the variation in type of the animal. A proper estimation of foods, in a last analysis, depends upon digestive suitability and capacity to produce true growth and proper development.

Discussion.

Dr. B. Raymond Hoobler, New York.—The chart presented shows the nitrogen metabolism of several children fed on pro-
tein milk. From the figures submitted it is shown that in cases on such food the nitrogen intake was considerably higher than usually is fed to children of the same age. Though the intake was higher the absorption was excellent, 95 per cent, being absorbed which is the same as in a normal child. The retention of nitrogen gradually increased from day to day until supposedly the nitrogen need of the infant was fully met. Then the retention remained at a level being sufficient to meet the protein need for growth. Dr. Hoobler also presented results bearing on the feeding of large quantities of protein as gathered from experiments made under the supervision of Dr. Holt and published in the American Journal of Diseases of Children, November, 1912. These results had a distinct bearing on the various factors which cause the stools to change from the diarrheal type at the beginning of the protein milk feeding to the smooth, pasty, yellow stool which appear after from four to six days feeding of protein milk. There is a marked lowering of the acidity of the stools and a marked reduction in the free fatty acids present in the stools. The amount of fat in the form of soluble or insoluble soaps is much increased. The amount of water lost from the body through the stools is greatly reduced and the retention of mineral salts greatly increased. All of these factors are favorable for producing a change from frequent green watery stools to the smooth, pasty, yellow stools which appear after from four to six days feeding with protein milk.

Dr. Graham Lusk said that the same factors relative to maintenance, repair and growth that appear in the adult are present in the infant. The baby at the breast takes food containing calories sufficient for his maintenance and about 15 per cent more which latter he adds to his body for growth. His own instinct leads him to take nourishment sufficient to accomplish this result. This instinct belongs to the race. In the extended experiments of the Remsen Board it is astonishing to find how the quantity of bread taken by each individual daily was practically constant, usually not varying more than 20 grams for the individual. Here, as in infancy, instinct furnishes the guide for nutrition. If the baby was not nourished in the natural fashion it was a matter of luck whether he got sufficient nourishment to cause him to grow properly. Protein is made up of a great many structural units called amino-acids. These amino-acids are as many in number as the letters of the alphabet, and their possible arrangement as manifold as the words of the die-
tionary. The protein is broken up in the intestinal tract into these several amino-acids and enters the blood in the form of amino-acids. These serve to build up the varying proportions of the machinery of the cell. Even in babyhood there is wear and tear on the protein constituents of the cells as is manifested by the waste of nitrogen in the urine of the infant when protein starvation occurred. It is therefore necessary to administer sufficient protein to repair this wear and tear quota which has been destroyed, and in addition to give enough to furnish new protein building stones for the constructive growth which is inherent in the protoplasm of the young of all species. As to the carbohydrates, there is no question that that carbohydrate may supplant fat in the nutrition of children, if that be deemed necessary. Fat, on the contrary, cannot supplant carbohydrate entirely because under circumstances of exclusive fat-protein dietary acidosis appears.

It is necessary to consider the caloric requirement of the infant when a proper dietary is to be devised and this should contain during the first three months 90 calories per kilogram of body weight. In experiments which Dr. John Howland made in our laboratory it has been seen that an infant may eliminate 15 calories hour after hour, after taking a usual milk mixture.

Food itself in ordinary quantities may increase metabolism somewhat. The addition of protein so that the protein content of the milk is doubled causes an increase in the heat production of the child from 15 calories her hour to 19 calories per hour. This increase of heat production is due to the specific dynamic action of protein. I have recently shown that this is due to the stimulation of the protoplasm through the action of certain amino-acids. When these calorimetric experiments were made the heat production of the baby was measured and the nitrogen in the urine, the carbonic acid excreted, and the oxygen taken in were carefully determined. From these data it was calculated how much fat, protein, and carbohydrate had been oxidized in the body during the period and it was found that the heat produced during the hourly period was exactly equal to the heat that should have been produced had the calculated quantities of elementary food stuffs been oxidized during the time.

It has been stated that the heat value of foods is largely lost through work expended on the digestion of the food. One should remember, however, that the breaking down of protein into amino-acids or of fat into fatty acid and glycerin in the in-
testine, is not accompanied by the evolution of heat. Furthermore if agar agar be given there is no increase in metabolism notwithstanding a great activity on the part of the intestinal tract. Cathartics which strongly stimulate the intestinal tract have no effect at all upon the heat production of the organism as Benedict has shown. So the Darmarbeit of Zuntz as a causative factor of the increased metabolism after food ingestion must be abandoned. In Dr. Hoobler’s charts two points may be observed: 1. The addition of protein to the body not only depends upon the formula representing the composition of the milk ingested, but also upon the protein content of the organism. A large quantity of protein will be absorbed by the cells whose protein supply has been depleted, whereas with the same diet a much smaller quantity of protein or perhaps none at all will be deposited by an organism whose protein content has reached a condition of optimum saturation. 2. It is not surprising that in one of the children with marked protein retention during a period of under nutrition there was a gain in weight since protein was added to the body for the upbuilding of the cell tissue and, when this took place, there was a deposition of 0.8 calorie per gram in such added tissue, whereas, when fat was withdrawn from the tissues, there was a removal of 9.3 calories per gram of fat oxidized. Dr. Hoobler’s results can easily be obtained if muscle tissue be added to the body, even though tissue fat be used at the same time for the maintenance of the energy requirement of the organism.

Dr. Chapin has spoken regarding the importance of metabolic water. I have estimated that if a man of seventy kilograms net weight should produce a hundred calories of heat per hour, and those one hundred calories of heat were derived exclusively from carbohydrate, then in the oxidation of this carbohydrate, 0.24 of a gram of water would be produced each minute. That would mean the production of three milligrams of water per kilogram of body weight or three parts of water per million parts of body weight. Since the volume of blood circulates at least once per minute bearing perhaps food brought from the intestines, it hardly seems possible that metabolic water amounting to three milligrams per kilogram can in any way be influential in the exchange of food between the blood and the tissues. It seems as though the osmotic pressure of the food stuffs within the blood would be the de-
terminating factor in their passage from the blood stream to the cell.

Dr. Samuel S. Adams, Washington, D. C.:—I wish to congratulate Drs. Wilcox and Hill upon the success that they have obtained and particularly on the large number of patients they have had to deal with in the use of protein milk as a means of correcting digestive disturbances. The value of this report lies in the fact that this work was carried on among a class of patients with whom we are all familiar in institutions where one gets the very worst cases. I have had a wide experience with these cases in Washington. We have tried at the Children’s Hospital in Washington various treatments for gastroenteric diseases and have come to the conclusion that the severe heat and intense humidity influences the varying mortality among infants. The Finkelstein method as prescribed by the author was followed but the results were not such as to lead one to continue it long. There was great difficulty in inducing the babies to take the food. The records showed that children with badly deranged digestion taking from eighteen to twenty-four oozes of milk mixtures when given the protein milk took only four, five, or eight oozes in twenty-four hours. The mortality was very high and the treatment had to be abandoned. The cases were not selected. I believe that we are soon going to get better results with these cases but we are about as far from solving the problem of infant feeding today as we were years ago.

I would like to know what the mortality was this year in institutions compared with that of previous years and if the results from this form of treatment show any better results. Atmospheric and seasonal conditions help us in all these cases. Last summer was comparatively cool and the mortality in the Children’s Hospital was less than during the preceding year. I am greatly impressed with what was stated in regard to the therapeutic measures employed.

Dr. John Lovett Morse, Boston, Mass.: I have been very much interested and entertained and scarcely know what to say regarding Dr. Wilcox’s paper. I believe that he is honest and that we must accept his figures, however, we did not see such results in Boston from using this form of treatment. It is not clear to me why the same kind of food should affect one sort of bacteria in one way and another sort in another way, that is, why it should antagonize fermentation in one case and putrefaction in another. In these cases of dysentery caused by the
gas bacillus or allied organisms, it should do good, but it ought to be harmful in those caused by the dysentery bacilli which produce toxic substances from proteids. Dr. Chapin's paper was very interesting and we are indebted to him for the points he has given regarding the use of calories. I am especially indebted to him for another argument in favor of fat as the infant's food.

Dr. Fritz B. Talbot, Boston, Mass.:—I have been very much interested in the papers, but wonder why the same treatment is applicable for the cure of cases of fermentation and cases of putrefaction, the one being caused by carbohydrates, the other by the proteids. Theoretically we feel that if we wish to stop fermentation, we should give a food in which the special bacteria will not develop. I have found it quite difficult clinically to determine just what putrefaction is. However, anyone acquainted with Dr. Hoobler's work must appreciate what he has presented. Dr. Chapin's paper was interesting especially what he reported in regard to muscular work done. Last year I had the opportunity of observing some of the work done by Dr. Benedict with regard to the amount of carbon dioxide excreted which was dependent upon muscular activity. Nothing can be found in the literature regarding this.

Dr. Linnaeus Edford LaFetra, New York: I have used the protein milk for three seasons, having begun it in the Babies' Hospital in 1910. The result of this experience in severe dysentery with mucus and blood in the stools, whether the result of fermentative changes or not, led me to believe that protein milk is the best means of dietetic treatment with which I am acquainted. One is often struck with the rapid improvement that follows its use. In nine out of ten cases of infants with high fever, improvement will be very striking after the administration of protein milk for three days. The living Bulgarian lactic acid bacilli must have part of the credit for the improvement in the true dysenteric and putrefactive cases. Protein milk increases the tolerance for other foods; this is a point that should be emphasized. At Bellevue Hospital, in several instances where even breast milk could not be taken without diarrhea, the substitution of low fat protein milk for two or three nursings daily arrested the diarrhea and the breast feeding could be resumed later. The protein milk may be given with advantage in combination with other foods. I quite agree with Dr. Wilcox's con-
elusions and especially that the preparation of the protein milk for therapeutic purposes should be made from skimmed milk.

Dr. Chapin has done great service in calling attention to the fact that the calories in a food may be not at all a measure of its nutritive value to the infant.

**Dr. Godfrey R. Pisek,** New York. The question of Finkelstein’s feeding should be well threshed out, but, in my opinion it should be regarded only as a therapeutic measure. Using it three or four days one could then return to the breast or other feeding and get good results in a large number of cases. Dr. Wilcox is quite within the bounds in all of his statements. What he says compares well with the experience of those who have used the protein milk for a number of years. A very important step is switching to skimmed milk after the bowel condition has improved.

Referring to Dr. Chapin’s paper and what he says about metabolic water. If we cannot put this to practical application at once it does not lessen its value in infant feeding for a use for this knowledge may be found that will change our present ideas. We can compare this action in the cells to that of a float feed in the carburettor allowing the tissues to take up or to repulse this metabolic water according to their needs.

**Dr. Herbert B. Wilcox,** New York:—Dr. Adams’ difficulty in getting children to take this food may have been due to a paucity of nurses to oversee the feeding of the bottles. The child cannot be left to take the bottle alone or the nipple will surely plug up and the baby become exhausted and discouraged before he has finished his meal.

As to our death rate, last year’s mortality in the infant ward was 34 per cent., that of the preceding year 46 per cent. This decrease can not be said to be due to the protein milk alone. The death rate varies in this ward with the number of premature infants admitted and with the climatic conditions.

Dr. Morse’s remarks were practically the same made by him a year ago. We did no bacteriological work on these patients. The criticism that our classifications and results are not thus supported is perfectly fair. However, this report deals with the use of protein milk as an aid in the treatment of indigestions and is not a study of the intestinal bacteria. In my opinion a bacteriological examination is not necessary for the correct differentiation of digestive abnormalities. The presence of fermentation or putrefaction is certainly possible from an
ordinary examination of the stools. Our cases were by no means all treated alike; they all got protein milk, but they got it as an adjuvant to a diet otherwise carefully modified to meet the particular needs of the case in hand.

Dr. Henry Dwight Chapin, New York: Referring to what has been stated in regard to the caloric values and the system of feeding infants which is in vogue, it seems to me that it should be correlated with scientific teaching at large and a study should be made biologically of the natural processes that occur in the whole range of animal life.

ELECTION OF OFFICERS

Chairman, Dr. Henry Dwight Chapin; secretary, Dr. Royal Storrs Haynes.
RETROSPECT OF CURRENT PEDIATRIC LITERATURE.

Orthopedic Surgery
Under the Charge of
JAMES K. YOUNG, M. D.


Assisted by
A. BRUCE GILL, M. D.

Assistant Surgeon to Widener Memorial Industrial Training School for Crippled Children, Philadelphia.

INOIC STERILIZATION IN SURGICAL TUBERCULOSIS, by Massey, Am. Journ. of Surg., Jan., 1913. The author believes that the ordinary surgical methods of removing a tuberculous focus only tend to scatter the tubercle bacilli over the area of the wound. He advocates the use of electrically diffused ions of zinc and mercury. This is specially applicable to the treatment of tuberculous glands and of tuberculosis of the skin. Needless of zinc and of amalgamated zinc are thrust into the tuberculous mass and an electric current passed into them. He states that in this method there is a practical cure of those forms of surgical tuberculosis in which the colonies of bacilli can be reached by ionization electrodes.

VISCEURAL ORTHOPEDICS, by Geo. O. Jarvis, Monthly Cyclop and Med., July, 1912. The orthopedic surgeon should aim not only to correct deformities but also to cure the functional derangements of the body that often accompany deformities. Displacements and derangements of the thoracic and abdominal viscera may often fall within the realm of orthopedics. Sometimes they are due directly to deformities of other parts of the body, such as lateral curvature and Pott's disease; sometimes to general muscular relaxation which is further manifested in stooping shoulders, contracted chests, protruding and flabby abdomens, and in relaxed and wabbly knees; sometimes to the influence of certain articles of clothing, such as high-heeled and narrow-toes shoes, incorrect types of corsets, and high and stiff and tight neck-wear. These various causes operate to alter the normal posture of the body, and visceral displacements are the result of incorrect posture. Improper neck-wear alters the normal circulation in the head, throat and neck; and thus predisposes to certain diseases. It prevents the expansion of the upper part of the chest: by weakening the muscles of the neck that are attached to the bones of the chest.

Ill-fitting shoes indispose a person to out-door exercise and thus tend to weaken the musculature of the body. Narrow-toed and high heeled shoes pinch the feet, cause flat foot and valgus, throw the entire body into an abdominal position that directly causes visceral displacements in addition to manifold diseases of the back and legs. A correct shoe is one which fits and easily accommodates the foot when it is stretched by bearing the body weight and which has a low and broad heel.

Constipation is most frequently due to weakened innervation and weakened musculature of the intestines and the abdominal wall. It is the sign of a tired bowel. This condition is amenable to hygienic and orthopedic treatment by diet, exercise, massage, hydrotherapy, etc. The use of laxative drugs only makes the condition worse.
Weak Foot, with Demonstration of Foot Strapping and the Taking of a Cast for Plates.—Dr. Irving D. Steinhardt, of Manhattan Medical Association of greater City New York Medical Record says: that the condition of weak foot, from which a large percentage of the entire population suffered, was constantly overlooked, and that to some extent the mistake in diagnosis was no doubt accounted for by the fact that many of the great variety of symptoms it presented were far removed from the vicinity of the feet. It was unfortunate that it was so generally called flat foot, as this was misleading and was one cause for the common overlooking of the condition. While every case of flat foot was one of weak foot, not every pair of weak feet were flat feet. With the weakening of the ligaments of the tarsal bones, followed by the giving way of the supporting muscles we had a partial or complete obliteration of the arch, together with a varying degree of eversion of the foot. The causes of weak foot were numerous, and perhaps the principal one was improper shoes. Among the other causes were general debility, lack of development of the lower limbs, obesity and occupations requiring much standing or ladder climbing. Although weak foot had been classified under a number of subdivisions, the symptoms of all were practically the same; varying only in degree. Among the complications were varicosities of the veins, hypertrophy of the tubercle of the os calcis, thickening of the lower end of the tibia from chronic inflammation of the epiphysis, gout, rheumatism, etc. The symptoms were both subjective and objective. The patient would perhaps complain of tiring quickly when walking, of pain when walking after, standing for a time, of stiffness and difficulty in attempting to walk after a rest. The complaint of pain include some in the ankles, calves, knees, thighs, hips and back. Muscular strain and stretching was responsible for much of the knee pain, and night cramps of the lower leg muscles were of frequent occurrence. Pathological changes in the tissues might cause increased pain, stiffness, and disability in damp or changeable weather, and this accounted for the wrong diagnosis, frequently made, of rheumatism or arthritis. Among the objective symptoms were eversion of varying degree and limited range of motion in the foot, while swelling around the ankle joint, more particularly on the outer aspect, was very common, especially in fleshy subjects. The pain experienced by the patient was not infrequently very much out of proportion to the findings of an examination of the parts. In making the diagnosis it would be found that in the imprint of the foot upon paper after smearing the sole with petrolatum, or upon the floor after being dipped in water, the width of the line on the outer side would show to just what extent the arch was lowered.

As to the treatment, in the simple cases proper arch plates, plus massage and foot gymnastics, would bring immediate relief and future cure. The wearing of shoes conforming to the shape of a normal foot was essential. He was accustomed to order at first an extra sole, about one sixteenth to one eighth of an inch thick at the inner border of the foot and gradually decreasing in thickness to the centre, where it was merged with the regular sole of the shoe. This remained in the shoe until the patient was fitted for these plates until they were freely movable to overcorrection, and foot gymnastics, strapping, and massage, either hand or vibratory, were ordered. Having described the exercises to be prescribed for the feet, he demonstrated on a subject his method of strapping (for which he employed zinc oxide plaster) while the foot was held firmly in a position of flexion and inversion. The strappings, he said, were usually changed twice a week.

restore mobility to ankylosed joints and divides them into six groups: (1) force under anesthesia, (2) interposition of foreign non-absorbable substances; (3) muscle and fascial flap with nutritive pedicle; (4) heterogeneous fascia or membrane; (5) autogenous or homogeneous fascia or membrane without nutritive pedicle; (6) absorbable animal substances.

The author states that the first two methods are obsolete, the third and fourth he considers only partially effective on account of subsequent fever, pain suppuration and sloughing with sinus formation and the formation of new adhesions. The fifth and sixth methods have not been fully tested.

For ten months the author has been testing and employing a method whereby he injects between the denuded ends of the bones a mixture of yellow wax and lanoline in parts of one to two to six. This foreign substance is gradually absorbed, but not before the denuded bone has healed and a new joint formed. He reports a number of cases operated on in this manner with very good results at the time of writing.

Cases of ankylosis in which the pathological process is still active should not be operated upon. If the ankylosis is due to an infectious arthritis, operation should not be performed until the joint has been quiescent for at least a year.

The articulating bones should be shaped at the time of the operation to resemble the contour of a normal joint. A moderate amount of the wax should be injected within the capsule and between the bones but without intra-articular tension to cause opening of the sutures.

Restoring Mobility after Bony Ankylosis of the Joints. The author claims for this method the following advantages; prevention of renewal of the ankylosis, absence of pain after operation, early voluntary action of the joint, absence of fever and suppuration.

Vaccine Therapy in Tubercular Bone and Joint Disease, By David Silver, Penna., Med., Journ., Dec., 1912. The author points out the difficulties met in administering tuberculin and in the value of this method of treatment of tubercular bone and joint disease. If improvement occurs in any given case, how much of the improvement is due to the vaccine and how much to the general treatment? What cases should be selected for vaccine therapy? What dosage of vaccine should be given?

Writers upon this subject are divided in their opinions as to the value of vaccine therapy, but it has unquestionably proved useful in certain cases. Possibly it is most valuable in those cases which are not showing either much improvement or much recession under general surgical treatment. There appears to be no simple and accurate method of determining the dosage. Too small a dose does no good, and too large a dose may do irreparable harm. Therefore, at the best tuberculin treatment is only an adjunct to the generally accepted measures of treatment and should be employed only by those who have given special attention to the subject.

Diseases of the Alimentary System.

Under the Charge of

JAMES WARREN VAN DERSLICE, M. D.

Assistant Professor of Pediatrics, Rush Medical College, Chicago, Ill.

The Association of Kidney Infection with Chronic Infection of the Appendix and Large Bowel. A Suggestion, by Espy M. Williams. Southern Medical Journal. Based upon the almost universally ac-
cepted fact that kidney infection by ascent through the urinary tract rarely takes place except in the presence of some obstruction to the out-flow of urine acting as a predisposing factor, and that hematogenous infections are now believed to be by far the most frequent, and also that the colon bacillus is the organism most frequently found in kidney infections, we will, for the sake of brevity, sum up our offering thus:

1. That the pyelitis and bacilluria so frequently met with in infants and young children is not an ascending infection; that it is not due, as has been supposed, to uncleanliness in management of the patient during enterocolitis, but rather the result of a hematogenous infection which is cared primarily by an inflammatory lesion of the bowels mucous membrane which permits the migration of bacteria into the blood. This tendency of bacteria to work their way into the intestinal structures when an atrium of inflammatory desquamation or ulceration is made for them is well known.

2. That it will perhaps be found that a very considerable number of instances of infection of the kidney occur in subjects who are chronically constipated; who have attacks of appendix colic in which concretions are found within the appendix; who have a membranous pericolicitis, chronic diverticulitis, or, in brief, any obstructive intestinal lesion which favors stasis of the fecal current, minute abrasions or ulcerative lesions of its mucous membrane and migration of bacteria into the blood stream. The possibility of migration of bacteria directly through membranous and pseudo-membranous formations surrounding the bowels, has been clearly demonstrated.

3. It is quite within the limits of possibilities that some cases of primary tuberculosis of the kidney may be due to the same cause. Especially is this an interesting chance since the intestinal tract has recently commanded considerable respect as an etiological factor in tuberculosis elsewhere.

4. Lastly, we submit that as a first cause may always be expected to act, even after the removal of its symptoms, it is wise to look closely into cases of relapsing infection of the kidney, with the possibility in mind of a large intestine lesion, which should be eradicated if found, thus lessening the chances of further difficulty.

1. **Pyloric Spasm and Pyloric Stenosis.**—H. Koplik Medical Record classifies these cases as follows: (1) Pure spasm of the pylorus and the pyloric end of the stomach without any palpable pylorus, with peristalsis and explosive vomiting, loss of weight, and consequent inanition. The constipation present may be only a relative constipation, that is, some fecal matter passes, or there may be several movements, green and fluid in twenty-four hours, or of a brownish color, or the constipation may be absolute and on forced movement of the bowels, little or no fecal matter passes. (2) Pyloric spasm with relative and actual stenosis, with slight or marked thickening or hypertrophy of the tissues of the pyloric. Such cases give vomiting of an explosive type, coming on soon after birth, and continuing for some time with a palpable pylorus, at first, or subsequent to the onset of symptoms. The pylorus can be felt to harden under the finger at the time of greatest peristalsis of the stomach, and to soften after vomiting has occurred. There is constipation, complete at first, which after some duration of the disease mitigates, and fecal particles may appear in the stools. There is marked progressive atrophy and inanition. (3) Congenital hypertrophy of the pylorus so-called with stenosis. These cases, which are only relatively more marked in their symptomatology than the previous class, give exactly the same symptoms; there is the same spasm of the pylorus as an accompanying symptom, the pylorus can be felt just as in the previous class, the peristalsis is just the same, and the constipation is
the same, only possibly more marked. In fact, clinically it is the same condition, only it may manifest itself in more aggravated forms than in the cases in which the hypertrophy and stenosis are not so marked. They are practically the same set of cases as in Class 2...

When operated upon the cases in Class 3 may show considerably more enlargement and hardening of the pylorus than was evident before the operation. This has given rise to the presumption that these cases are a distinct entity apart from Class 2. The author believes that both of these sets of cases merge into each other and are pathologically the same, though clinically one seems a more aggravated than the other.

**Typhoid fever in children** ("Wien. klin. Rundschau,"British Jour Chil Dis.—Zarchi, in a brief historical resume, remarks that whereas it was formerly held that typhoid was frequently in children, and that generally the milder forms were the commonest, the prevalent view is that it is relatively common, and not severe forms of the disease are quite frequent. A small epidemic in Freiburg in the spring of 1910 confirmed this opinion. There were thirteen cases aged 1-15 years (very evenly distributed from the first year), ten cases aged 16-30 years, and six cases over 30 years. The epidemic was traced to the milk supplied by one dealer. The mortality among the children was 10.5 per cent., among the adults 25 per cent. Five of the children had intestinal hemorrhage. In the symptomatology Zarchi points out the frequency in children of vomiting; out of the thirteen patients three children vomited during the early days, and two throughout. All had bronchial catarrh. Rose-spots were only absent in two children (one of them was not seen till fourteen days after the illness began). In nearly all cases a maximum temperature of 40.8 C. was reached; the spleen was found to be enlarged by percussion in one case, and palpation in all the others. The Gruber-Widal reaction was positive in every case. Leucocytic counts in six cases were as follows. Leucopenia in one case, in two others no diminution, and in three the following variations were found: (1) 6650—26,700; (2) 6606—11,700; (3) 6180—9000. Severe nervous symptoms were present in 30 percent. of the cases: there were five relapses and no serious complications.—M. D. Eder.

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**Infectious Diseases.**

Under the Charge of

**ST. GEO. T. GRINNAN, M. D.**

Chief of Clinic in Practice of Medicine, Medical College of Virginia; Visiting Pediatrist, Memorial Hospital, Richmond, Va.

**Tuberculosis in Childhood**—This subject is frequently revised to date, and many are the new notions introduced which do not stand the test of time. Most of these innovations revolve about individual conceptions of scrofula. One would see in the later chiefly "pyogenic" manifestations, in which only the ordinary pus excitors are involved—pyogenic scrofula of Cornet. Another sees in the old clinical conception of scrofula the modern exudative diathesis, or the status thymicolympathicus. A third makes no distinction between the almost universal lymphadenopathy of childhood and actual tuberculosis—the enlarged lymph nodes standing for latent tuberculosis or representing a paratuberculosis.

If we exclude from consideration all doubtful lesions and adhere throughout to manifest tuberculosis of the sort which attacks adults, we obtain clear-cut results. Thus Rohmer during a session of
The Treatment of Diphtheria Endotoxin—A. T. Nankivell, M.D.

The cause of chronicity and persistence of infection in not known. Certainly, it seems to bear no relation to the quantity of antitoxin given to the patient, nor is it associated especially with any one morphological variety of the bacillus diphtheria. Again, it is impossible to foretell in what patients the infection will become chronic, and hence difficult to answer the question of the parent, who asks how long the child will remain infectious. Speaking generally, we should say that children, who physically are not robust, are more likely to become chronic carriers than other more healthy children. Patients suffering from scarlet fever, who at the same time harbour the B. diphtheria in nose or throat, more often because chronic carriers of the bacillus than do pure diphtheria cases. On the other hand, diphtheria patentes who subsequently contract scarlet fever do not tend towards chronicity in the B. diphtheria infection. We have, unfortunately, no original statistics in support of these statements; and much work remains to be done in the elucidation of the incidence of these chronic infections.

Ever since the practice of swabbing convalescent cases of diphtheria became general the treatment of the chronic carrier has received more and more attention. On the whole, it may be said that the treatment of this condition is very unsatisfactory. Perhaps complete isolation (in order to prohibit the possibility of reinfection) has in hospitals, hitherto been the least unsuccessful. Local treatment, antiseptic gargles, syringing, lozenges, sprays, and inhalations have given no definite and immediate results: nor do we wonder at this failure. The crypts of the tonsils or the accessory air sinuses of the nose offer favourable and impregnable resting-places for the bacilli, where they are far removed from the influence of the antiseptic. Medical treatment likewise is unlikely to destroy the organism. It was thought by one of us (A. T. N.) that possibly potassium iodide, given until slight iodism was established, might act antiseptically upon the lining membrane of the accessory nasal air sinuses, but a short trial gave no favorable results, and the treatment was discontinued in order to test the properties of the diphtheria endotoxin which is the subject of this paper. It has been noticed, as the B. diphtheria in these chronic cases grow fewer in number, that other organisms (B. hofmanni, cocci, yeasts, &c.) become more and more plentiful.
in the nose and throat swab; this led us to attempt the cultivation in the nose or throat of these organisms, in the hope that they would overgrow and ultimately depose the B. diphtheria. No success, however, attended the treatment of two chronic cases of diphtheria infection by means of living.

The diphtheria endotoxin was prepared by growing a virulent B. diphtheria on serum or blood-agar in Roux bottles, collecting the growth, washing it two or three times in sterile physiological salt solution by centrifuging so as to remove any adherent toxin, grinding the bacterial mass by the Macfadyen method in the presence of intense cold, and filtration of the ground mass through a Berkefeld filter. The filtrate forms the endotoxin and is standardised by the addition of sterile salt solution as to contain 2 mgm. or 5 mgm. per c.c. It was found by one of us (R. T. H.) that this endotoxin solution was harmless to guinea-pigs and that it possessed considerable protective power against injections of living B. diphtheria. One of us (A. T. N.) also injected himself with doses 2 mgm. and 5 mgm. with the production only of the local reaction mentioned above.

**Isolation in Scarlet Fever.** Dr. C. H. Phillips (Hanley), London Lancet who dealt with the subject under three heads: (1) whether hospitals, as at present constituted, were the most suitable buildings for dealing with the disease; (2) whether the period or isolation adopted at present was too long; and (3) as to the advisability of adopting more open-air treatment in scarlet fever. He pointed out that isolation hospitals had been in existence for over 30 years, but the results expected from them had not been obtained. In his opinion they would prove a failure so long as patients were massed in large wards, and until classification and segregation of different diseases were adopted. To carry out effectually this individual isolation would involve a large initial outlay, but the saving on the cost of maintenance and the shorter stay in hospital would compensate. As to the second point, he believed that in all mild and uncomplicated cases (i.e., those having no discharge) four weeks detention in hospital was quite long enough, and waiting till desquamation had ceased was necessary. He had obtained opinions on this point from the superintendents of 27 isolation hospitals in Great Britain, and the large majority concurred in his belief that too much importance had been attached in the past to desquamation as a source of infection, only six hospitals still professing belief in desquamation infection. The most pronounced opinion was that of Dr. R. Wilne, of Barnardo's Homes, who did not isolate fever cases in any way, but kept them side by side with serious operation cases in the general wards of his hospital, relying entirely on swabbing the throat with 10 percent. carabolic oil and rubbing the body all over with pure eucalyptus oil. The writings of other medical men were quoted to show the change of opinion which had taken place in recent years as to the infectivity of desquamation. Dr. Phillips's third point was a plea for more outdoor treatment of cases of scarlet fever after three weeks of isolation when there were no complications.

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**Surgical Diseases of Childhood.**

**Under the Charge of**

WILLIAM A. EDWARDS, M.D.

Professor of Pediatrics, University of California, Los Angeles, Cal.

**Appendicitis in Children**—Alex. Mitchell (British Journ., Child Dis., 1912, ix, 355) contributes a study of 40 consecutive cases of appendicitis in children, in which the condition was acute, and the
disease had extended beyond the peritoneal covering of the appendix resulting in gangrene, peritonitis or pus-formation. Most writers now agree on the need of early surgical treatment in young subjects, in which class the disease is especially treacherous and fatal. In the present series the youngest case was aged fourteen months, and the oldest fourteen years. The average duration of illness was five days. Nausea and vomiting were not prominent in all cases, but abdominal tenderness and rigidity were present at some stage of every case. In about 6 per cent. of the cases a definite history of a previous attack was obtained, but a large proportion gave the history of previous, continued "stomach-ache." In 9 cases a large, walled-off abscess was found. Three of these cases died, and 5 of the remaining 6 had secondary operations for removal of the appendix. In 5 cases the abscess was localized, but the peritoneum had to be opened to reach the abscess. One of these cases died. In the remaining 26 cases no definite abscesses walled off the appendicular area. In 18 of these cases there was a diffuse peritonitis and a gangrenous appendix in all but one. Six of these cases died. The remaining group include 8 cases which showed a gangrenous appendix, but little or no peritonitis. All these recovered. In this series of 40 cases the mortality was 25 per cent. On the other hand, in all the cases operated on over the same period of two years in the acute stage, before the infection had visibly extended beyond the peritoneum of the appendix no life was lost. Appendicitis in children is a dangerous and deceptive condition as the stage of the disease is difficult to determine. Children are poor subjects for acute infection of the peritoneum, the appendix is often in a high position, and adhesions are not readily formed. The safest course in children is not to be too confident of one's power to estimate the exact condition of the appendix, but to make a definite diagnosis of the disease at the earliest stage of its course, so that prompt surgical treatment may avert a fatal conclusion.

The Operative Treatment of Fractures of the Long Bones in Children—Sampson, in the London Laucet, reports the results of the operative treatment of fractures according to Lane's method as employed in his service. Seventy-two children, varying from one month to twelve years, with fractures of the long bones were subjected to operation and in no instance did wound infection result. The mortality was nil and radiograms in two planes at right angles to each other were taken both before and after treatment in all cases. A metal plate was used for fixing the fragments in sixty cases and subsequent removal was necessary on two occasions. In one case the plate caused a projection beneath the skin of the forearm in a position liable to frequent injury and friction and was removed two and one-half months after operation. In the other case an un-united fracture of the tibia of five months' standing was found with both ends of the bone atrophied and the lower fragment a mere shell. Recent fractures from subsequent examinations show that perfect results were attained in over 88 per cent. of the cases mal-united and up-united fractures giving a perfect result in over 37 per cent., which is claimed by the writer to furnish a strong argument in favor of the adoption of early operative measures as a routine procedure, because if resorted to after mal-unition has taken place the chances of a perfect result are greatly diminished. Perfect function resulted in 97 per cent. of mal-united and un-united fractures. In view of the results a more extended adoption of Dr. Lane's methods for the treatment of simple fractures is urged.

Fractures of the Humerus in the Child.—Savariaud (Jour. de Paris, (Charlotte Medical Journal), says that of all fractures in children, those of the humerus are the most frequent. At the upper extremity transverse fracture of the humerus may occur at the point of
insertion of the pectoralis major muscle. The deformity is so great that even under chloroform it is difficult to make it entirely disappear. Abduction may remain limited, but adaptation of the movements of the shoulder-blade and thorax will take place that will render operation unnecessary. The fragment of the diaphysis may remain prominent under the deltoid and strike against the acromion. As the bone grows in length from the shoulder-joint and contact will cease, the movements becoming normal. Such a prominence has been mistaken for an osteosarcoma. Fractures of the diaphysis of the humerus are of very simple treatment in the child. Obstetrical fracture in the newborn may be treated by a simple pad and bandage confining the arm to the side of the body. The same treatment may be used in all young children. Fractures of the lower extremity of the humerus are frequent, and complications are many and important. In fracture above the condyles the displacement may be slight, or very great. The upper fragment is pushed forward lifting the vessels and nerves, and the lower is displaced far back, simulating a luxation. To differentiate we know that dislocation is as rare as fracture is frequent; in fracture there is an ecchymosis in the fold of the elbow transverse and linear. Great abnormal mobility is accompanied by crepitus; in fracture the prominence at the fold of the elbow is small, white in dislocation it is large and rounded. The three points of prominence, condyles and olecranon, retain their normal relative positions. Lesions of the nerves may cause contraction of all the flexors of the fingers, or paralysis of the muscles of the forearm, due to traumatism of the nerves at the time of accident. If the fracture heals without replacement of the fragments the movements of flexion are arrested by the contact of the coronoid with the upper fragment. Reduction is obtained by traction on the semiflexed forearm and pushing the olecranon into place with the thumbs. The arm is then fixed in this position. If the fracture heals in a vicious position with prominences obstructing flexion these prominences may be chisled off later. Compression of the nerves may demand operation to relieve paralysis. Traction and time may relieve contractures. The arm often deviates outward after healing. Fracture of the external condyle is frequent. The condyle, epicondyle and end of the trochea are separated from the bone. In children from three to ten years of age a juxtaepiphyseal fracture occurs. The growing cartilage is involved and osteogenesis is affected later in life. This fracture results from a fall with the hand outstretched to save the body. The signs are not marked: the forearm is flexed at an obtuse angle, there are pain, ecchymosis, and crepitus over the epicondyle. Extension is less limited than flexion. Radiography is of great value in clearing up the diagnosis, by showing a clear spot at the point of the epiphyseal cartilage. After reduction immobilization should be maintained for two weeks, and then be followed by massage and passive movements. Fractures of the spitrochlea are of slight importance.

Infant Feeding in Health and Disease

Under the Charge of

MAURICE OLIVER MACID, M. D.

Adjunct Pediatrician Beth David Hospital, New York City; Assistant Visiting Physician O. P. D. Pediatrics, Cornell University Medical College; Formerly Physician in Charge of Infants' Milk Depot of the New York Milk Committee, etc., etc.

Some Considerations on Infant Feeding.—F. G. Crookshank (British Jour., Child. Dis., 1912, ix, 31) mentions a large number of considerations affecting infant feeding, based on clinical experience.
The method of inductive logic, the hypotheses based on clinical experience is preferable to the deductive plan, and the diversity of opinions in pediatrics is unfortunate. The problem of infant feeding depends on the mother’s state of nutrition during pregnancy and the amount of stimulation of the maternal glands by particular substances in the diet during and preceding pregnancy. Defective suckling power is often due to a lack of “biological galactogogues.” The milk of a cow fed on fresh pasturage and sweet hay has more biological value than that from a cow fed on artificial fodder such as copra, etc. The peasant woman is usually chosen as a wet nurse in preference to the town-bred product, because she is efficient biologically, having lived on food which has produced her race. This suggests the importance of the biological qualities of the food of cows and other animals that supply human aliment. Practical experience shows that if the child be healthy and the cow well fed and well kept, far less modification of the milk is necessary. Wonderfully successful results have attended Dr. Langmead’s plan of giving undiluted, unboiled milk with the addition of a few grains of sodium citrate. There is probably a definite correlation between artificial feeding in infancy and the functioning of the lactiferous gland in later life. Slightly diluted, unboiled cow’s milk with the addition of some malted food has been of most service to Crookshank. Fresh milk can be increased in quantity from time to time until the child is taking almost undiluted fresh cow’s milk. Malt helps in massing the curd, is slightly laxative, and compensates for deficiency in cream. A little Bermuda arrow-root, well boiled, and taken nearly cold is an excellent, temporary food in intestinal disorders. Veal or mutton broth thickened with arrow-root is a good substitute for milk during the hottest weeks of summer. It is better than boiled milk, if, in making the broth, the sternum and ribs of veal and mutton are first split open. A yearling, well forward with its teeth should have food which exercises its jaws and stimulates the ptyalin and gastric juice, and should not be fed entirely on extractives such as beef tea, etc. The demineralization attendant on tuberculosis points to the value of mineral salts in food articles. One of the biological values of food, the hormonal is very important, and mother’s milk has an homologous hormonal value. Food for mother’s shuld be least interfered with in manufacture or cooking.

Breast-Feeding and Tuberculosis—Dr. George S. Strathy Toronto, in Canadian Journal of Medicine and Surgery, Sept., 1912, in the course of a very sensible article says: There is a steadily-rising wave of opinion that the transmission of bovine tuberculosis to human beings is rare, if it ever occurs. The majority of cases of tuberculosis are the result of infection in early childhood from persons suffering from plu’monary tuberculosis. The tubercle bacilli may lie dormant for years, usually in the mediastinal or mesenteric glands, and later give rise to active tuberculosis of bones, lungs or other organs. In the Tuberculous’ Clinic at the Hospital for Sick Children we find in over 90 per cent. of the cases a history of exposure to infection from a parent or some other person who has pulmonary tuberculosis coming in close contact with the child. This may sound like a strong argument against breast-feeding from tuberculous mothers, but as the father is almost as frequently the source of infection as the mother there is no reason to believe that the child is infected through the milk. Tubercle bacilli have never been found in human milk when the breast was not diseased. Cow’s milk frequently shows the presence of tubercle bacilli because tuberculous ulceration of the udder is common. * *

On the question of tuberculous mothers nursing their babies I am not prepared to give a decided opinion, but my practice at the present time with poor patients, who will be with their children any-
way, is to allow maternal nursing so long as mother and child are thriving. The mother is given explicit instructions to avoid danger of mouth infection by kissing, etc. Amongst the well-to-do, where a nurse is employed to take care of the baby, the chances of infection by mouth are unnecessarily increased by allowing the mother to nurse and handle her child. This risk should be lessened by insisting on bottle-feeding after the first few weeks and during that time precaution should be taken to prevent infection.

The Lancet—Dr. D. Chalmers Watson read a paper on the above subject; the lancet, he said he had made investigations along the following lines: 1. An analysis of the proteins, fats, and carbohydrates in the daily dietary of eight children, about 5 years of age, in good social circumstances, all the children of medical men. 2. The provision of highly nutritious, palatable, one-course meals at very moderate cost for the large number of children (over 2,000) fed by the board. Dr. Watson pointed out that no claim was made as to the data obtained being exact scientific data. They were inexact because they were incomplete. But they were sufficiently exact to give material for reflection, to raise doubt as to the soundness of current theories, and they had enabled the author to formulate a scheme of feeding for use by the board which appeared to meet the requirements alike of the children, the school authorities, and the ratepayers. Special attention was directed to the food requirements in proteins, these being the most important food elements both from the physiological and pathological point of view. For purposes of the present paper the author accepted as correct the commonly accepted standard of food requirements associated with the names of Atwater and Voit. This furnished—

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<td>120 grm</td>
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On this basis the diet of a child aged 5 should comprise:—

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<td>48 grm</td>
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In the series of children investigated by the author the average daily diet worked out as follows:

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<td>72 grm</td>
<td>69 grm</td>
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Dr. Watson concluded that the 72 grammes of protein more nearly represented the physiological dietary for an average child of 5 or 6 years of age than the 48 grammes. Stress was laid on 1. The special importance of the source of protein, the casein of milk being, in general, of much greater value than that of meat. 2. On the different amounts of protein that are called for in the case of children of gouty and tuberculous tendency—in the former the amount of protein and especially in the form of meat foods, being definitely restricted during the whole growing period. In the latter the amount of protein in the form of meat and meat foods should be considerably higher than in the case of the average child, the excess being maintained until the constitution of the child had been profoundly altered by the long-continued use of the correct dietetic regime. The explanation for this was, in the author's view, to be largely found in the special effects of an extra protein diet on the thyroid gland, as brought out by the results of his experimental investigations on the subject. 3. The third point that was emphasised was the necessity of pure unadulterated food, special attention being directed to the use of bleached flour, a large amount of bread now being made not from the natural product of the wheat but from flour which has been subjected to treatment with nitrous oxide fumes. A. Stress was laid on the im-
portance of giving a sufficiency of hard food requiring mastication, giving meats in a form necessitating chewing, bread in baked form for similar reason, at the same time restricting the sugar and sweets in the dietary Slides were shown illustrating highly nutritious one-course dinners supplied by the Edinburg School Board, which brought out the relative nutrition and economic values of meat, lentils, oatmeal, etc.

Lactation and Breast-Feeding—By George S. Strathy, M.D., C.M., M. R. C. S., L. R. C. P. Canadian Journal of Medicine and Surgery. As our whole idea in feeding babies is to follow closely physiological conditions, the question may well be asked, What is the physiological age for weaning? The savage mother nurses her child until it is three or four years old. The woods Indians in Ontario, who have no cattle or other animals from which they can get milk, usually nurse their children up to three years of age, but give them other food as well. It is not very uncommon in hospital practice to see healthy infants who have been nursed for eighteen or twenty months, sometimes even two years. Amongst the well-to-do breast-feeding is usually discontinued at about the tenth month. If mother and child are thriving it is wise, especially amongst the poor, to continue breast-feeding for eighteen months. This is not usually possible. Social duties interfere, and when all conditions for ideal bottle-feeding can be fulfilled such a long period of breast-nursing is unnecessary; but the tendency to shorten the time of maternal nursing is going too far and should be checked.

There is a steady-rising wave of opinion that the transmission of bovine tuberculosis to human beings is rare, if it ever occurs. The majority of cases of tuberculosis are the result of infection in early childhood from persons suffering from pulmonary tuberculosis. The tubercle bacilli may lie dormant for years, usually in the mediastinal or mesenteric glands, and later give rise to active tuberculosis of bones, lungs, or other organs. In the Tuberculosis Clinic at the Hospital for Sick Children we find in over 90 per cent. of the cases a history of exposure to infection from a parent or some other person who has pulmonary tuberculosis coming in close contact with the child. This may sound like a strong argument against breast-feeding from tuberculous mothers, but as the father is almost as frequently the source of infection as the mother there is no reason to believe that the child is infected through the milk. Tubercle bacilli have never been found in human milk when the breast was not diseased. Cow’s milk frequently shows the presence of tubercle because tuberculous ulceration of the udder is common.
BOOK REVIEWS


This unique work touches the personal interests of every physician and surgeon, and also of every practitioner in any branch of the art of healing. It deals with the duties, rights and liabilities of the professional man toward the public as settled by law, and also the legal relations of the regular profession to practitioners of the many schools of healing now in vogue, as well as the status of such healers in the eye of the law. It behooves every medical man to know the multitude of points in which his relations to the public and his fellow-practitioners are subject to a well settled body of law, to the end that he may avoid unexpected trouble on the one hand, and know his rights and powers on the other. This new work is comprehensive and authoritative, and its possession and personal will save many times its cost if only in the item of collecting bills, as well as many an anxious hour. The well-established physician who has bought this knowledge in the costly school of experience will appreciate the value of such a work and will give it a place in his library within easy reach for frequent consultation.

The young physician will be wise to profit by the knowledge so conveniently placed at hand, and will be glad to avoid the trials and troubles of his elders. Conversely it affords the lawyer a knowledge of the relations of his profession to that of medicine. It is unusually serviceable book.


The entire absorption of a large first edition of the Golden Rules of Surgery made necessary the issue of the present one. Its enlargement and elaboration by the junior author has made it possible to cover the entire field of surgery in a thorough and systematic manner, at the same time preserving the character and charming style that made the first edition of this book popular.

In reviewing this volume, one is struck with the force of each statement, showing that the authors have weighed well the idea to be conveyed and have striven to prevent the thought to the reader in a convincing manner.

One is surprised to find cardinal principles enunciated in a sentence, which in ordinary textbooks and systems can only be found after careful dissecting page upon page. How easy it is to forget facts is impressed upon one after reading this volume over and over again. It can be truthfully asserted that to read this little volume over and over will so acquaint one with the fundamental truths of surgery that a view-point of this science and art will be obtained that will redound greatly to the credit of the reader.

The publishers announce that other volumes in this series will follow rapidly—on Gynecology, Diagnosis and Treatment, Pediatrics and Obstetrics.

The first edition of Dr. Hirschman's book met with a hearty reception at the hands of the Medical Profession. The present edition has been entirely rewritten, forty new illustrations, including two colored plates, have been added, and the entire book has been reset. This is preeminently a book for the general practitioner. It is written in the hope that this class of the medical profession will arouse themselves to the possibilities of this line of work and not allow the charlatan and the advertising quack to take from them work which can be done by the legitimate practitioners of medicine. To that end special attention has been paid to office work in rectal diseases and the part that local anesthesia plays in this class of work.

Skin Grafting. For Surgeons and general practitioners, by Leonard Freeman, B.S., M.A., M.D. Professor of surgery in the Medical Department of the University of the Colorado, Surgeon to St. Joseph's Hospital The National Jewish Hospital, and the City Hospital, Denver, Colorado. With 24 illustrations. Price, cloth $1.50. St. Louis C. V. Mosby Company, 1912.

This volume contains the much valuable information on the subject of Skin Grafting. No field of modern surgery has been so greatly neglected in the text-books on surgery as skin grafting, while none is more important. Burns, scalds, and other accidents which frequently maim and destroy usefulness for life, can be successfully treated by this operation. The author gives explicit directions for the preparation of the patient, as well as for the comparative technique of applying skin grafting. The author considers comparative vitality of grafting from old and young persons, the dangers of transferring diseases, biographs, preparations, of the field of operation, where to obtain grafts, the size and cut, as well as placing of the grafts. The method of Thiersch is gone into great detail, so also is the Wolfe-Kraus method, as well as the method of Hirschberg. Grafting from animals is also given and X-Ray burns. The volume is very satisfactorily illustrated, and is just the last word on skin grafting. It should be in the library of every surgeon and general practitioner, to both of whom, it will prove a boon.

Some Don't's, Medical and Surgical

The Fellows Co. of New York, have issued a most timely and a valuable little pamphlet entitled Some Don't's, Medical and Surgical, which will be sent to any physician or surgeon upon request, with the compliments of the manufacturers of Fellows Sy. Hypophos. Comp.

"Appendicitis Don't's".
"Cancer Don'ts (Rectal) and (Uterine)".
"Cardiac Don'ts".
"Salvarsan Don't's".

These are a few of headings and the "Don'ts" under either one of these will amply repay all the trouble you will have in asking for it.
THE CAUSE AND SIGNIFICANCE OF BIRTH MARK

Birth marks are extremely common: children without spot or blemish are the exception. In their simplest form of small pigmented spots, or minute capillary dilatations, they may escape notice altogether. Temporary birth marks in the form of quite extended bright red spots may often be noticed, especially upon the forehead, the eyelids, the nose, the scalp, or the nape of the neck of new born children, which after a few weeks or months at the latest, undergo spontaneous regression and disappear altogether.

The cause of nævi are wholly unknown, both the nature of the lesion and its modus operandi are entirely hypothetical. Kaposi denies its neuropathic origin. Virchow advanced the possibility that slight irritative conditions during embryonat life at the borders of certain fissures, where vessel-development is materially abundant might provoke excessive vessel-development and thus lead possibly to the formation of angiomata, appearing either as congenital conditions, or as growths developing later in life through the awakening into activity of congenital predispositions. This theory, even if acceptance as an explanation of nævi occuring in the neighborhood of such fissures, leaves unexplained a very large number of cases which appear in locations distant from fissures. Heredity as a cause of nævi may be accepted in some cases. Prenatal maternal impressions are often accused of being the cause of birth marks and many cases are cited which lend a considerable degree of plausibility to the claim. Every physician who has practiced for a quarter or half a century has seen many cases of "birth mark" which are the strongest possible evidence of "maternal impression" as the cause.
However it is just as rational to explain these cases on the principal of coincidence.

Pigmented and verrucose naevi remain unchanged throughout life, as a rule. In occasional instances they become the subject of malignant degeneration late in life. Thus, of fourteen cases of melanoid cancer affecting the skin or subcutaneous tissue, noted by Paget, in ten the disease commenced beneath a congenital pigmentary naevus. In thirty-four cases of melanosis of the skin noted by Pemberton, fifteen commenced in or near a congenital mole. As Holmes has pointed out, very often we see persons in advanced life in whom naevi have remained exactly in the same condition and of the same size as they were after birth. Sometimes they wither away and undergo degeneration. At other times, on the contrary, they advance with frightful rapidity, causing horrible disfigurement, or giving rise to hemorrhage which threatens life. Again, after a transient period of activity, they may become stationary, and finally, after standing still for many years, they may again begin to grow. Spontaneous shrivelling or sloughing may be determined by the general debility attending prolonged and exhausting illness. The vitality of the naevoid tissue is always less than that of normal tissue, and inflammatory processes, with ulceration or sloughing, are easily provoked in it. Only in the rarer arterial forms of vascular tumor, or in haemophiles, does the bleeding from erosions of naevi attain much importance.

Naevi are benign growths. The instances in which malignant degenerations have later involved them must be referred to the fact that they present loci minoris resistentiae, favorable to the fixation of the malignant influence whatever it be, just as in many other instances trauma plays the same part in determining malignant degeneration. After removal, no recurrence takes place, provided all the diseased tissue is taken away. Special mention should be made, however of the danger to the eye from vascular tumors, developing in the deep cellular tissue of the orbit. Not only may the eyeball be pushed out from its place with loss of sight, but sloughing of the cornea may result, necessitating extirpation of the eyeball.
CHILDREN'S UNDERWEAR AND OUTER GARMENTS

There has been so much clever advertising concerning hygienic underwear that the public has been led imperceptibly to believe that there is a specific virtue against cold in certain weaves and meshes in place of woolen fabrics in winter. At least this appears to be the idea that patients have concerning their doctor's advice.

In the widespread reaction against woolen underwear, flannel Petticoats and warm stockings the "new" mother seems to think that her physician is prescribing a modern discovery for her child, instead of realizing that he is only trying to mitigate a very bad hygienic state of affairs in the overheated atmosphere in which his patient lives. Even though it be winter, it is impossible for anyone to be comfortable with wool next to the skin when an apartment or house is heated to a temperature between seventy and eighty. Physicians who advise light weight clothing that allows the heat of the body to pass off readily while in the house, and an exceedingly warm set of outer garments for outdoors, are simply adapting the clothing to conditions which they can not overcome, and are infrequently laying up a stock of snuffles and coughs for the children, in the spring and fall. When, after furnace and steam heat is dispensed with, the general temperature of the house is much nearer that of the outdoor air, but it is likely to be at least twenty degrees cooler than what the child has been accustomed to in the winter weather.

One fallacy of the idea lies in the belief that if the light-weight underwear were sufficient in January they ought to be sufficient in May and October. These months, as well as the summer months in the cold climates of the Adirondacks and Maine, are when children should be provided with flannel and woolen garments to wear on days when the temperature is cold. We incline to think that the old adage of wool or half wool and half cotton undergarments for children up to two years of age is the most practical. Of course this requires an exception in the very warm weather of cities. Perspiration and prickly heat will occur with unpleasant consequences if an infant is too warmly clothed, but when one remembers the lack of exercise and the inability to get out of draughts, as well as the damp condition of the clothing which so often occurs one feels like warning mothers that the old-fashioned idea of the woolen
binder and knitted socks may be safely carried out with very few judicious exceptions throughout infancy.

The hardening process which some advise is generally but an artificially applied prescription of common sense to the children of wealthy homes where there is nothing naturally hardening in the hot-house atmosphere. The majority of children, however, are brought up in town and country homes where the indoor heat is irregular, and often insufficient. They run in and out of doors freely, without the careful attention of wrapping up each portion of the body evenly. It is therefore, we believe, advisable that the body should be evenly clothed with flannel outer garments. Thus the child whose own heat is not used and preserved by suitable underclothing is at a disadvantage in the first days of outdoor life especially in the raw spring days. We suggest that if at no other time warm underclothing is used, that it be on hand for country days, when indoor and outdoor temperature is alike raw.

It is impossible to advocate any one method of clothing for all children. The over steam-heated class, whose physicians prescribe well-advertised linen meshes of various fibres are but a small percentage of children. The main underlying principle is to teach a child to create its own heat by exercise, rather than to depend upon artificial heat, and then to conserve that heat as the animals do by warm clothing. For the change of temperature during the passage from indoors to outdoors is not as perceptible when the child is surrounded by a layer of its own bodily heat that is not too easily radiated through the clothing.

There is a vast difference in children; some are so full-blooded that the slightest exercise causes them to perspire, and to readily catch cold if the changes are extreme; these should be lightly clothed, and especial care given to draughts. Others become blue and livid with cold, through poor circulation; these should be clothed in wool, or half wool and half cotton underclothing from wrists to ankles and wear merino stockings and warm overshoes in cold weather, so that they may waste no particle of their natural heat in warming the outer air.

The mother who swathes her year-old infant in flannel bands and shirts and jackets when the temperature is 95 degrees and wonders why it has prickly heat is as unwise, but no more so, than the mother who casts off the woolen band en-
tirely all summer, regardless of cool mornings and sudden breezes and wonders why the child has diarrhea. As the wise woman told Tom De Willoughby, "the medjumer you are with children, the better". So we advise very strongly from principle and experience that the majority of children summer and winter should have on hand moderately warm underclothing, to be used or not with discretion, according to the temperature of their habitation, and that in cold weather they should help to equalize the difference between indoors and out, by the addition of warm outdoor garments, of which the woolen sweater is perhaps the most useful.

THE VALUE OF EXERCISES IN INFANTILE PARALYSIS

This is a subject given very careful and thoughtful discussion in the Boston Medical and Surgical Journal, vol. clxvii, October 1912, by W. G. Wright in a paper entitled, "muscle training in the treatment of infantile paralysis". The author believes that the training of muscle should be commenced as soon as the patient can move his limbs freely without pain, which will usually be from three to six weeks after the initial attack.

He also states that almost every muscle contraction is brought about by the stimulation of nerves from more than one spinal center.

In infantile paralysis "a localized hematomogenous myelitis has attacked the cord and has destroyed more or less at random certain areas of spinal nerve centers. Unless the cord lesion has been extensive chances are rather against the total destruction of all the centers and associations of any large number of muscles, some centers or associations having perhaps escaped." For this reason "there exists in many paralyzed limbs a possible amount of muscular power that is not suspected and will not be available unless cultivated and developed". The absence of function in a muscle or group of muscles does not necessarily mean paralysis, even in the later stages of the affection".

The principles which underlie the training of muscles which have partially or wholly lost their power of voluntary contraction as a result of infantile paralysis do not in any way differ from those underlying the development of normal mus-
The result in both instances is as important in the nutrition of the muscle fibre and in the facility with which the nerves carry their impulses.

The contraction of muscles and the alternate flexion and extension of joints exert a pumping action on the veins and lymphatics which is necessary to the proper flow of the blood and lymph. Moreover, there is a reflex dilation of the arterioles of a contracting muscle and of corresponding area of the skin. Whenever, therefore, a limb is in disuse its circulation is seriously impaired and the muscles waste from lack of nourishment.

In paralysis the beneficial effects of muscular contraction on the circulation may be in part supplied by massage, vibration, baking, electricity, passive movements, etc., and they undoubtedly do, to a certain extent, prevent the wasting away of the paralyzed muscles. Whenever there is, however the ability to contract a muscle, even slightly, by an effort of the will, the muscle cells are more favorably affected by this contraction than by any quickening of the circulation by other means. When not used the muscle cells degenerate and the only way to increase oxidation is to make them work.

If a lively circulation is started in the muscle before it contracts, the contraction will naturally be attended by greater benefit to the muscle fibres. For this reason it is advisable in treating cases of infantile paralysis to make use of the therapeutic measures mentioned above before giving the exercises, even when the voluntary power of contraction is fairly good.

In infantile paralysis certain nerve cells supplying a muscle are destroyed, and those which are left, being unaccustomed to work together, perform their work badly and without coordination.

The possibility of training nerves to work together with precision is shown in the formation of habits. In his "Outlines of Psychology," Royce says, "parts that have often functioned together tend to function more easily together again." The improvement of the nervous system is due to the perfection of the connection between the synapses and the nerve cells. Each time a partially paralyzed muscle contracts, it not only improves the nourishment of its fibres, but also the coordination of the nerves which stimulate it.

The amount of improvement possible for any given muscle is, of course, proportionate to the number of uninjured
nerve cells which supply it. This is an impossible thing to
determine accurately and by far the safest plan in directing the
exercises is to assume that every muscle is capable of attaining
the normal.

If any muscle shows no signs of attaining anything like a
useful amount of function after the exercises have been faith-
fully carried out for a sufficiently long time (at least a year),
it may be advisable to discontinue work on it, as it is an ad-
vantage to give as few exercises as possible, in order to avoid
unnecessary mental fatigue in the patient.

PRACTICAL DETAILS OF THE TREATMENT

Doctor Wright, in describing the details of Muscle Train-
ing, in the Treatment of Infantile Paralysis, Boston Medical
and Surgical Journal, vol. clvii, October 1912, advises that
a patient should never be left alone to do his exercises, even
when he is old enough to understand his own case. The re-
spone of muscle and nerve is dependent on the strength of the
stimulus, and the volition of the patient is greatly aided by
the outside stimulus of a word of command. It is a help if
the physician puts his hand on the muscle to be contracted or
performs the movement passively, while urging the patient to
make the greatest possible effort. Other methods of aiding the
patient's will, such as placing an object within reach of the
part to be moved and telling him to touch it, will, of course
suggest themselves. If the patient is a child the schemes for
exciting interest have to be manifold and varied every day,
but there should not on that account be any sacrifice of pre-
cision in the performance of the exercises. The patient's
mental attitude is always the first obstacle to be overcome.
Whoever directs the exercises should discourage "I can't",
and make the patient feel that "he never has, but he is going
to". If they are to be a success at all a great amount of
faith and enthusiasm is necessary on the part of the physician
or patient who oversees the exercises.

While performing the exercises the paralyzed limbs should
be uncovered, as the action of the exercises, as it eliminates
as much as possible the resistance of friction and enables a
weak muscle to perform movements which would be wholly
impossible for it on a soft yielding surface like that of a bed or
couch.

In all exercise periods the whole attention of the patient
should be required, or his ability to use his muscles will be
very much underestimated and the exercises will be much less effective. For this reason it is desirable that no person except the one who directs the exercises should be present. Certainly no one should ever be allowed as a mere onlooker.

Suitable exercises are given in order of progression from those which the weakest muscles are capable of performing to those which require normal strength. In fitting the exercises to the patient, each group of muscles must be tested, as to what it can do, and given as hard an exercise as it is capable of performing. As soon as the muscles outgrow the exercises first given, it should be discarded and the one next in order of strength should be taken up.
PEDIATRICS

ORIGINAL ARTICLES

CONGENITAL NÆVI

By JOHN H. CARMAN, M.D.
Plainfield, N. J.

The blemishes or anomalies of development of the skin known as nævi, are of great variety, but for the consideration of the general practitioner they may be divided into two classes, the pigmented and vascular: one characterized by an excessive deposit of pigment, and the other by an overgrowth of vascular tissue.

Pigmented nævi are circumscribed lesions of the skin almost always congenital, in which there is an increased deposit of pigment, usually associated with hyperplasia of the derma and epidermis, and frequently with an overgrowth of hair.

There is a wide variation in size, shape, number and distribution of the nævi, also in color, which varies from a light to a dark brown, even black. They are usually small, rarely exceeding the size of a hand, but occasionally may cover extensive areas, sometimes involving the larger part of the back and thigh. In character the largest nævi differ in no way from the smaller lesions, save in the exaggeration of their features, the larger nævi presenting a greater elevation, a greater amount of hyperkeratosis, a more papillomatous or warty surface and a more exaggerated growth of hair. In number nævi are unlimited. There may be one or two or there may be many in the same individual. The larger nævi are usually limited to one or a few in a given case.

They may occur upon any part of the body, but the sites of predilection are the face, neck and back. I have recently seen a dark warty nævus on the dorsum of the foot, a most unusual situation. Their distribution, though irregular is usually asymmetrical.

The simplest form of pigmented nævus is the small flat mole, with which we are all familiar, the so called nævus

*Read before The Tri-State Chapter Alumni C of P and Surgeons —Hoboken Meeting.
spilus. The next type is characterized by increase of the derma with elevation of the lesion; the surface may be smooth or somewhat pitted by large follicles, or it may be mammillated from hypertrophy of the papillae, and in either case there may or may not be an abnormal growth of hair. In other cases there may be an increase of the horny layer with hypertrophy of the papillae, the growth being wart like in character, the nævus verrucous. Sometimes owing to decomposition of the horn and cutaneous secretions the lesion may have a very offensive odor.

Excepting those without elevation, nævi usually show an abnormal growth of hair of dark color and this may be so extensive as to make the nævi distinctly a hairy lesion—the nævus pilosus. Again we find the larger nævi soft and lax, containing a quantity of fat or loose connective tissue, resembling, aside from their pigmentation, lipomatous tumors, nævus lipomatodes.

The etiology of pigmented nævi is not very clear, aside from the fact that they are usually congenital. Duhring and some others are inclined to the belief that many of the flat, smooth, pigmentary hairless nævi, seen so commonly on the trunk, are not congenital, but that they appear subsequently, and the former goes so far as to state that they "are almost invariably acquired during the life of the individual."

The pathological anatomy of nævi is more or less variable. According to Stelwagon "an ordinary pigmented nævus is similar to a freckle, except that it is larger, and with usually, but not always, a variable connective tissue hypertrophy, and commonly a deeper extension of the pigment". In the other forms the conditions vary, the most constant feature being hypertrophy of one or all of the structures of the skin. A cellular infiltration, consisting of parallel rows of cubical or rounded cells, lying in the corium, is quite characteristic of the majority of cases. Virchow believed these cells to be of endothelial origin, while Unna, Hutchinson and Gilechrist look upon them as being of epithelial origin.

Pigmented nævi, though permanent, do not as a rule tend to increase in size when once established, and aside from the disfigurement, the lesion is a benign one, so far as concerns the period of childhood. In later life, under the influence of constant irritation, these nævi are apt to undergo malignant degeneration. This being the fact, it would seem the better part of wisdom to remove these growths, if possible in early life.
Moles may be removed by one of several methods: electrolysis, caustics, and excision.

For the small non-hairy moles, the electric needle, inserted just below the lesion and running its entire length, using a current of from one to four or five milliamperes, will generally give satisfactory results. If skillfully performed the resultant scar will not be disfiguring. In the case of the hairy moles, the hair should first be removed by electrolysis; this of itself will sometimes be sufficient to destroy or cause the growth to disappear. If such a result is not obtained the supplementary treatment above referred to should be used.

If not too large, the elevated and verrucous growths can be treated in the same manner, first removing the hair, and then with the needle inserted perpendicularly to the required depth, going carefully over the entire surface, making the punctures one-eighth to one-fourth of an inch apart.

The superficial moles may be removed by mild caustics which should be used carefully and sparingly, such as trichloracetic acid, glacial acetic acid, nitric acid, and acid nitrate of mercury, or by what, in my opinion, is much better, the use of carbon dioxide.

Small circumscribed lesions can be removed by excision, the edges of the wound being carefully approximated, leaving but a slight lineal scar, or, in the case of the verrucous variety, the use of the sharp dermal curette, followed by the application of nitrate of silver, will often give excellent results.

Vascular naevi, variously known as angioma, nævus vasculosus, nævus sanguineous, port-wine mark, mother’s mark or birth mark is defined by Stelwagon as "a congenital new growth and hypertrophy of the vascular tissue of the corium and subcutaneous tissue, of a light red to deep bluish or purplish color, exceptionally making its appearance a few weeks or later after birth".

It is not my purpose to take up in detail the various divisions of angiomata or blood vessel growths, described by different writers, but to confine myself to the consideration of the ordinary vascular naevus or simple angioma commonly seen in infants, especially about the face and the cavernous variety, or angioma cavernosum of Winnewater.

The former consists of variously sized, smooth, nodular or lumpy compressible growths, varying in color, according to their degree of vascularity, from a bright red to a bluish or purplish
red. Though of congenital origin they may be scarcely perceptible at birth, but increase rapidly in size during the first few weeks of life. Their most frequent locations are the face and scalp, but they may occur elsewhere. In size they vary from a small bean to an area as large as the hand or larger in extreme cases covering the entire side of the face. They may remain stationary or increase in size. Usually after reaching variable dimensions they cease to grow. After a time—it may be several months or longer,—retrogression may take place, in some instances, the naevus becoming gradually smaller and finally disappearing, leaving no trace other than a slightly thinned surface or atrophic patch. Usually, unless treated, the growth is persistent. Anything that momentarily impedes the circulation in these lesions, as coughing, crying or position, will cause temporary congestion, and increased prominence of the growth. In some instances the lesions may seem quite firm, but they usually are soft and compressible, feeling somewhat spongy to the touch. If a greater part of a region, as the ear, be involved, the lesion will have a firm spongy character, probably due to pronounced connective tissue increase, the so called naevus elephantiasis.

From accident, or sometimes spontaneously, the surface is broken and serious or dangerous hemorrhage results. Occasionally a vascular naevus may undergo cystic or cavernous change and it is said, may possibly develop into the angiomata cavernosum of Winnewater. The latter, however is usually, if not always primary, commonly appearing in the first year of life and generally starting in a trauma, which may be mild or insignificant in character. It is rarely congenital. According to Winnewater, cavernous angiomata are similar in structure to the corpus cavernosa, consisting of soft tumors, diffused or defined, of lobular formation, protruding or hemispheric, occasionally distinctly encapsulated, of a steely blue, rarely reddish color and often quite painful with a tendency to increase in size. Exceptionally they may invade contiguous tissue, even of cartilage and bone.

Ordinarily but one naevus is seen in the same subject, but occasionally there may be two or three. Exceptionally they are numerous and of wide distribution.

The statistics of Depaul and Pollitzer show naevi to be present in about thirty three percent of new borns infants. In the opinion of other observers this percentage is considered rather high for well defined vascular naevi. According to Gess-
CONGENITAL NÆVI

ler vascular nævi are more frequent in females than in males, in the proportion of two to one.

The cause of vascular nævi is rather obscure. They have been attributed to maternal impression and intra-uterine pressure. Some striking instances of the former have been recorded but not clearly proven. That intra-uterine pressure operates as a factor in the causation of these blemishes would seem to be fairly well founded from the fact that these growths are generally found on regions that are likely to suffer from pressure during intra-uterine life. Unna states that from ten to twenty per cent. of children have a nævus in the neighborhood of the occipital fontanel, and Pollitzer’s investigation corroborates this statement. Gessler’s analysis shows the relative locations of nævi to be seventy-six per cent. about the head, three per cent. on the neck, eleven per cent. on the trunk and nine per cent. on the extremities.

Virchow suggests a possible anatomical cause, namely, the relation of the nævi to the embryonic fissures of the skin, especially the branchial fissures, pointing to the influence of slight irritative condition in producing great vascular development of the borders of these fissures, which are abundantly supplied with blood vessels, as a possible factor in the causation of angiomata at the sites of predilection—the eyelids, cheeks, nose, and lips.

Vascular nævi consist essentially of dilated as well as newly formed blood vessels, and upon the extent of the dilation will depend the character of the growth. It may be moderate, forming but small tumors, or so extensive as virtually to form sinuses. It may be limited in some lesions to the arterial capillaries, or in others the veins will be principally implicated. Anatomically they have their seat principally in the superficial layer of the corium, but sometimes begin in the subcutaneous tissue.

The diagnosis of these growths presents no difficulty, in fact they can scarcely be confused with any other lesion. Aside from the rare possibility of hemorrhage, the effect upon health or life is nil.

In the small capillary nævi and other circumscribed forms much can be accomplished in the way of treatment; but in those involving larger areas little is to be expected.

In the former type the most satisfactory methods are: pressure, electrolysis, and puncturing with a needle or sharp-
stick, such as a tooth pick, charged with nitric acid or any other caustic, a slight impetus being all that is needed in some cases to start the process of involution and gradual disappearance. Unless the child has passed the age of one or two months the mild plan should first be tried.

Pressure may be applied by means of a pad of cotton or lint fastened on with a plain or elastic bandage, or adhesive straps, using moderate compression. Another method of pressure is that obtained by repeated and thick paintings of colloidian, continued for some days or a few weeks. These pressures can also be combined with discrete puncturing with an ordinary needle in several places over the growth followed by the pressure plan selected.

Pressure failing to effect a cure, and the child having passed the second or third month, we may resort to electrolysis, or puncture with the needle or stick above referred to.

Electrolysis works favorably in some cases, but it is a painful process, and must be repeated again and again, according to the size of the lesion. The method of procedure is to insert the needle attached to the negative pole of a galvanic current which may be obtained from a series of cells or some form of electrical apparatus, somewhat slantingly into the growth, with the positive sponge electrode applied to some portion of the body, near or distant, and allow a current of from one half to five milliamperes to pass through it for two or three minutes. The time and strength of current should depend upon the size of the lesion and the resistance of the patient. This process is repeated until the growth is gone over, making the punctures from one-eighth to one-quarter of an inch apart. Instead of using the sponge electrode we may use a needle in each pole and insert both in the growth.

If we decide to use the caustic puncture, the needle or tooth pick is to be moistened with the caustic and the puncture made about the same distance apart as in electrolysis.

Better than either of the foregoing methods is the application to the growth of liquid air or carbon dioxide. This while painful, requires fewer applications and the cosmetic effect is, in my opinion, better than that of the other methods.

Liquid air is commercially next to impossible. Solid carbon dioxide or snow is readily obtained and easy of application. It is frozen carbonic acid gas drawn under pressure from cylinders of the compressed liquid gas. It may be collected in a fold-
ed towel or chamois skin placed over the vent and firmly bandaged to vent and cylinder subsequently compressing the snow into a solid mass and whittling to the desired size. A still better method consists in the use of a hollow cylinder of several layers of unsized blotting paper of desired caliber, one end of which is tightly stoppered. The open end is placed over the nozzle or vent of the cylinder and firmly attached thereto by adhesive plaster or bandage. The cylinder is then laid on its side and tilted to a slight angle with the nozzle downward. The gas is then turned on and allowed to flow slowly until the liquid begins to spurt out around the adhesive plaster, which is an indication that the mould is full of snow. The advantage of this method is that you have a pencil or crayon of snow which can easily be whittled to the desired size, and the blotting paper is a protection to the hands of the operator. The snow is applied with pressure, the latter depending upon the amount or depth of destruction of tissue you wish to accomplish, to and for a distance of about one sixteenth of an inch outside the lesion, for from ten to sixty seconds.

When the snow is removed the part treated will be depressed and covered with a heavy coat of frost, which disappears in a few moments, leaving the growth looking about as it did before making the application. In a few hours a bleb or blister is observed, the surrounding skin is red and swollen, and there is evidence of decided inflammatory reaction. This however subsides after a few days, the bleb is transformed into a hard, dark crust, which gradually dries up and is shed in a week or ten days. A second or third crust may form getting gradually smaller as the underlying tissue fills in, until it is also shed, leaving a slightly reddened spot, which in time becomes white, and eventually is scarcely noticeable.

Time will not permit me to take up the many plans that have been devised and essayed for the removal of the large port-wine marks, which up to the present time have defied the efforts of man, and which, whatever the method of treatment adopted, are most unpromising.

The cavernous nævi are to be treated with excision or the boiling water treatment of Wyeth. This consists of the injection of boiling water into the growth until it becomes tense and blanched. I have treated two cases in this manner with most favorable results, and would advise it in those cases where excision is not practicable.
GENERAL CONSIDERATION AND CLASSIFICATION OF THE MENTALLY DEFECTIVE CHILD*

SIDNEY I. SCHWAB, M.D.
ST. LOUIS

INTRODUCTION

It is conceivable that in some distant age there will be worked out certain standards of measurement by which civilizations at different epochs may be judged and graded. It would not be surprising to know that an important element of such a standard should be the amount and quality of the care given by a state to its citizens who are mentally and physically defective. It would be, perhaps, a measure based on some altruistic conception of society which would be so fundamental and vital as to be permanent. It is a curious commentary on this fact that the care of the defective child exercised by the state at the present time bears but an indifferent ratio to the degree of attention directed toward the welfare of its normal citizens.

We are dealing with an interesting tendency among human beings, which has its expression in neglect and indifference to those among them who are essentially different in a mental way from their normal. The idiot and the imbecile in the history of the human race have been the victims of this indifference and have been set aside as a heritage of neglect which each succeeding generation has, apparently, been willing to shoulder. To a certain degree, the backward child has shared the fate of the insane. Both in many respects are due to similar causes, and both to the same extent may be regarded as victims of civilization's advance; that is, a certain proportion of the mentally deficient may be regarded as victims of the stress of civilization's own effort at advancement and are products and factors artificial, and, apparently, useless, which have become ingrafted on the race as it progresses toward more ideal conditions.

HISTORICAL

It is an interesting fact that the mentally defective child—and this applies to some extent to the physically defective child—receives but scant attention in the record of medical progress, as is evidenced by the contributions of medical writers throughout the centuries. In looking over the history of medicine from recorded times, one is struck with the absence of comment on the

mentally defective child, and one wonders what became of him in the past ages, when his presence should certainly in some way or another have made itself felt. Hippocrates speaks of epilepsy and has given a very wonderful description of an epileptic attack, and he must surely have seen one of the consequences of such disease in the mentally defective child, but yet no particular mention is made of it. Somewhat later we find considerable attention given to the description of Cretins and a clinical description of idiocy and imbecility of the Cretins type are met with frequently in the literature, practically in the Swiss literature, especially by Felix Plater. It is not until we reach the nineteenth century, and especially in the latter half of the nineteenth century, that the defective child receives adequate attention, and in the years between 1830 and 1848-50 there arose all over Europe (England, France) and America an impetus toward the recognition and the study of the mentally defective child. Many reasons have been given for the neglect so much in evidence in the early centuries of the Christian era, and one harks back to some of the old customs and laws prevalent in the early Roman, Hebrew and Greek civilization. One thinks of the old custom of the Spartans, by which a physically and mentally defective child was left to starve and die on the Taygetos. The reason for the fate thus apportioned out to them was that, being defective children, they would necessarily be defective adults, and thus deficient and useless citizens. In the old Roman times the father of a mentally defective child was not held by law to be responsible for his upbringing and he could abandon him to whatever fate lay in wait. As we approach the middle ages, one reason for the absence of emphasis on the defective child lies in the fact that infant mortality in general must have been very high, and the mentally defective child naturally, owing to his lessened power of resistance, would be the first to fall victim to whatever diseases were prevalent. Another reason, perhaps, lies in the fact that the city dwellers were in a comparative minority and in the scattered fields and small towns and groups of houses constituting the extrarurban life at that time the backward child was too far removed from centers of civilization to be noted by those whose writings have come down to us. There were no places in which such children could be gathered, they were scattered as unnoticed units throughout a huge expanse of territory. A writer on this subject has likewise called attention to the fact that inasmuch as
the standard of education during the middle ages was very low, and as so large a percentage of normal individuals could neither read nor write, nor had any interest or claim to anything outside of a bare existence, the delinquent child was really intellectually not so far removed from the normal as to create much interest.

And still all these considerations do not explain altogether what the fate of such a child was. It is probable that a large proportion of them died from pure neglect, a large proportion succumbed to epidemics prevalent in Europe so frequently, a certain proportion of the more physically vigorous became beggars, or were driven away from home and wandered into the woods and fields and became more or less associated with bands of roving soldiers—in fact, would frequently live close to the earth, perhaps protected by animals, to which they became very closely related; in fact, some of the superstitions of the middle ages are based without question on the idiotic or imbecile child, wandering in groups with herds of wolves and other animals in the woods. An interesting feature of the fate of the defective child in the renaissance was the prevalence of what we would now call the high-grade imbecile among the hangers-on of the courts—the court-jester is frequently an imbecile of a rather high type, in whom one especial talent somewhat characteristic of imbecility becomes unduly developed. A perusal of the literature and a study of the portraits of some of the more famous court jesters suggests that this was one activity to which a proportion of the imbeciles became attached.

In 1847, Dr. Andrew Reed, near London, opened the first English institution for idiots. In 1846, Dr. Howe, in Massachusetts, brought together a commission for the study of the question of idiocy, and two years afterward the first American institution was established. In 1855, Bost established the first institution in France, and in 1834, Germany, at E. Isenach, erected a building devoted to the education of feeble-minded children. Since that time there has been an unceasing effort directed towards the study, the causation, the prevention and the treatment of the backward child, until now the subject has grown to large proportions, so much so that it has its own literature, its own journals, its own societies and an increasing group of well-trained men and women devoted to the study and other aspects of the question.
ETIOLOGICAL

In the question of the causation of idiocy and imbecility, or let us say, the mentally defective child, there are so many confusing factors that it is very difficult before a general audience such as this to state categorically just what principles were at work. The layman, unfortunately, assumes a medical statement to be absolutely true, or absolutely untrue, while we physicians realize that the absolute truth of a medical conclusion is yet an impossibility. In looking over the history of idiocy and imbecility, we are struck with this fact: That the two most important factors in the causation of mental deficiency in children—alcohol and syphilis—did not appear in Europe and reach their later enormous developments until about the fifteenth century. Syphilis apparently, according to our present-day notions, was introduced in Europe about the end of the fifteenth century, imported from America by sailors under Columbus. Alcoholism did not become wide-spread among all classes of people in its concentrated form until the eighteenth century, or thereabouts, so, perhaps, from an etiological point of view these causative factors really account for the lessened number of mentally defective children before this time. The etiological factors can be divided into three classes: First, hereditary; second, intra-uterine; third, extra-uterine.

The most important hereditary factors are the histories of alcoholism, or syphilis, in the parents of the defective child. We are in possession of statistics on this subject, but they differ extraordinarily. For example, in one group of statistics in 246 cases of idiocy, seventy-six were found to give a positive Wasserman reaction in the blood. In another series of 216 cases only thirteen showed a positive reaction; in 200 other cases only three. There are no statistics at present available in regard to the examination of the blood of the parents of defective children for evidence of syphilis. In regard to alcoholism there seems to be less doubt. In Bourneville's statistics of 1,000 cases, 620 showed alcoholic excess in one or both parents. This probably is a very much exaggerated proportion, but it is undoubtedly true that the parents of quite a proportion of the defective children would be considered alcoholics—perhaps, a fair average would be about 20 per cent.

The other factors of hereditary nature are the existence of degenerative diseases of the nervous system in the parents, or relatives, particularly the occurrence of epilepsy and degeneracy.
forms of insanity and other evidences which suggest a parental stock showing a tendency toward nervous and mental degeneracy and extinction.

It is very interesting to note that Krapelin and Plaut have carefully studied the histories of twenty-nine families of drinkers. It is surprising to see the infant mortality in this group—32 per cent. of the children in these families died in their first year of life, 10 per cent. later, and only 103 were alive at the time of the investigation. Of these, ninety-eight were personally examined; 35 per cent. were found to be nervous and psychopathic, two, and probably six, that is, 8 per cent., were epileptics, and 15 per cent. were either idiots or imbeciles. Laying aside for the moment the resources of the age and simple consideration in a study of this kind, one is struck with the fundamental proof that alcoholism on the part of the parents is a very important etiological factor in the production of mental deficiency.

Of the intra-uterine, or congenital causes we know considerably less, but it is conceived that all sorts of injuries and infections on the part of the mother, and other causes of which we know less, might be important elements in the causation of brain defects, or damages, which later would produce defective children in a mental way. Among the prominent causes are injuries received during labor, prolonged difficulty and insufficient aid, which factors must be taken into consideration. Injuries by forceps were formerly supposed to be a very important factor in the causation of idiocy and imbecility. There are all sorts of statistic conclusions of this point. Weygandt investigated carefully the history of 1,100 cases of idiocy and imbecility and epilepsy, in only seventy-eight of these was there a history of difficult labor. In forty-seven cases of difficult labor there were only nine with infant cerebral palsy and epilepsy, and among these only three could be found in which difficult labor was the only etiological factor.

Therefore, I think it is reasonable to conclude that congenital, intra-uterine trauma and difficult labor are only of the less important factors of causation in this connection.

Of the extra-uterine causes, chiefly may be mentioned trauma of the head particularly and a host of acute infectious diseases which attack the brain or meninges, forms of meningitis, or meningitic complications which produce defects of an anato-
mical nature in the brain itself, or very often later infection in a previously normal child.

CLASSIFICATION

There have been many efforts made to classify the mentally defective child, and all of them have been subject to endless criticism. Classification at best is only of temporary importance and only serves to group in our minds certain similar types. You will find in the text books very fine descriptions of idiocy, imbecility, backwardness, deficiency, various kinds of deficiency, like, epileptic imbecility, hemiplegic imbecility, etc. I think for our purpose, if we divide the mentally defective children into three classes, we will get, perhaps, a fairly just conception of the whole subject. We would find to be in one class the idiots of all types and all forms, meaning by the term such a child whose mentality is insufficient for any educational attempts. Such children never learn to walk or talk; they practically are useless and absolutely helpless units in civilization. As soon as an idiot can be taught to talk and understand, that moment he would graduate from idiot class in to the one next above, to which the term imbecile may be given.

Imbecility may be defined as that degree of lessened intelligence which can be educated to some approach to the normal, and this approach may be from a very slight to almost a normal standard. Now, in the classes of imbeciles we must sharply distinguish two classes—one a destructive and antisocial imbecile, the other a non-destructive, or social imbecile. The third class we might use to simply call a backward child, meaning by that simply such a child as not possessing quite normal mental intelligence and initiative effort. Such a child is capable, through educational methods, to become practically normal. Before closing the subject of classification, it is interesting to mention the effort that has been made by Binet and Simon, an effort towards the establishment of definite tests for the classification of the grade of intelligence in children. These investigators have devised an average set of tests for children from the ages of 3 to 13 years, and each child is required to meet the test at his age, or he is classified below it, or where he may belong. While these tests are not absolute proof of a child’s mental deficiency, yet it must be admitted that it is an attempt towards a better system of classification and more definite knowledge of the status of the deficient child.
First—Prophylaxis.

Second—Special Schools as Part of the Public School System.

Third—Institutions for Idiots and Imbeciles.

Fourth—Colonies.

Fifth—Individual Effort.

In so short a paper as this only a few words can be said in regard to the preventive measures which might be used to modify, or cause to disappear, some of the factors having to do with the causation of defective children. It can easily be seen that most of our efforts must be directed along the lines of prophylaxis: Such methods as would limit the amount of alcoholism, that would prevent the marriage of the physically and normally unfit, that would lessen the destructive effect of syphilis on the individual and his descendants, such measures as these would, after a few generations, no doubt show their effort in the lessened number of mentally defective children. In some such a general way as this prophylaxis measures would have to be carried out.

For the present we have such lines of activity which have shown a certain amount of adequacy in dealing with the problem as it exists. Briefly, they are the organization and development of special schools, generally as a part of the public school system, for the instruction of the mentally backward children,—institution for the segregation of the idiot class and for the instruction of such of them as are capable of rising out of it. Such institutions should be controlled by the state and should be allowed to develop as the need demands. Naturally, privately endowed schools for those who can afford to pay should receive the greatest amount of encouragement, for in them frequently there is, on account of the small number, greater opportunities for the development of individual methods of instruction.

Then there is the idea of colonies, generally located in the country, in which groups of imbecile individuals can be gathered, there to lead a more or less communal life, where their individual mental and physical defects shall not be brought into contact with the absolutely normal.

And, lastly, there comes the individual effort directed to the individual case. Particularly would this be effective in that class of imbeciles in which criminal and antisocial tendencies
are mostly in evidence. The Juvenile Court, with its various officers, performs a most important service in reaching that type of mentally defective children which fills in the gap between the purely mentally deficient and the beginning criminal.

However inadequate such a general scheme as this would seem, it yet points out, perhaps, the increasing interest which society feels for those of its members who are mentally deficient.

Humboldt Building.

SEVEN SEX TALKS TO BOYS

By IRVING D. STEINHARDT

New York City

In the first talk of the series we discussed the anatomy of the male creative tract in a brief way. You were told of the formation of the semen and the spermatozoa. The spermatozoa are the essential contribution of the male to the creation of another human being. It is a microscopic animal, by which term I mean it can only be seen by the aid of a microscope. It consists of a head, body and tail and under the microscope its movements can be seen and studied. The tail seems to be the part that does the actual physical work of the movements. It has been estimated that as many as thirty-two million of these little animals are ejected from the male organ at the time of the sexual act. Healthy spermatozoa fertilizing a healthy contribution of the female to creation means healthy children as things go and vice versa. All of you should know that children are the result of the proper union of the male and female elements of generation. Also all of you should know that these elements are brought into contact with one another by certain relations taking place between the male and female. This act is known as the sexual relation or marriage relation and should never be indulged in before marriage. The reason for this will be spoken of later in my talks to you. When you were born all your sexual organs were present but were not sufficiently developed to take up their function of creation. All the time however you were growing older, they were developing more and more, although perhaps you were not aware of it. True, as you approached the age of twelve years or thereabouts you may have noticed certain changes about yourself but you did not pay particular attention to them probably. It was about this time however that the wise father would have had a heart to heart
talk with you about yourself, your functions and your duty as a real man towards the sex of your mother. However in this regard most fathers either through absolute ignorance of facts and their duty to their sons, or through a foolish sense of false modesty which they permit to overshadow their duty, neglect to have this heart to heart talk and permit their sons, the future fathers of the nation, to grow up in densest ignorance of a proper knowledge of sex and things sexual and to acquire a vicious and wholly false knowledge of the subject on the street from dissipated associates. Is it any wonder that the insane asylums report an increasing population? Is it any wonder that many young men in years are through ignorance and its resulting folly old men in everything but years and good sense? Oh! the pain, suffering and even disgrace that would have been spared them had they acquired the proper sex knowledge at the right time and profited by it. Every physician sees them in his practice and can tell you how true is this statement. I am going to try and tell you what should have been told to you in such a heart to heart talk. As a little boy your voice was probably soft and sweet and somewhat musical. Then came a time when your voice became harsher and somewhat funny in tone. You were told your voice was changing. This was one of the earlier signs of approaching graduation from the kingdom of little boyhood into the early stages of manhood in which you are spoken of as a youth. At the same time you became aware that your body, which heretofore was perfectly hairless was now changing in this regard, for hair was making its appearance at several places. Under the arms hair of courser texture than that of the head was making itself seen. On the front of the chest also some was coming out. This may have puzzled you quite some, but more puzzling was the fact that not only was this kind of hair coming out around that part of your body that some natural born instinct told you was different in some way from other parts, but was coming out here very fast, or at least faster than in the other places. You became somewhat different in the company of your girl friends. It was a difference that you could not exactly explain had you been asked to, yet you felt it and when in their company your hands and your feet felt about the size of canalboats and were continually getting in your way. You always felt rather strange and awkward in the terrible presence of that mysterious being known as a girl, unless it was a sister or perhaps a cousin. Any
so called game of forfeits, which usually is only another name for kissing indiscriminately, took on a new significance and the
kisses you gave or received from certain of the opposite sex
seemed different to you than those you had gotten formerly.
They seemed to arouse in you certain peculiar sensations you
had not known before. You grew hot and cold alternately under
them and were uncomfortable. All of these things were the
real awakening in you of the knowledge of things sexual. The
fact that this knowledge was awakened meant that your sex
education was also to be begun. This hair that came out about
the creative organ is known as the pubic hair and merely in-
dicated that the inner organs of creation were approaching
maturity and soon they would be able to undertake their full
duties, which duties I have already mentioned. Premature
use of these organs in an attempt to make them perform the
duties of the mature organs means trouble in the end with a big
capital T, particularly as regards the nervous system. It is
time now to say to you very emphatically that the sexual re-
lation is absolutely unnecessary to you or any other male. It is
merely a bodily function that under certain conditions may be
called upon to perform certain duties and that is all. Your health
will not suffer in the least if you never indulge in it from birth to
death, but both your health and your life may be ruined if you do
indulge in it illegally, to say nothing of the health and life
of your future wife and children. You may think you have the
real desire for this relation but believe me it is merely a brute
animal heat that an application of cold water would subdue, or
which would be forgotten by close attention to your work or
your studies. In fact I have noticed that young men who are
interested very much in healthy athletics are not troubled much
by sexual aspirations. They haven’t got time nor inclination to
let their thoughts wander along these lines, so they are not
troubled with false sexual excitement otherwise known as a
debasing animal heat.

Perhaps what I have to say later to you will make more of
an impression on you and therefore be of more benefit to you if
I rather twist the usual programme of my lectures about some,
and discuss the venereal diseases with you now. By venereal
diseases we mean diseases which are usually contracted by in-
dulgences in the sexual relation. Illegitimate sexual relations
most always, because the decent, clean, virgin girl whom one
marries is not liable to have these dirty, vile diseases which
ruin the health and mind of those who contract them. It is the degraded women who offer up their bodies to you to gratify your animal desire on, that usually infect you with the poisons of these destroyers of human happiness. Venereal diseases are well nigh incurable for many reasons, sometimes the fault for a non-cure resting on the doctor but most often the patient is at fault. The principal venereal diseases which I will talk to you about are gonorrhea, commonly known as "Clapp", and syphilis commonly designated as "blood infection". It is estimated that seventy (70) per cent. of males who indulge their animal desire are infected with gonorrhea by the fallen women with whom they have consorted. Perhaps from twenty five to forty per cent. of those indulging in these illegitimate relations acquire syphilis. It is possible to acquire both either at the same or different times. One attack of gonorrhea does not prevent further attacks. Once acquired neither of these diseases is easy to be cured of, which accounts for the fact that from seventy to eighty women out of every hundred operated on for some condition affecting their sexual organs have the venereal diseases, especially gonorrhea, to thank for their condition. A most disgraceful showing for a so-called civilized world to make and a most shameful record for the male sex who like to boast of their gallantry towards the sex of their mothers and sisters. We are hoping however to change these records of worse savagery towards our mothers and sisters by educating our men and women properly in matters of sex. We are trying to make matters of sex less of a mystery to both sexes. We are endeavoring to show the male that the sexual relation is a most sacred thing, too holy to be indulged in with other than the woman of his love who is bound to him by the bonds of matrimony; that it is not a mere pastime or a something to be debased by being made the basis of a commercial transaction with some unfortunate degraded woman, or as the windup of a drunken orgy. We are trying to educate the female to demand of the male that the same sex purity he demands in her, she should demand in him and insist on it. "Sauce for the goose must be sauce for the gander". Gonorrhea, which we will discuss first, is an acute infectious disease caused by a germ known as the gonococcus of Neisser, Dr. Neisser having been the famous bacteriologist who discovered this germ which is the the cause of so much human misery and unhappiness. Gonorrhea is sometimes called urethritis, so anytime you hear this
latter term you will know that probably gonorrhea is meant. One may have acquired this disease and continue to spread it around, because before the disease manifests itself openly some days pass. Usually the average time is from two days to a week, although in some cases as much as three weeks may elapse before acute symptoms appear. Do you realize that with these delayed outward manifestations how an infected person, either male or female, can spread the disease by continued immorality? The early symptoms are prickling sensations at the urinary opening which is becoming inflamed, swollen and sticky. At first the discharge which comes from the urinary opening is thin and grayish white. Pain may be constant or only during and immediately after urination. The pain during urination is sometimes severe enough to cause fainting. It always causes a great amount of suffering.

About 48 hours later the symptoms have all increased very much. The urinary opening stands open, the immediate neighborhood of the opening is intensely inflamed, the secretion is very much increased and is of the nature of thick pus and all the pain is worse. This continues about a week with increasing intensity. The glands in the groin swell up and become painful. Erection of the penis occurs and helps add to the patient's pain and misery. Night time is the favorite time for this particular symptom, therefore much sleep is lost. By the end of the second week the height of the acute stage has been reached and there is a gradual recession of the symptoms towards normal, but even this decline of symptoms may stop suddenly and the acute symptoms return again with all their sufferings and miseries. Recalling the anatomy lesson of the male genital parts which are, as you already know, very intimately connected with the urinary system, you can readily see the possibilities and probabilities. And no matter what mind picture you may paint for yourself, you are not likely to have exaggerated. Let us follow this infection in its travels and see the damage it does and the pain and destruction it causes, because it has been given a foothold in the body through immorality. The gonococcus is first only in the anterior or front part of the urinary tube or urethra. It is not however an easy task to keep this invader from traveling elsewhere, so very soon it travels backwards into the other parts of the urethra and finally gets into the bladder. In some cases it may not even stop here but continue its attack upward into the ureters, which are
the tubes that convey the urine from the kidneys into the bladder, and finally invade the kidneys causing abscesses in one or both. This abcess formation may also take place in the bladder when this organ is invaded. Again recalling the numerous small glands that open into the urinary tube or urethra, the chance of the spreading infection getting into them is very good, and while this class of infection will prove both very painful and serious there are still others of still more serious consequences. The glands in the groin on both sides may become infected and at times go on to abcess formation. Bear in mind that all these complications are extremely painful and are not at all rare. When the prostrate gland becomes involved you have a most painful and serious complication which if not checked in time means operation for the resultant abscess. Perhaps by this time you realize somewhat that an attack of gonorrhea is not the "laughing matter" that perhaps you thought it was and still I have more to say about it. The infection may attack the other parts of the genital tract such as the tubes leading up to the reservoirs of the semen or even the reservoirs themselves. The testicles may also be the seat of this gonorrhea inflammation with very disastrous results, particularly if an abcess should form. Besides all of the forgoing "pleasures" there are some others of a general nature, the main one being a so-called rheumatism caused by the gonorrhea infection and therefore designated as a gonorrhea rheumatism. Some one once said to me that if they had a terrible enemy they would wish him to have at one and the same time what you call St. Vitus's dance and acute articular rheumatism. Had a worse wish been desired gonorrheal rheumatism would have been substituted for ordinary rheumatism. Ask any one who has had this illness and they will tell you better than I can picture it to you, the fearful agony they suffered both night and day. Another of the distressing features of this disease is the fact that the joints attacked by it are very liable to be entirely destroyed so far as movement goes or even usefulness, or left in a partially crippled condition. The pus of the gonorrhea infection you see, therefore, is certainly a dangerous one. Should any one of you be so foolish as to put yourself in the way of contracting this disease and rightfully succeed in your efforts to get it, I want to warn you to be extremely careful in the handling of yourself, both for the benefit of yourself and others. Be careful to thoroughly disinfect your hands.
after handling either the dressings or the organ itself. Gonorrheal pus in the eyes spells blindness with a big capital B unless almost more than immediate medical attention is had. To save yourself and others, therefore BURN everything that may have become contaminated, or if it is something you cannot burn why boil it for at least thirty minutes after the water has come to the boiling point. Take no chances either with others or yourself. A person with gonorrhea should endeavor to avoid using public toilets, and when using any toilet should take care to see that the penis is well covered so that no pus will be left on the seat. I take occasion right here to warn all of you never to use a toilet seat without first cleaning it off. This precaution will prevent you from “catching” other things besides gonorrhea probably. Gonorrheal poison may in the course of a gonorrheal rheumatism attack the heart. I need say no more. It is bad enough for the immorally inclined male to contract gonorrhea and if he was to be the only sufferer through his unmanly conduct in debasing the sex of his mother and sisters we would not, perhaps, waste much sympathy on him. He was low enough to assist in the commercializing of the most sacred of human relations to gratify a false sexual desire, therefore if Mother Nature punishes him for his unnatural action, he put himself in the way of the punishment and must be content with what he got in that line. But gonorrheal infection does not stop with the male. I have already told you that a very large number of males who contracted this disease never get cured. The fault for this fact may be either the doctor’s or the patient. It varies in the different cases. This means that these uncured males are able to give the disease to others in the course of the marriage relation—and that is exactly what they do when they get married. The uncured gonorrheal patient marries a girl for whom he professes great love and devotion and shows how sincere he is in his protestations by making the girl who is so unfortunate as to be the recipient of his love, an invalid for life while they are still on their honeymoon. The fact that he had no such intention does not restore the woman to health and happiness and give her back her lost function of motherhood. The gonorrheal germ introduced into the female may run such a severe course as to necessitate operations of the severest kinds on the woman so infected, operations which may be so extensive in their scope as to leave the woman practically unsexed. In other women the disease may only run.
a severe enough course to destroy the power of conception—that is to destroy in its victim the inestimable privilege of motherhood. The records of the causes of blindness show the disgraceful fact that about thirty persons out of every hundred blind people that you see lost their sight at birth through the fact that in the birth canal of the mother there was gonorrheal pus, and some of that pus got into the eyes of the baby about to be born and condemned it to a life of darkness and misery. Would you like to be one of these fiends that is responsible for the blindness of his child? No, neither you nor anyone else would and yet—in most cases that gonorrheal pus was put into the birth canal of the unfortunate mother by the father of the child. The cry of grief striken remorse, "I did'nt mean to; I thought I was cured" will not restore the blessing of sight to that little innocent baby doomed to life long darkness because it was so unfortunate to have for its father one who believed he must "sow his wild oats" before settling down for life. The Bible, I believe, it is which states "As ye sow, so shall ye reap". Do you want to reap such a harvest? Just think it over very well—thirty out of every hundred—and let this fact sink very deep into your minds. You will note I have said nothing about treatment and how any one who has had gonorrhea may be able to tell when they are cured. Well the omission has been on purpose. I do not propose to do so except to give you some good general advice. I will interject some of it right here and it is of a kind that I want you to spread far and wide, for the more this particular bit of knowledge is spread the fewer blind babies there will be. Here it is, and please listen most carefully to it,—loss of eyesight at birth from gonorrheal pus can and should be prevented. Bear this in mind for the present and future, that two drops of a two percent silver nitrate solution dropped into each eye of a newborn baby will save its eyesight if there was any necessity for such protective measures, and do no harm if there were not. Answer:—Every new born baby should have this protective measure taken no matter what the pre-marriage sexual history of mother and father. Every parent, father or mother, should see to it that the doctor or midwife in attendance at a confinement takes this precaution. You are not attempting to teach the attendant his business if you see to this because the properly trained one will need no reminder from you to do this, and the careless or neglectful one needs the implied rebuke. Although I have by no means exhausted the sub-
ject of gonorrheal infection I will draw the curtain and give no more harrowing, although strictly truthful details. Do not believe that a gonorrheal infection is an easy thing to get rid of when acquired. It most certainly is not. It takes good hard work and most skillful treatment on the part of the doctor, and a strict and honest adherence to the rules of the treatment on the part of the patient to achieve the best results. The corner drug store clerk may endeavor to convince him that he can safely permit him to usurp the duties of an experienced doctor, but if the victim of this disease has any sense left at all he will tell this would be doctor most emphatically to stick to his own line of work. Should he do otherwise why he is very liable to regret it and also gain a membership in that very large army of chronic suffers from gonorrhea. Uncured gonorrhea oftentimes leads to stricture of the urinary tube—a very serious condition. There should be law requiring both males and females to have to undergo a physical examination to determine their freedom from venereal diseases before they be permitted to marry. Every male who has indulged in illicit sexual relations before marriage should voluntarily have such an examination made even now, without such a law, before getting married. The question naturally arises as to how you can guard yourself against gonorrheal infection and the answer to it is a most easy one. First and foremost, lead a strictly moral life; second, refrain from being masturbating or handled in any way in these genital parts; third, do not use an "in common for everybody towel"; fourth, never sit upon a toilet seat without first cleaning it and avoid having the genital parts touch it in so far as this is possible; fifth, sleep alone whenever possible and when sleeping out of your house particularly insist on fresh laundered bed clothes being put on your bed; sixth, use only your own clothes—and this refers especially to underclothes and bathing suits; seventh, avoid foods, actions, and "literature"(?) which arouses animal desire thereby tempting you to forget the moral laws; eight, refrain from any sexual familiarities of any kind even with members of your own sex; ninth, let your mind dwell upon other things besides sexual acts or the like; tenth, just be a REAL man. I will close my talk here believing I have given you "plenty of food for thought", certainly enough to last you until our next talk when we will discuss syphilis.
Gentlemen, you are no doubt aware that, all things considered after account has been taken of all possible factors, the evidence seems to show that the great majority of babies die from improper feeding. What constitutes proper feeding is undisputed, namely, the mother's milk is the best food for the baby, but just what constitutes improper feeding is not as clear as might be desired. I wish, in this short paper, to present a few remarks upon some of the more common errors of Infant Feeding, and I shall endeavor to analyze some of the causes which lead to the disasters that are attendant upon faulty feeding.

The most essential feature in Infant Feeding reform is education, first of the physician, through them the nurses and mothers. When one remembers that approximately one-fourth of all deaths occur in the first year of life, and that of these over sixty per cent. are due to gastro-intestinal disturbances, the physician begins to feel how important the proper nutrition of the infant is. It is little wonder the physician makes error in Infant Feeding when the Pediatrists make so many conflicting statements, some obtaining excellent results with one food mixture, while others have found the mixture harmful; some denouncing the very elements in a food to which others ascribe its efficiency. But although the dissemination of knowledge of the proper method of feeding be slow, it is evident that some reduction of these disasters has been, and can still further be obtained by a scientific study of this subject and application of the results in practice. In looking over the number of cases, which present themselves each month at the clinic of the Children's Free Hospital, I was surprised to find that upwards of eighty per cent. of that number were having symptoms referable to errors in diet. The catastrophes which were encountered were traceable, not only to the artificial method of feeding, but were also not uncommon among infants brought up on the breast. When such appalling facts confront us, our duty as physicians spurs us on to greater efforts to attain such knowledge as will help to save and develop, properly, the little ones intrusted to our care.

I want to first call your attention to a fault which is.

*Read before the Wayne County Medical Society. (Detroit Medical Journal).
neither in the food nor in the manner of feeding, but in the personnel which directs the feedings. (1) The physician often hears such expressions as these, from the experienced nurse, "I have my patients nurse their babies every two hours, or feed them whenever they are hungry," or "I always feed my babies such and such a mixture or such and such an amount at each feeding." In other words, talking of the feeding of an infant as if she were a competent person to direct the feedings when she has less than a smattering of the very rudiments of Infant Feeding. I recall very well a child of six months, for which I was directing the feeding, and though causing me some anxiety was prospering fairly well, but not quite fast enough to suit the mother, and through advice of an old and experienced nurse, who had been the mother of ten children, she changed the infant's food and disaster followed. When a few days later I was called again to readjust the feedings, I learned that though she was the mother of ten children, she had only raised two of them, the others dying from gastro-intestinal trouble. Such instances as these are very familiar to every physician. I am afraid that in many such cases the fault lies with the medical man. He has attended the confinement and taken excellent care of the mother, but has left the details of feeding the infant to the mother or nurse. Or perhaps if artificial feeding is inevitable, he has said, "Try the baby on some milk and water," leaving those in charge to decide upon the proportions, and to add a little sugar and possibly cream on their own responsibility. Naturally enough, the mother, seeing the attending physician apparently attaches so little importance to details, begins to modify the feeding on her own account, or through the advice of the nurse or some kind neighbor, with disastrous results. After the mischief has been done, the mother often takes the baby to the child's specialist, without even mentioning it to the family doctor, and he hears such expressions as this: "Doctor So and So is good for ladies, but he does not understand babies," or, "He takes no interest in babies." The medical man who attends the confinement should give direction as to the nursing or feeding of the infant, and see to it that as long as he is attending, no nurse, trained or untrained, presumes to alter the feedings except in accordance with his specific directions. By so doing, he would not only do a great service to the child, and give great relief to the minds of the parents, but at the same time he would
prevent such unkind criticisms as those to which I have referred.

Next, let me direct your attention to errors which may be caused through milk supply. In almost every community there is sold milk at a high price under the name of "baby milk," or "nursery milk," or some such type as would indicate the milk to have some special qualifications as a food for the baby, when as a matter of fact, these claims are frequently unfounded, the milk usually being taken from the same can as the ordinary table milk. Or the milk man, from his point of view, may imagine that he has an especially good milk because it is rich, or from Jersey cows, therefore it is particularly suited for the infant and is sold for nursery milk. These should be avoided unless an analysis can be obtained or the particular dairyman's interpretation of "baby milk" is known. Obviously, if such rich milk is being diluted under the direction of the physician, as if it were ordinary milk, it is likely enough that trouble will ensue. On the other hand, it may be very poor milk indeed, and the ordinary dilution will eventually lead to disaster. These errors will be somewhat avoided by the physician in this community, since he can now use a milk certified to by the local "Board of Health," that is, milk that is not treated in any way to preserve it, nothing is added to or taken away from it—simply pure milk.

Another fallacy to which I wish to call your attention, and which is likely to mislead not only the laity, but the physician in Infant Feeding, is this: That because an infant is gaining in weight and has neither sickness nor diarrhea on a particular food, therefore the food is a good one. For instance, Mrs. A's baby was fed on condensed milk, is healthy looking and apparently well, therefore it is a good food. If these cases be looked into closely, the physician invariably will find that such babies are not as healthy as they should be. The following case will illustrate what I mean: John T., the only child of healthy parents, was nursed for about three weeks and was then put upon whole cow's milk, more or less diluted with water. He has had no symptoms to alarm the parents, but had progressed only fairly well, vomiting only occasionally after feeding. His bowels were constipated but smooth, his head sweat a great deal, he was fussy and rested poorly at night. He was brought to the hospital at the age of seven months, was fairly well nourished, weighed fourteen pounds, pallor was marked. He could hold up his head but could not sit alone. When support-
ed there was a marked general kyphosis, the frontal and parietal eminences were enlarged, the anterior fontanelle depressed. The rosary was discernible, and there was moderate enlargement of the epiphyses at the wrists and ankles. The blood picture showed a moderate anemia. This, you will recognize as a case of rickets with secondary anemia. This child has not always been acutely sick at any time, but has not done well on the combination of low fat and sugar with high proteids, which he has had in milk dilutions. You have all seen similiar cases brought up on barley water, oat-meal water, or the patent foods, where every thing goes smoothly enough apparently until the child reaches nine or ten months of age, when symptoms of rickets or more grave nutritional disturbance is discernible, due probably to excess of starch and deficiency of fat. I mention these particular instances because they are quite overlooked both by parents and physicians. Every physician knows that there is some deficiency in even the most carefully devised artificial food for infants, and that the best food for infants is milk from the healthy mother. He also knows that more mothers would and could furnish breast milk to their babies with greater ease and comfort to themselves and their babies if they, as medical advisers, took more pains to teach them the facts about the physiology of lactation. They should teach them the evil effects of too frequent nursing, of too long intervals between nursings, of too rich diet, too little exercise, and that substitute feeding only checks the yield of milk all the more. They should be taught to cut down night feedings as early as possible for the welfare of themselves and the child, the effect on the nursling of the return of menstruation and many such details. If mothers knew, as physicians know, that much of the degeneration found in large cities is due to lack of development from mal-nutrition, they would resolve to give their offspring a fair chance in the battle of life by giving them their natural food when infants. There is still too great a failure in maternal nursing and an unwarranted frequency in early weaning, if we judge from histories of cases coming under our care. Our profession is, no doubt, somewhat responsible for this, for until lately, too little attention has been paid to the problem of enabling the mother to nurse her infant. The usual history of such cases is that the infant cries, supposedly from hunger, that its stools are misinterpreted as showing either a lack or disagreement of the mother's milk, and without regulation of faulty
nursing habits, without accurate observation of the infant's weight, without proper attention to the mother's diet and health, the ready-made diet of others is accepted and the breast abandoned. That is, without fair trial, the infant is condemned and sentenced to bottle feeding. This is a common error, physicians frequently advise weaning without sufficient reasons.

Such authorities as Czerney, Keller and Finklestein (II) have emphasized the opinion that with rare exceptions every mother can nurse her child, if the technique is right, and that almost every mother's milk is suitable to her infant. This being the case, artificial feeding should not be the first but the last resort. The greatest calamity that can befall a young baby is to be deprived of the privilege of nursing at the mother's breast. The statistics of Munich and New York City are practically the same, that is, of the artificially fed babies eighty-five per cent. die, and of the breast fed fifteen per cent. die. Tyson says of one hundred and fifty thousand deaths in infants, seventy-five per cent. were among the artificially fed. Thus you see how necessary it is that our profession use every effort to combat ignorance and neglect and endeavor to have the mother nurse her own offspring.

Another very common error made by the physician is that of allowing a bottle to be given a newborn infant before the secretion of milk is well established. Congestion of the breast follows and the normal secretion is retarded. This is a very common cause of a mother's inability to nurse her baby. It is in the first few days of life, before the secretion of milk is well established, that this mistake is made. I have frequently seen infants weaned altogether and put upon artificial food at this period, from an apparent disagreement of the mother's milk, when the dyspepsia has been caused by the administration, at this early period, of an artificial food. This is the time when errors in milk dilutions, sugar solutions, and such are harmful. During the first few days of the puerperal period, termed by Prichard (III) the Colostrum period, the mammary secretion is exceedingly scanty, non-stimulating and non-coagulable, and yet adequately nutritious for the requirements of the nursling. It is a food which on theoretical grounds should be supplied to a small, sensitive, undeveloped digestive organ, such as the stomach is at the time of birth. It is often a week or ten days before the mammary secretion assumes the character of true milk. During this Colostrum period the stomach has been functionally
developing and acquiring tolerance to the presence of coagulable casein. The infant's stomach has been gradually learning to liquify or peptonize the clot soon after formation. Prichard, of London, is so impressed with the injuries which result from giving the new born infant varieties of food to which it is unaccustomed and in the digestion of which it has not been adequately trained, that he says, "I can conceive of no better food for the new born infant than the simple undiluted whey, prepared on the ordinary domestic plan from fresh milk and rennet, or more commonly, from separated milk. Such a food is non-stimulating, non-coagulable and adequately nutritious. Further, it may be the instrument of digestive education, by adding very slowly the food elements which develop the special digestive function of the stomach, that is, a coagulable proteid such as caseinogen, and an emulsified fat such as cream." He believes an infant should not be placed upon milk dilutions nor on the most approved per centage combinations, nor on a wet nurse in full lactation until it has served an appropriate apprenticeship on an artificial substitute for Colostrum such as described. A few supplementary feedings of this kind, well directed, during this period, will often aid the mother in nursing her infant, and if artificial feeding is inevitable, will prepare the child's stomach somewhat for the duties it has to perform. In artificial feeding mistakes as to quantity are common enough and will be referred to later, but in the breast-fed they are also equally common. It is a necessary provision of nature that there should be some sort of coordination between the supply on the part of the mother and the demand on the part of the infant. The strong, healthy infant, by reason of its active powers of suction, affords the proper stimulus for a parallel activity on the secreting gland, while the feeble nursling excites little reaction in the breast from which it draws its sustenance. The late Professor Budin proved this association over and over again. He found that while the weakly nursling was incapable of imparting a sufficient stimulus to keep the mammary gland in active secretion, a single wet nurse could successfully feed three or four infants by reason of their united efforts. To avoid error the physician must bear in mind, however, that nature is not always so kind and in a very considerable portion of cases there is no coordination between the supply and the demand. Sometimes there is too much milk, sometimes not enough. Apart from the physiological test, namely the progress of the infant,
and the examination and estimation of the excretions, the only accurate means of ascertaining whether an infant receives too much or too little milk, is to weigh it before and after feeding on accurate scales. In many cases the physician will find a child who has been losing, has not been getting sufficient nourishment, and may, by giving judicial assistance and encouragement to the mother, have the non-active breast secrete a good supply of milk, provided the infant can supply the necessary stimulus.

Errors will be avoided if the physician bears in mind that crying is not a reliable indication that the infant is not getting enough milk, and that occasional crying is the only form of physical exercise that the young infant can get; that green stools do not necessarily indicate that the infant is not able to digest the natural milk. If the weight is stationary and stools scanty, suitable supplementary feeding may help until the breast milk can be improved; and he should remember that early and sudden weaning should never be advised for an infant of stationary weight until every effort has been made to improve the conditions, as the probabilities are in favor of successful continuation of lactation. The following case will illustrate how mistaken in this connection are made. Baby H., born February 1st, last, was fed exclusively on the breast for six weeks. The child cried a great deal from colic, stools were green and undigested, the weight remained stationary, the mother explained to the family physician that she did not have sufficient milk and that her breast milk did not agree with the baby. The physician, after trying infant correctives and infant anodynes, ordered it removed from the breast and placed upon artificial food. The gastro-intestinal symptoms were somewhat improved, but at the end of the tenth week the baby was still not gaining. I saw it at this time in consultation with the family physician, and to our surprise we learned the mother had not followed the advice of the attending physician, either in regard to the preparation of the food, or the amount allowed at each feeding, and had surreptitiously continued to nurse it at night. It was further learned that these nursings satisfied the baby. We decided upon the suspension of artificial feeding and improvement began almost immediately. The baby now is nine months old, is well nourished and healthy, and is still on the breast alone. If the physician had been more careful about the details of nursing, in this case, and had had the baby weighed before and after nursing, he would have learned that the baby was getting more
than an adequate amount of breast milk, and weaning would probably not have been advised. Many of you can recall cases practically weaned under similar circumstances, placed back upon the breast, and with patience, perservance and confidence, on the part of the mother, seen them eventually flourish on breast feeding alone. Such cases are of peculiar interest, because they show that with perseverance, an apparently inactive breast may ultimately secrete a good supply of milk. When supplementary feeding from the bottle is necessiated, owing to a deficient supply of breast milk, weighing is of great importance in guiding us as to the quantity of food that should be given artificially, but the normal allowance should be reached only gradually by small additions for fear of disturbing the digestive and metabolic processes of the infant.

While emphasizing the importance of breast feeding and the benefits derived from supplemental feeding, the physician must remember that mother’s milk is not always an infallible success in Infant Feeding, trouble frequently arising from variations in the proportions of fat and casein. Such cases, in which the mother’s milk does not agree, should be recognized early, before serious damage has been done, and resort made to careful artificial feeding or to wet nursing.

A word here in regard to wet nursing. The physician who would avoid error in the problem of wet nursing must use all his powers as a diplomat. In the majority of instances it is not advisable to allow the child to be nursed to have the total supply of milk of the wet nurse, as it would tend to favor catastrophe from over-feeding. Care should be taken not to allow the breasts of the wet nurse to retrogress, because the weak infant is not strong enough to offer them the proper stimulation. As the change of surroundings, diet, etc., frequently cause a disturbance in the flow of milk, a wet nurse should be given a fair trial for some days before passing judgment as to her fitness as a wet nurse. There is nothing more striking than the effect of wet nursing on an infant that is steadily emaciating on artificial foods. If physicians would have recourse to this method of feeding more frequently and earlier, in many of their difficult cases, valuable help would be obtained.

Too prolonged nursing is a common mistake. There is a general agreement that after the ninth month a baby thrives better if artificially fed. Almost without exception, a baby fed a longer time on the breast shows signs of rickets or some more
grave nutritional disturbance. The physician must use reason as to the length of lactation period, since weaning in the hot months, or just previous to these, is apt to be followed by serious consequences. It is never of advantage to the child to nurse it longer than one year.

Irregularity of feeding is another frequent error; the infant should have his feedings at regular periods each day. The lack of observance of this rule is often the cause of loss of appetite, and indigestion. On the other hand, forcing the child to take food should be avoided. If the infant has no appetite the cause should be sought. The intervals between feeding are a matter of importance. I am convinced that failure in artificial feeding may often be attributed to following the traditional frequency of feeding. Intervals of less than three hours do not permit the stomach to empty itself thoroughly; three and one-half to four-hour intervals are preferable. Another mistake, which might be mentioned, is that of feeding too large a bulk of fluid. We see many children who are fed to freely from the breast and who obtain relief, immediately after nursing, by vomiting or regurgitation, and which is easily remedied by reducing the quantity allowed in shortening the time at the breast, or by merely lengthening the interval between nursings. But this over-feeding is more commonly found in the artificially fed. It is not unusual to find babies, at the age of three months, being fed six ounces at a feeding. Sooner or later these infants cease to gain in weight, and suffer with indigestion, vomiting being a common symptom, and unless the bulk is reduced and the corresponding correction of the composition of the food is made, these children become marasmic. Such injuries to the infant’s stomach, in many instances, require weeks of careful feeding to rectify. If the proper bulk of food, for the age, has been reached and the child seems hungry, an increase in the strength of the food should be made and not the size of the feeding. By increasing gradually, the proportions of the milk and cream, it is often possible to satisfy the appetite of the infant, and by so doing, avoid troublesome digestive disturbances. Finkelstein has demonstrated a most important characteristic of the normal infant, that is, that each infant has its own limit of nutritional tolerance, and though the amount and composition of the food may vary within wide boundaries, in the normal infant, still it must be fed within these limits. If nutritional disturbances are to be avoided, much unnecessary trouble would be
These sugars saved if it were always remembered that as the strength and quality of the feeding mixture are increased the interval between the feeding should be lengthened to allow of complete digestion. If the profession could have this impressed upon them they would have better success in Infant Feeding. I am constantly seeing cases, both in and out of the hospital, that are not making gains on suitable formula because they are being over-fed in quantity or their meals are too close together and their digestive powers are being overtaxed. Serious results are common also from errors in the quality of the food. The qualitative make-up of the food produces both digestive and nutritional symptoms. (The Food Injuries of Czerney, Keller and Finklestein.) These are old familiar fat, proteid and sugar dyspepsias of Roach and Holt. The effects of the individual food elements in excess are as follows: Sugars cause toxic symptoms, rise of temperature and diarrhea. Fats cause toxic symptoms, obstipation, and usually fat stools. Proteins cause no corresponding findings and according to Czerney and others they are considered absolutely innocent. If the disturbance is attributable to excess of fat in the food, such cases respond to poor fat and carbohydrate rich food. If the dyspepsia be due to excessive carbohydrates it will be relieved by lowering this constituent of the food. This explains the success of the fat free, and sugar poor buttermilk. Finklestein is of the opinion that the sugar is a much commoner source of indigestion in infants than the fat or casein, and has devised and recommends, in many of these cases, Eiweissmilch, which contains only 1.5 per cent. of sugar. The early and prompt recognition of fat indigestion is absolutely necessary for successful infant feeding, for there is no food that will so completely check the growth and development of an infant as fat when it is undigested. Imperfect digestion of fat is shown by varied and lessened appetite, gassy condition of stomach and bowels, disturbed sleep, tendency to vomit half an hour after feeding, offensive rancid and greasy stools, and by failure of the infant to grow. To avoid error the physician should have clear ideas of this condition and have the courage of his convictions to overcome the strong desire of mothers and nurses to feed cream too freely to their babies. Just why and how fat and sugar bring about nutritional disturbances is at the present time the subject of much investigation, and there is much controversy to which elements of the food is directly to blame. These particular constituents
of the food, however, should be so modified as to fit the food to the peculiar requirements of the individual infant.

Nature does nothing by leaps, and he will be most successful in Infant Feeding who makes every change, whether of strength, amount, or interval, gradually. The physician of today should be quite familiar with the percentage system of feeding, but having this knowledge, he ought never to lose sight of the fact that no milk can be made perfectly adaptable to the infant. The milk provided by nature for the infant, and suited to its functional power, is in the mother's breast only, and those unfortunate infants dependent upon others than mother's milk for nourishment, should, when intrusted to the physician's care, receive his closest, and most careful, individual attention. Healthy infants who are deprived of breast milk should be fed simple milk dilutions with addition of a carbohydrate in sufficient amount to bring the caloric value of the food to the required point, that is, about one hundred calories per kilogram of body weight in the early months of life, and eighty calories per kilogram in the later months. It must be understood that the calometric standard is not a method of feeding, but a check on all methods. It is a method of determining the amount of food a child receives in twenty-four hours, and of determining whether the child is receiving the proper amount or not for the process of growth and development. While it is of great value to feed the normal baby according to the principles of the percentage method, and of still greater value to feed them according to the caloric value of the food, it is an error to attempt to persist in feeding that which the baby does not want and cannot digest, because it is mathematically correct. A baby should be studied clinically and physiologically, and the food adjusted to meet the powers of its digestion, and to aid in the development of its digestive tract. Many errors of over and under-feeding may be avoided in the sick and atrophic, by the physician studying the relation between the weight chart, clinical chart, and the feeding chart; the weight chart always urging for more food, while the clinical chart acts to hold it in check. The intelligent interpretation of these indicates the sensible way to feed the sick and mal-nourished. The percentage system of feeding has done much to reduce the food injuries inflicted on the infant organism, still many of these injuries are so long deferred, and so remote in their consequences that their connection with initial mistakes is exceedingly likely to escape.
notice. Unless these systems of feeding are thoroughly familiar to the physician, I am convinced fewer errors will be made and that better results will, in the majority of instances be obtained by simple dilutions of whole milk with the addition of a carbohydrate, perferably malt sugar, in feeding the normal baby.

If there were such an entity as an average baby, the solution would be much easier and would lie in the averaging of the mother’s milk and making modifications paralleling this and in giving it to one and all babies. This is just what many physicians of the present age are doing, feeding infants as though baby and milk were settled averages. Let me say there should be no such term as an average baby in artificial feeding. Each child is a law unto itself in capacity, digestive power, and assimilative process, and should be treated accordingly if we would avoid disasters.

I believe the percentage system and the calorimetric standard, not being well understood by the general practitioner, is a potent factor in driving many of them to the use of patent foods. The use of proprietary foods should, on the whole, be condemned, as they are a prolific source of nutritional disturbance. One must remember that the problem of feeding is not only to save the life during infancy, but to adopt those means which shall tend to healthy growth and normal development. The child must be fed so as to avoid, not only the immediate danger of acute indigestion, diarrhea and so forth, but the more remote ones, chronic indigestion, rickets, scurvy, and marasmus. As none of these foods contain a sufficient amount of nutrient elements to supply the needs of the baby for life and growth for any length of time, their use should be limited indeed. It is no uncommon thing to find the delicate, wasted infant being fed one proprietary food after another, according to the directions on the package, getting quantities far beyond their capacity and ability to digest. Many of these can be recommended, however, with benefit if the physician knows their composition, and uses them with a definite objection in view provided they are used with milk.

Starch has long been known to be a common cause of infantile digestive troubles. It is used as a dilutent commonly in infancy in the form of barly water, rice water, or oat-meal water, and as clinical experience shows that starch digestion remains feeble in most infants, for at least six months after
birth, its use should be somewhat restricted, especially since the nutritive value of any of the cereal decoctions is so small as to be hardly worth considering.

A great deal of ill-success arises from a failure to discriminate between the normal infant and the sick infant. Moderate errors in feeding do not disturb the normal infant, while slight errors will cause disturbance in the sick. The sum total of digestive disorders would be greatly lessened if the physician would advise reduction of the food to one-half upon the first appearance of fever or other disturbance, and gradually increase it again as these improve. To avoid errors in the feeding of the sick infant the first essential, to the conscientious physician, is the diagnosis, what is causing the trouble.

He must also bear in mind that the individual patient is to be fed, and that no matter to what class of cases the baby belongs its peculiar reaction to foods, its susceptibilities, and to a degree, its appetite must be considered. If the case is a febrile one it is usually of short duration, but during this period the powers of digestion are diminished, and the rule to follow is to give less food and more water. Experiments have proven that the diet of actutely sick children should consist chiefly of carbohydrates, that fat should be given sparingly, and that proteids should be reduced. As the fertile condition subsides the food should be increased until the proper equivalent of a well-blanced food is attained.

In hot weather the physician frequently encounters disasters from feeding because he fails to keep constantly before him the danger which may result from over-feeding, improper food, impure food, and especially impure milk. The effect of excessive heat, on the infant, is the lowering of its general vitality and resistance, and makes the child more susceptible to infections and gastro-intestinal diseases. The treatment and care of infants during the summer should not only be confined to the ordinary medication of definite diseases, but should be directed toward the offset of the effect of excessive heat by advising lighter clothing, bathing several times a day, discarding the flannel bands, and abundance of fresh air and so forth; by giving less concentrated food than in cool weather, and in smaller quantities. Plenty of water, however, is always desirable.

Vomiting in an infant nearly always is due to an error in diet. It represents a food injury, and unless recognized as such, the habit may be acquired, and no matter what the nature of
the food, it is rejected by the stomach. This habit may be broken by correcting the diet, temporary suspension of food or by dulling the center of stimuli. Again diarrhea should be recognized as most frequently caused by error in feeding, for it usually represents a protective reaction on the part of the organism to relieve a wounded organ, namely, the intestines, of material which has inflicted the damage. This condition is often treated the reverse of scientific by mixtures of chalk, bismuth, and opium, in place of the suspension of all foods for twenty-four hours or more and by irritation of the bowels. Again chronic constipation in the infant, which is quite frequently due to a too high percentage of fat in the food, is often combated by increasing the percentage of fat in the infant’s formula, thereby aggravating the condition. Holt was the first to point out that any undue increase in the percentage of fat was calculated to produce symptoms of fat dyspepsia. (The Fat Injuries of Czerney.) The treatment of this condition should be the correction of the cause by the reduction of the fat in the infant’s diet, the giving of fruit juices, and in some obstinate cases, the administration of petroleum emulsion which acts purely in a mechanical manner, lubricates the bowels, softens the motions, cannot be absorbed and never produces any fat injuries or symptoms. Again, this condition may be caused by a deficiency of food. Infants are frequently treated for constipation by drugs when the sole cause of the condition is starvation.

I have occupied much of your time in analyzing a few of the common mistakes in Infant Feeding leaving untouched that great group of cases which are included under the terms Atrophy and Wasting. These cases represent, without a doubt, deferred food injuries, for under appropriate lines of treatment they often completely recover. Much of what this paper contains may have seemed too self-evident to warrant repetition, but if these much too common errors have been presented in such form as to lad to a more scrupulous avoidance of them its object will have been accomplished, and more success will attend our efforts in this most important branch of Pediatrics. Let me say in closing that the physician should be the one to correct these errors and to dispel the dense cloud of ignorance which so closely surrounds the laity in Infant Feeding.

I. Still—Common Disorders and Diseases of Children
II. Grulee—Infant Feeding, 1912.
A Case of Polymyositis with Multiple Lime Deposits in a Boy of Five Years, Dr. Sara Welt Kakels presented this patient. The boy was five years of age. His family history revealed neither lues or any hereditary nervous disposition and no one in the family had suffered from a disease similar to that of the boy. The parents had been married eight years and had one other child three and one-half years of age who was well. The patient was born at full term and the delivery was spontaneous. He had had ophthalmia neonatorum from which he recovered after a few weeks. He was breast fed until he was eight months of age and developed normally until the present illness began in April, 1911. At that time he became indisposed, lost his appetite, and had difficulty in walking; he could not climb stairs or move his legs. He walked on his toes. About three weeks after the onset of the prodromes an exanthema appeared which was taken to be scarlatina and which lasted about eight days. Then painful swellings appeared in the legs up to the knees, mainly over the calves and later the arms became involved, especially the left one. The face also became edematous and reddened, mainly in the palpebral region, so that the child could scarcely open his eyes. He could not move his extremities or raise his head. Both active and passive motion caused severe pain, especially in the joints and back. The sensorium remained free during his entire sickness which rendered him entirely helpless for two weeks and confined him to bed for two months. The eruption was followed by a distinct desquamation; there was no exudate on the tonsils and the urine was free from albumen. As the boy did not improve various physicians were consulted and among the diagnoses made were encephalitis, spastic paralysis, muscular dystrophy, poliomyelitis anterior, acute articular rheumatism, toxic arthritis, and spondylitis. One orthopedist advised tenotomy of both tendones Achilles, as both feet were in the pes equinus position. The child's father refused and further treatment secured the services of
a masseur. After about thirty treatments the boy began to improve and the swelling of the extremities slowly receded. The swelling and redness of the eyelids persisted. During this period the boy suffered repeatedly from an itching eruption like urticaria. Toward the end of 1911 the boy had a light attack of measles but his improvement continued until January, 1912, when he again complained of pain and the former condition recurred. The general condition of the boy remained quite satisfactory. In September 1912 he was brought to the children’s department of Mount Sinai Hospital.

His present condition shows a boy rather poorly nourished and with a rectal temperature always slightly elevated. He is of good intellect and rather bright. The face appeared bloated and tense; there was slight edema of the cheeks and eye lids; sometimes he could scarcely open his eyes. The pupils were equal and reacted to light; the fundi were normal. The buccal and pharyngeal mucosa was rendered. The anterior and posterior cervical glands were slightly enlarged; the axillary, cubital, and inguinal glands were slightly enlarged. The viscera of the thorax and abdomen were normal; the spleen was somewhat enlarged, its anterior margin being palpable. There was a urticaria-like eruption on the skin of the trunk and lower extremities which itched somewhat. Similar eruptions repeatedly appeared and after short duration disappeared. The skeletal muscles were thin and flabby, especially on the left arm. There was motion in all joints excepting those of the hands, mainly the left one. The motion of the ankle joint was slightly limited. The superficial and deep reflexes were normal; tendon reflexes of both upper extremities were slightly diminished. There were no facial phenomena. Electrical irritability was normal and also the sphincters. The appearance of the left hand was very striking, being considerably swollen, painful on pressure, edematous, and purplish in color. There was no pitting. The infiltration extended beyond the phalanx of the middle finger. A similar but less marked condition involved the right hand. In the right gluteal region three indurations the size of a barleycorn could be felt. They were not painful on pressure. In the left gluteal region was an induration somewhat larger and flatter but not painful. Von Pirquet and Wassermann tests were negative. Microscopic and chemical examination of an excised piece of skin showed deposits of lime in the sub cutaneous tissues.
A Case of Transfusion for Persistent Hemorrhage Following Sepis. Dr. A. L. Soresi, presented this child whom he had transfused last November. At that time pus was running from both ears and the fingers and eyelids were purulent. The gums were soft and purulent and the child was suffering from empyema. On account of the poor condition of the child and a persistent cough, the result of the empyema and a previous pertussis, a general anesthetic could not be given. An incision was made under local anesthesia, cocaine 1 to 500. Pus was evacuated from the left pleural cavity and after forty-eight hours the wound was still bleeding. The bleeding from the gums had increased and the child was in a desperate condition. The hemoglobin had gone down to 25 per cent. Transfusion was performed, a maternal aunt being the donor. The external jugular vein was used as could be seen by the little scar in the neck of the patient. The transfusion was stopped after six minutes, when the hemoglobin reached 70 per cent. The child began to improve, the bleeding stopped, and recovery followed. It was Dr. Soresi's opinion that the life of the patient had been saved by the prompt employment of direct transfusion.

Remarks on the Etiology and Pathology of Hemorrhagic Diseases in the New Born. Dr. Oscar M. Schloss, presented this paper in which he said that it as rather disappointing considering the comparative frequency of hemorrhage in the new born and the number of years that these cases had been recognized that so little was known as to the actual cause. Formerly hemophili was considered a frequent cause of hemorrhage in the new born but further study had shown that most cases had no relation to true hemophilia. In a small group of cases hemophilia unquestionably played an important part. These were the cases which had a distinct family history and in which if recovery took place the individual remained a bleeder during the remainder of his life. There was no doubt but that bacterial infection played an important factor as a cause of hemorrhage in the new born. Both clinical evidence and post mortem investigation supported this view. In a number of epidemics in institutions there was apparently a direct relation between the number of cases of puerperal infection and of hemorrhage in the new born. According to Finkelstein, the cases of hemorrhage in the new born due to bacterial infection were divided into two groups. In the first
group the pyogenic organisms were considered the causative agent, and in some of these cases there was definite evidence of pus formation in connection with localized suppuration while in others the pyogenic organism, whether alone or in connection with saprophytes such as the bacillus pyocanus or some other member of the protean group, was the supposed cause of the hemorrhage.

In the second group of cases special hemorrhage producing organisms were considered the causative agent. In most instances these organisms caused hemorrhagic forms of septicemia in animals. The results of bacteriological studies had been very inconstant and many different organisms had been isolated from the bodies of infants who had suffered from hemorrhage during life. It had been suggested that finding these organisms post mortem might mean that their presence was due to post mortem invasion. All the evidence seemed to point to the fact that syphilis was an important factor in the etiology of hemorrhage in the new born. Congenital syphilis seemed to cause definite vascular changes and was frequently associated with hemorrhage in the new born, and in many cases it was the only determinable factor. Certain local diseases seemed to be concerned with the production of hemorrhage in the new born among them gastric and duodenal ulcers. Chloroform poisoning had also been suggested by some as a cause but the evidence on this point was very indefinite. The final solution of this question must be left to further study and investigation. It seemed only rational to believe that the ultimate cause of the bleeding was some pathological condition of the blood vessels. The blood had been examined in only a few cases and from these examinations the results had been by no means constant. In two cases in which the blood was examined by Dr. Comiskey and myself there was a great diminution or absence of thrombin. The same condition of the blood was found by Whipple in a fatal case of hemorrhage in a new born infant. In another case blood coagulation was delayed and the softness of the clot was the striking feature. In this case there was a deficiency of fibrogen. In a second group of cases the blood coagulated in the normal time but the clotting was incomplete. In still a third group the clotting took place in the normal time and was apparently complete but the hemorrhage was probably due to some vascular lesion localized in the areas from which the bleeding occurred. The fact that there were
a number of phases of blood coagulation which were imperfectly understood, still further complicated this subject. Without going into a discussion of the question of blood coagulation it might be stated that pathological hemorrhage might be due to deficiency, absence, or interference with the action of any of the substances entering into blood coagulation.

It as desirable that tuba vitam blood cultures should be made in these cases of hemorrhage in the new born for it was only by this means that the true role of bacterial infection could be determined. The absence of clinical evidence of septic infection was not of sufficient value to exclude a bacterial cause as was illustrated by two cases observed by Dr. Comiskey. In the first of these cases the infant began to bleed from the navel on the day after birth and died on the third day. The temperature was never above normal, being subnormal most of the time and there was no physical evidence of sepsis. At autopsy a hemorrhagic endocarditis was found and myocardial and intestinal hemorrhage. In the second case the infant began to bleed from the cord on the fourth day and child died the following day. The fatal outcome was not due to loss of blood. Here autopsy also showed hemorrhagic endocarditis and congenital syphilis and a capsulated diplococcus was cultivated from the heart's blood. At no time did the infant show any signs of fever or sepsis. In conclusion it might be said that these hemorrhages were due to different pathological conditions and since the investigation of the blood failed to show any uniform change the conclusion was forced upon one that the hemorrhage was simply a symptom to which there existed a predisposition during the first ten days of life.

Hemorrhagic Diseases in Children: Etiology, Pathology and Treatment. Dr. A. L. Soresi, stated that all the hemorrhagic diseases of the new born should be grouped under the name of hemorrhagic diathesis, because their pathology and etiology was little known and they seemed to be symptoms of different pathological conditions rather than distinct pathological entities. Were the causes underlying these conditions to be found in blood vessels or both? It seemed reasonable to believe that what appeared in the blood and in the blood vessels was not primary but the result of faulty general metabolism. In hemorrhagic diatheses the blood oozed out of the capillaries for causes which in normal individuals would not occasion any trouble. In normal individuals the blood oozed out of the tis-
sues when they were cut or traumatized, or the atmospheric pressure was raised or lowered beyond certain limits. In hemorrhagic diseases the blood did not coagulate immediately as in the normal conditions, or did not coagulate at all, and this distinguished the hemorrhagic conditions from hemorrhage where the blood had a more marked tendency to coagulate the more severe the hemorrhage was. Of all the agents which were thought to be the cause of hemorrhagic disease, such as, syphilis, rickets, anemia, infectious diseases, faulty intestinal and hepatic function, improper food, etc., it might be said that each one could be the known cause in a single case, but none of them individually or all together could explain the majority of cases of hemorrhagic disease. The theory that hemorrhagic diseases depend on an abnormality of the capillaries had a certain anatomical basis, although there was no evidence to prove it. It might be that the capillaries had lost their tonicity. In certain cases the cause of the lack of coagulation was traced to well known factors, but in the majority of cases this could not be done.

Whatever the elements might be which prevented or retarded coagulation it was evident that they were the result of faulty metabolism. The fact that hemorrhagic diseases were more prevalent in children than in adults seemed to show that the different organs of the body had not yet reached a harmonious co-operation among themselves. The pathology of these diseases would be clear if they were studied together with some conditions disturbing the general metabolism of adults, such as pernicious anemia, diseases of the liver, infectious diseases, chloroform poisoning, etc., in which there was also a tendency to spontaneous hemorrhage and lack of coagulability of the blood. Prophylaxis could do some good in hemophilia and scorbutus. Salts of calcium, stiptics, and gelatine had been of very little benefit. In scorbutus and purpura change of diet and fruit juices had been found very valuable. The best and only really effectual treatment was what could be called the physiological treatment. This consisted in introducing blood serum or full blood into the system of the patient whose blood was lacking in the normal principles that favored coagulation. The physiological treatment must be considered under two different views. The one where the patient was seen early and the only indication was to stop the bleeding, and the other when the bleeding was very persistent and the patient had lost a great amount of
blood. In the first instance horse serum and, when available, human blood serum should be employed as soon as possible. In the second instance direct transfusion should be resorted to. The ejection of serum introduced thrombin into the system, which would establish the normal balance of antithrombin and thrombin or prothrombin, so that the circulating blood would be able to react normally. In some cases of hemophilia bleeding had been stopped by applying a piece of gauze soaked with blood obtained from another person. It was evident that the injection of serum could only stop further bleeding, but could not supply the morphological elements of the blood through hemorrhage. As they did not know that elements favoring coagulation were present in normal blood it was logical to conclude that the introduction of the full blood into the patient's system was the most rational treatment. Only one consideration could favor the use of serum or defibrinated blood and that was if it could be proved that in extracting the serum new elements favoring coagulation were formed or the ones existing in the blood made more active. The strongest argument in favor of direct transfusion was that many cases had been benefited or cured by its use, which had received previously all other treatments, while no case where transfusion had failed had been cured by other means. This assertion was based on 31 cases of hemorrhage in the new born, of which 28 were cured and 3 died; on 23 cases of hemophilia of which 21 were cured and 2 died; on 6 cases of scurbutus of which 3 were cured and 3 died; on 9 cases of purpura, of which 8 died and only one was cured. It could be said that direct transfusion when properly performed was a specific remedy for hemorrhagic diseases with the exception of purpura. While direct transfusion would be the ideal method, the idea that it was difficult of execution had prevented it from becoming more generally applied. Transfusion should not be resorted to too late, when the patient was practically dead, and its technique must be perfect. Care must be taken not to injure the intima of the blood vessels and to this end the author's instrument was presented. It was composed of two little tubes crowned at one end with four hooks and held together by a little bar and a screw. The blood vessels were carefully isolated, one of the tubes was passed under the blood vessels of the recipient and cuffed over the hooks; the same thing was done with the blood vessel of the donor. Both blood vessels were cut close to the edge of the cannula, and put to-
The Treatment of Hemorrhagic Conditions By the Injection of Human Serum. Dr. Robert Herbert Dennett said that he regretted that Dr. John Edgar Welch could not be present to read his paper, but he would mention briefly the results that they had obtained from the use of human blood serum.

The first child which he had seen with Dr. Welch had a hidden meningeal hemorrhage and was in extremely bad shape, being practically moribund. The infant was six days old and the hemorrhage had been going on for three days. Inside of six or eight hours after the injection of human blood serum, the entire condition changed just as had been described as occurring after direct transfusion. Shortly after the second injection the child began to nurse again. Lumbar puncture had been done to confine the diagnosis of hemorrhage and pure blood was withdrawn from the spinal canal. On the day following the first injection of serum another lumbar puncture showed that no further hemorrhage was taking place. Dr. Bennett said he wished to mention this case because it had been said that desperate cases of hemorrhage should be transfused. Even, if, as was claimed, all serum did was to stop the hemorrhage, it was remarkable how quickly infants seemed to be able to add to their blood supply. Dr. Welch called special attention to the use of the serum after the hemorrhage had ceased. The more experience they had with the hemorrhage the more they favored its use for at least four or five days after the cessation of the hemorrhage. In one case which he had seen in consultation there was a visible hemorrhage which was apparently uncontrollable; the serum was employed and after two days they thought the hemorrhage had ceased and the use of the serum was discontinued. On the fourth day there was a recurrence of the hemorrhage which was very severe and the child died in consequence.
Had they continued the use of the serum long enough the child might have lived.

Of course neither the use of serum nor direct transfusion would cure syphilis or septic infection, nor could they expect to cure ulcers of the the gastrointestinal tract by this means. Until these conditions were better classified they must use serum or transfusion in all cases that came along.

Dr. Dennett expressed the fear the transfusion was not so easily done as Dr. Soresi had intimated although it was probably quite easy for him as he was so familiar with the procedure.

**Morbic Hemorrhagic Conditions in Children.** Dr. Leo Jon Joseph Commiskey recalled that whole blood was first used as a means of treatment of hemorrhage in the new born by Dr. Schloss in April, 1910, and that since that time 2 such cases and two cases of hemorrhage in older children had been treated by this method. Of these twenty-one cases, fifteen recovered and six died. Both instances of hemorrhage in older children, one following the extraction of a tooth, and the other in a child suffering from purpura, recovered. These statistics included all cases and all types of bleeding and comprised several fatal cases which were practically moribund at the time that treatment was instituted and also several infants that died not on account of the hemorrhage but because of an underlying septic condition. Such cases could with propriety be excluded from their statistics but an accurate estimate of any therapeutic measure could only be made by the results from all cases. The blood was usually taken from a vein in the forearm by an exploratory syringe and was injected immediately into the subcutaneous tissues of the infant’s back before the blood had had time to clot. The blood was usually obtained from one of the parents or relatives. The advantages of the whole blood were that it could be readily obtained and could be used immediately, and furthermore it required no complicated apparatus.

Since hemorrhage in the new born was due to different pathological conditions it seemed an advantage to inject the unchanged blood which contained all the elements essential for coagulation. The blood was quickly absorbed, usually in from two to four hours, and for some reason did not coagulate in the tissues. In no instance had there been any harmful influence perceptible. Injections of whole blood had been given to a number of extremely maraemic infants and the tem-
perature, pulse, respiration, weight, and condition of the urine accurately noted, and in no instance was there any deviation from the previous condition. On the surface the statistical results from this method were not striking but they had included fatal cases in which the method had not been given a fair trial. In a number of cases the hemorrhage had been of a very severe type and the results after the use of the whole blood were most convincing. There were certain cases of hemorrhage in the new born in which no therapeutic measure promised much hope. It seemed improbable that the injection of blood serum or even transfusion could influence the cases of generalized bacterial infection. There was a class of cases with profuse and rapidly fatal hemorrhage in which no treatment except immediate transfusion could offer any hope of success.

In some of the early cases they believed that the quantity of blood used too small and further experience seemed to show that the best results were obtained from 20 to 30 c. repeated every six or eight hours as long as the hemorrhage continued.

Successful results had been reported by Michael and Meyer. If it was true that human blood or its derivatives were of value in the treatment of hemorrhage it seemed only rational to assume that transfusion was the ideal method. The disadvantage, however, was that transfusion required a great degree of surgical skill which could not be obtained at all places and at all times. In the majority of these cases which were not of the rapidly fatal type it would seem preferable to use the whole blood as the initial treatment and continue its use if beneficial; if after a fair trial, however, the hemorrhage was not controlled an immediate resort to direct transfusion was indicated.

**DISCUSSION**

Dr. Henry M. Lyle, said that in all pathological hemorrhages the simpler method or serum and whole blood injections should be tried before resorting to transfusion. In severe acute hemorrhages saline infusion or blood transfusion were indicated.

If the value of a procedure was measured by its simplicity then blood transfusion was not an ideal method. Direct vessel suture required special training and skill. The cannula method of blood vessel anastomosis had placed at their disposal a much simpler means of transfusion. Dr. Lyle said that his experience had been limited to the cannulae of Grile and Elsberg and the
latter had given great satisfaction. The use of the fine paraffined tubes described by Carrell was undoubtedly the simplest method, and if clinical experience substantiated the promise of this procedure they would have a technique that could be performed by any physician.

It was a well established fact that severe acute cerebral anemia, though lasting only a short time, might do irreparable damage to the central nervous system. To prevent such a disaster prompt action was required and the ordinary transfusion was not practical under such circumstances. These patients might be resuscitated so that they performed their automatic function but the central nervous system never recovered from the cell destruction caused by the anemia, and the automaton died after a longer or shorter period; if he should recover it was with a permanently damaged central nervous system. This condition occurred most frequently in small children and ordinary transfusion was not applicable. A simpler method of blood transfusion might avert such a disaster. If blood could be withdrawn from a nearby donor and injected directly into the jugular vein much might be accomplished.

In Bier's method of blood injections for ununited fractures, 20 to 30 c.c. of blood was drawn from the patient's vein and injected between the bones. The medium to prevent clotting was warm, sterile salt solution. The objection to this method was the rapidity with which blood clotted and to overcome this Dr. Lyle drew warm sterile liquid albolene through the needle into a Record syringe and then expressed the contents so that only a very fine film of albolene remained. In this manner 30 to 60 c.c. of fluid blood could be withdrawn and kept in the syringe for a considerable time. It might be possible to use this technique for an emergency transfusion.

Dr. Lyle believed that a similar method of paraffined double needles had been used or at least suggested in the children's service at Bellevue Hospital.

Dr. Lyle also presented photomicrographs of the blood of patients who had been transfused for pernicious anemia and fifty per cent. of the leucocytes of the recipient contained red blood cells of the donor. The transfusion, though a success from the technical standpoint, failed, the patient dying twenty-four hours later. This was a note of warning in the treatment of pernicious anemia by transfusion.
Dr. George Dow Scott asked why they did not use the horse serum in cases of hemorrhagia the young serum obtained from a young animal.

Dr. Alfred Hess, said he had seen a number of these cases and he doubted whether blood cultures would in all cases give a proper estimate of the condition. The question arose as to whether the bacteria entered the blood current after severe hemorrhage. It had been shown that this might occur in animals and it was possible that this might take place in human beings.

Dr. Hess recalled a case of syphilis in which marked bleeding from the nose occurred and in which transfusion was unsuccessful although it caused an increase in the hemoglobin. The bleeding continued and the child died. The autopsy was entirely negative.

Recently he had met with a similar case and transfusion was not performed but horse serum injections were given. Both of these gave a positive Wassermann reaction. Dr. Hess believed that syphilis played a very important role in this condition and that in those cases in which it was the etiological factor, the injection of serum or transfusion of blood did not promise the same good results which they did in some other conditions characterized by severe bleeding.

Dr. Herman B. Sheffield asked Dr. Soresi if he considered transfusion as of value in cases of persistent hemorrhage following circumcision.

Dr. Milton Mabbott asked whether at the maternity hospitals the blood naturally lost during the third stage of labor was ever used in the treatment of children suffering from hemorrhagic disease. Could such blood which usually went to waste be utilized to furnish serum for these cases?

DISCUSSION ON PAPERS

Dr. Oscar M. Schloss in answer to what Dr. Hess said about his second case, said that was something they should always have in mind in taking blood cultures from autopsy material. This case, however, was an antemortem invasion. There were distinct endocardial vegetations and as they all knew they were of bacterial origin. Again an organism had been obtained which was capable of reproducing the condition.
Dr. L. E. La Fetra had asked him to mention two cases that he had had in his service at Bellevue Hospital and which he was unable to report in person.

Case 1. This was an infant one and a half days old, that bled from the intestines and who also vomited small quantities of blood. When brought to the hospital the infant was cold, greatly prostrated, with a rapid pulse which was barely palpable. The respirations were rapid and the infant did not respond at all when examined. There was oozing of dark blood from the anus and this blood did not coagulate. Thirty c.c. of whole blood from a normal adult in and of the family were administered. The next day the infant was jaundiced but there appeared no free blood in the stools and no blood was vomited. The stools were slightly tarry. Forty c.c. of placenta blood serum were then given and three weeks later 20 c.c. of the mother's blood. From that time no more blood appeared and the infant made a good recovery. The interest in this case pertained to the stools. Immediately after 30 c.c. of whole blood were given there was an improvement.

Case 2. This patient was a boy, seven years old, with purpura hemorrhagica, blood appearing not only in the skin but from the intestines as well. Human blood serum injections were given but with only slight improvement. Arm to arm transfusion was done and the patient was apparently cured temporarily. In a few weeks the bleeding returned and the patient was then treated by injections of whole blood in large quantities. The child improved, and the hemorrhages disappeared. After that there was another recurrence of the bleeding and this was treated in a similar manner and the condition again cleared up; there had been no recurrence.

Dr. A. L. Soresi said he did not wish to be understood as objecting to the use of serum in these hemorrhagic conditions, but only wished to point out its limitations and inconveniences. The fact that in certain cases it had to be used for days and as much as 500 c.c. administered showed that it was inferior to direct transfusion which was done only once, and further, in order to produce 500 c.c. of serum it required 800 c.c. of whole blood; this amount would be much more effective if used by direct transfusion where at times only a few centimeters were required.

The injection of whole blood was by no means a new procedure having been employed by surgeons before the era of asep-
sis. It had been completely abandoned because the elements of the blood were liable to be injured and when injected had to be absorbed. This meant that having been injured they were unable to take up the work of general metabolism and had to be eliminated, while when directly transfused the elements of the blood were intended to continue in the system of the recipient the function they were fulfilling in that of the donor.

Dr. Soresi referred to a case reported by Drs. Cooley and Waughan in which the median cubital vein was used and transfusion could not be accomplished so they injected blood very successfully with a hypodermic syringe and thought this method simpler than transfusion. He mentioned this case merely to show another failure in attempting to use the veins of the leg. Drs. Cooley and Waughan, as many speakers of the evening, seemed to believe that transfusion was not an easy procedure, but he wished to reaffirm that it was a simple procedure especially with the instrument just described and by using the external jugular vein.

In regard to the little gold tubes used by Tuffier of Paris, it might be recalled that Tuffier himself recommended the operator to have ready some other cannula, as the blood was liable to clot in its passage through his tubes and gave a description of the Elsberg cannula. The technique of Carrell deserved special mention as coming from such a great authority. It was not to be recommended in every case, but only when the external jugular vein was not available; he had himself employed it very satisfactorily with a vein of the left leg. In many cases it lessened the chances of recovery as in severe shock the blood accumulated in the abdominal vessels, leaving the superficial vessels, the heart, and the brain almost bloodless. What was requisite in these cases was to supply the heart with blood so that it could put in circulation the blood which had accumulated in the abdominal vessels. By transfusing the blood through the leg one only added to the abnormal congestion in the abdominal vessels and made the condition of the patient worse. In infants the veins of the leg could not be used because of their small size. Blood transfusion should not be resorted to in cases of pernicious anemia. With regard to the use of large quantities of horse serum, the inconveniences reported were that the serum caused hemolysis of the elements of the blood of the patient and it had therefore been abandoned in favor of human serum.

In regard to persistent bleeding after circumcision, Dr.
Soresi said he could recall only one case of that nature and in this instance the bleeding was stopped by transfusion. As to the danger of a too rapid flow of blood when using the external jugular vein, if the blood flowed too rapidly it was only necessary to make a gentle compression on the blood vessel of the donor to regulate the flow.

Dr. Lyle said he could not entirely agree with Dr. Soresi's conclusions as to the uselessness of Dr. Carrell's method. In operative work they were often face to face with conditions that would necessitate the use of a vein of the leg; he had just had such a case. Another point that must be taken into serious consideration was the liability of a weak anemic heart to acute dilatation; it seemed that if the transfusion was made into the external jugular vein there would be a slightly greater risk of acute dilatation and that this dilatation would appear rapidly. A sharp lookout must be kept for this complication and if it occurred prompt mechanical treatment must be instituted. Judiciously employed transfusion was valuable; injudiciously employed it would become discredited.

Dr. Roger Herbert Dennett said that if one used a large amount horse or other animal serum, he was likely to bring on "serum sickness" a condition which should be avoided. There were many instances of hemorrhages occurring in the new born as well as hemorrhages following circumcision, which could be helped by the use of the human blood serum as well as by transfusion.

The "whole blood" method he had adopted in the last two cases he had seen. Both children were in bad shape. It took about three or four hours for the blood to coagulate and the serum to separate. After collecting the blood in a flask, he used the needle of a syringe to remove 10 c.c. of blood itself which he used; this was done simply to save time while waiting for the blood to coagulate and enable him to get the serum. He did not believe, however, that the use of the serum offered any advantages over the use of the blood itself. After collecting four or five ounces from the vein of the donor, enough serum could be obtained to last for twenty-four to forty-eight hours. If they used the whole blood it would be necessary to tap the vein of the donor each time. Therefore he chose the whole blood for the first injection to be followed by the use of the serum.
Dietetic Treatment of Infantile Enteritis.—W. M. Salter, Repton, Alabama, gives a very good synopsis of our knowledge in this connection. He says that it was formerly believed that the cause of diarrheal disease was largely of mechanical or bacterial origin; but while they are factors, they are secondary, increasing the trouble long before the onset of diarrhea. Recent investigations by Finkelstein, Meyer and others (which was referred to in this department some months ago) have demonstrated that the main factor is the disturbance of balance between food elements taken into the alimentary tract and food requirements, not only in quantity, but more particularly in regard to the relationship of individual constituents.

Since examination of stools has become common practice, it is found that the proteids are less at fault than previously supposed; in fact, curds once thought to be simply undigested casein are found to be formed from substances in the lower bowels. It has been learned that sugars play a more prominent part, and that the salts must be reckoned with. Some investigators practically lay all or most of the blame on the last two, believing that casein is no more harmful than water; and they seem to have been amply sustained. Finkelstein claims to have produced diarrheal disorder by increasing the amounts of salts and sugars in the food of healthy infants, and, conversely, other children have been cured by a reduction of these constituents, being given casein diet almost wholly.

If the case, by analysis of the stool, shows itself to be plainly one of proteid incapacity, a reduction of that article is all that is necessary, provided lesions due to bacterial invasion have not been formed. In the later stages, the diet is rather varied, but agreeing in the main in certain important points, namely, reduction of sugars and fats, increase of casein and addition of lactic-acid bacteria.

The different foods used are: (1) Plain buttermilk; (2) artificial buttermilk made from the two strains of lactic-acid bacilli; (3) buttermilk cooked with flour and sugar; (4) casein-milk. The composition of plain, raw, fresh buttermilk, is proteid, 2.6; fat, 6; sugar, 3. The chief advantages claimed for it are that the fats and sugars are especially low, the casein is coagulated in the form of casein lactate, and it contains much lactic acid and lactic-cid bacteria. It may be used in either acute or chronic conditions and at all ages; and while it may cause vomiting at first, good results will follow if its use in persisted in a few days.

Artificial buttermilk is a good deal like the natural product, but its making can be more definitely controlled. Two varieties of lactic-acid bacteria are used—the bacillus acidophilons, found normally in the large intestine and therefore, employed when the lesions seem more marked in that region, and the bacillus Bulgarian when the lesion is in the small intestine. Buttermilk with sugar and flour added is frequently used. One quart of buttermilk is cooked for twenty minutes; suitable dilution with barley-water is made, and cane-sugar added to make up the cauoric value.

The value of this modified buttermilk seems to lie in the new fat percentage, the presence of lactic acid and a changed proteid, the bacteria being killed in the process of cooking.
A food exploited by Finkelstein is prepared as follows: Heat one quart of milk to 100 degrees F., add a half-ounce essence of pepsin; stir well; allow to stand at the same temperature a half hour, then filter. Force the curd several times through a fine sieve; add one pint of water and one pint of buttermilk. The composition of this mixture is: Proteid, 3 per cent.; fat, 2.5 per cent.; sugar, 1.5 per cent.; salts, 0.5 pear cent. One quart contains 370 calories. This food is used in all grades of intestinal disturbances, and the results have been very gratifying. It may be continued until the stools are normal and a gain in weight has begun, when return should be made to the regular milk, mixture.

Care must be had that none of these forms of feeding be continued too long, for rickets and scurvy may occur. The malted foods, especially the malted soups, are valuable at this time to more rapidly increase weight.—(Southern Medical Journal, January, 1913.)


Having considered somewhat at length the characteristics of the colon bacillus in its natural habitat, the question arose whether or not, if by changing the chemical reaction in the neighborhood of its artificial residence, we could produce a more rapid destruction of the organism. Following this idea up with a long series of experiments, both bacteriologic and on animals, it was found that liquor aluminum acetate in a dilution of two per cent. was an active germicide and antiseptic to the colon bacillus. This drug, having now been employed by the writer and by a number of the members of the American Urological Association, in a total of sixty-some-odd-cases, has given almost uniformly good results, so that at the present time I feel that it is not claiming too much to say that liquor aluminum acetate is the most active drug that we have in combating colon bacillus infections of the kidney pelvis and the urinary bladder.

The treatment of cystitis cases is carried out as in other forms of cystitis, namely, bladder irrigations, which can be done with any mild antiseptic solution, this to be followed by the instillation of liquor aluminum acetate. These irrigations, in conjunction with the other adjuncts to the treatment of cystitis, such as suppositories and sitz baths, will also give more prompt and more ultimate good results than any other treatment previously used.

Here, again, let me reiterate the fact that your patient is not cured until a carefully catheterized specimen of urine from the bladder gives negative results following the making of cultures.

31 North State street.

Diseases of the Respiratory System

Under the Charge of

W. C. HOLLOPETER, A.M., D.D.

Professor of Pediatrics, Medico-Chirurgical College, Philadelphia

Tuberculosis Among School Children.—In the campaign against tuberculosis no part is of greater importance than that of safeguarding school children against infection. Philip of Edinburg insists that if the tide of tuberculosis to be stemmed the child must be so reared that he will be immune to infection and that, in fact, the problem of the prevention of tuberculosis resolves itself into the problem of properly caring for the child. Nietner, General Secretary of the German Central Committee for the Prevention of Tuberculosis, recently delivered an address on tuberculosis in childhood at the Medical School of the Royal Hospital for Diseases of the Chest, London, in
which he dwelt upon the vital importance of school medical service, co-operation of teachers, care of teeth, and school hygiene in the waging of the campaign against the disease. He was especially emphatic as to the importance of the role of the school physician in such a campaign and was of the opinion that the office of school doctor should be a whole-time appointment, and only in exceptional cases a part-time duty, and the school medical service should be made general throughout a country. He believed that the colleges for teachers should also be included in the school medical service, as well as the trade schools. He pointed out that while it is the children belonging to the lowest classes who chiefly call for medical supervision in the elementary schools, in the higher schools it is the age of puberty which is chiefly associated with pathological phenomena, for which fact a too arduous program of school work at the period of active physical development must be held, a least, partially responsible. Nietner's paper was for the most part a description of the thorough way in which Germany is endeavoring to cope with tuberculosis in children, and as such is worthy of the attention of other nations who are not yet equipped for the fray so adequately as is Germany. There is no doubt that the problem of tuberculosis is above all the problem of tuberculosis in childhood.—Medical Record.

The Treatment of Bronchitis in Infancy and Childhood.—In his recently published work, G. A. Sutherland states that the patient should be confined to bed during the acute pyrexial stage, and should be given a restricted fluid diet. Warm demulcent drinks may be given freely. If the cough is dry and irritating steam inhalations may give great relief. If the secretion of mucus is free or over-abundant, the use of steam is contraindicated. The steaming should not be continuous, but should be employed for fifteen minutes at a time every hour or two. If there is dyspnea resulting from spasm of the bronchial tubes the application of hot fomentations to the back and front of the chest will often give relief. A dram of turpentine may be added to the fomentation. If plain fomentations are used they may be applied continuously for an hour and then intermitted. In many mild cases of bronchitis it will suffice to apply to the chest twice a day a stimulating liniment such as the following:

R  Liniment terbin. acet. (N. F.) 5\li
Liniment belladon.
Ole dulcis. 5\li

At the outset of the attack the bowels should be freely opened. Three grains of rhubarb powder and two grains each of gray powder and carbonate of magnesia may be given at night, and followed by a dram of sulphate of sodium or magnesia in the morning. A simple febrifuge mixture such as the following may be ordered:

R  Liq. ammon. acet.,  m\xxv.
Potass. citrat., grs v.
Tinct. auranti.,  m\xv.
Aq. camphor., ad 5\5

As regards cough mixture the author points out that most of these tend to upset the child's digestion. Prescription are common in which one finds drugs to increase expectoration, or to diminish expectoration, or to do both at the same time. In the early stage of bronchitis, when secretion is defective, and a harsh irritating cough may be associated with dry catarrh of the tubes, potassium iodide (gr. 1\II and carbonate of ammonium (gr. ss—j) may be added to the above mixture or given separately as long as necessary. Only when secretion is over-abundant is it necessary to interfere in order to diminish it. This may be effected by the following:
R Tinct. belladon. miv.
Ac. nitrohydrochlor dil. miiij.
Glycerin, mx.
Inf. gent. co., ad 3j
M et Sig. 3j every four or six hours.

When the patient is troubled with a persistent cough one should examine the nasopharynx and throat for signs of irritation which may be relieved by a nasal lotion or a simple throat lozenge. If the night's rest is disturbed five to ten drops of paregoric may be given occasionally for its relief. If special sedatives seem called for a convenient mode of administration to children is the use of pastilles, which may contain one-fiftieth of a grain of morphine or codeine. In the convalescent stage the patient should have a sufficient amount of animal fat. A combination of cod liver oil and hypophosphites gives good results in restoring a healthy condition of the bronchial tubes.—"The treatment of Disease in Children."

Streptococcus Infections Of The Throat.—By Richmond McKinney, A.M., M.D., Professor of Diseases of the Nose, Throat and Ear, University of Tennessee College of Medicine; Oto-Laryngologist to the City Hospital, in the Southern Medical Journal.

On two previous occasions I have contributed articles to the literature under the same title as that which I am presenting at this time, and each successive article necessarily was more or less an amplification of the previous contribution or contributions.*

It has long been recognized that the streptococcus under certain conditions becomes a morbid organism of more than ordinary virulence, and the question has presented itself as to why inflammation of the mucous membrane, due to this organism, should not invariably assume the malignant type that it does when it is evidenced in the form of erysipelas of the dermal portions of the body. Morphologically we have the same bacillus in various inflammations of the mucosa of the fæces that we find in erysipelas, yet it is only occasionally that inflammation of the throat assumes a type that causes us to be apprehensive of the outcome of the case. The fact that the association of the streptococcus with the bacillus of diphtheria tends to produce a graver condition is well recognized, and the destructive effect upon the kidneys and heart of the patient with this character of mixed infection usually is ascribed to the action of the streptococcus. Therefore, with this type of organism, which so readily may assume malignancy, an angina showing a predominance of streptococci on culture always should be regarded with apprehension, and most careful observed, with a view of anticipating complications, and of sustaining the involved organs should such occur. I believe that a large portion of the fatal cases of diphtheria seen nowadays, which fatalities do occur at times even where antitoxin is early used, are due to the pernicious action of the streptococcus associated in mixed infection. Certainly those cases of a pronounced type of mixed infection of this character run a malignant course. Yet on the other hand, it cannot be questioned that there is a type of streptococcus infection of the throat, without the association of the diphtheria bacillus, producing great prostration in the patient, and assuming occasionally a most malignant aspect.

Memphis Trust Building.

Treatment Of Sore Throats—General treatment must accompany local interference; the patient must be removed from insanitary surroundings; septic conditions of mouth, teeth, nose, air-sinusès, etc., should be removed; enlarged tonsils and adenoids if present may call for operation; local irritants, such as condiments, tobacco, alcohol, must be avoided. Misuse and overuse of the voice, also damp, foggy, and changeable climates, will aggravate a sore throat.

In anaemic patients the perchloride of iron is strongly recom-
mended. A 20 minim dose should be given in a tumbler of lemonade after each meal. A preliminary does of calomel or other purgative is often essential; the diet should be liberal and nutritious.

With regard to local treatment, the red relaxed throat should be painted with Mandl's fluid (pigmentum iodii comp., B.P.C.), gargled with sodium chloride or liquor thymolii comp., B.P.C., sprayed with menthol (nebulas mentohlis, B. P. C.), or the patient may use lozenges of potassium chlorate. In cases of superficial ulceration, antiseptic gargles and paints must be prescribed. Potassium permanganate 1:4000, or boric glycerin, B.P.C., diluted with glycerin 1:8; may be used. In the deeper types of ulceration, the surgeon will be well advised to paint the throat himself with mercuric chloride 1:1000 and allow the patient to gargle with carbolic acid 1:60, or resorcin 30 grains to the pint. He may also suggest one of the numerous varieties of tablets containing formalin. A paint of zinc chloride, 20 grains to the ounce of glycerin, may be ordered. In very severe cases cold compresses followed by hot, should be applied. The air the patient breathes should be moistened by steam medicated with creosote, myrrh, camphor and tincture benzoë comp. Peroxide of hydrogen (10 vols.) should be used in full strength for swabbing out the throat. Colloid mercury is also useful as a gargle as well as for internal use. Extensive sloughing, abscess formation, or edema of the glottis will call for surgical interference. Membranous or diphtheritic sore throat needs the administration of antitoxin. In the numerous varieties of toxic pharyngitis the poison must be looked for; occasionally it will be found to be lead, arsenic, etc.

In the granular or follicular sore throat of hypersensitive individuals, if it persists for more than twenty-four hours, the granules may be touched with the galvano-cautery, or with a bead of chromic acid. Astringent sprays of tannic acid, perchloride of iron, or pro-targol (2 per cent. in each case) are sometimes necessary. Syphilitic and tubercular ulcerations require special treatment. For the relief of actual soreness of the throat orthoform will be found more efficient than cocaine. P. A. Harry, M.D., (Prescriber.)

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Disorders of Metabolism, Growth and Nutrition

Under the Charge of

JESSE G. M. BULLOWA, A.B., M.D.

Lecturer on Clinical Medicine, New York Polyclinic Medical School and Hospital

The Conservation of Child Life.—During the year 1912 the general death rate of New York City was reduced from 15.12 per cent. to 14.11 per cent., or a little over one per cent. The rate for infants under one year was reduced from 111 to 105, or 6 per cent. In 1911 there were 15,053 deaths of babies under one year from all causes. In 1912 there were 14,289 similar deaths. The difference was 764. The number of births increased by 1,081. Had the deaths of babies increased in the same proportion there would have been 120 more baby funerals in 1912 instead of 764 less than in 1911, so that 884 infant lives were saved. These figures are by no means to be ascribed in great part to luck, weather conditions, etc., for the reduction in mortality has been chiefly in respect to those diarrheal, respiratory and contagious diseases that have been particularly campaigned against. But there is one potent factor which operates strongly in keeping up infant mortality which has not as yet been handled adequately, and that is ill health, in prospective mothers. An attempt must be made to control in some degree prenatal and congenital factors entering into infant mortality. New York Med. Jour.
The Eugenic Program.—Davenport, of the Carnegie Institution's Station for Experimental Evolution at Cold Spring Harbor, questions whether a system by which philanthropists drain effective persons of their income until they cannot afford to have children, in order to secure funds to be spent in relieving imbecile parents of any expense of parentage, is a good thing for America. That is exactly the system we are living under, though ordinarily we dodge the issue involved. It is a fact that New York State spends one-fifth of its income on the care of the unfortunates in institutions. To this must be added the cost of operating criminal courts and fire departments. Rosanoff calculates that nearly one-third of our population carries insane strains. The unfit are rapidly increasing, due to the co-operation of modern medicine and philanthropy, which keep alive this class of the population and also facilitate their reproduction. What, asks Davenport, is the alternative? We cannot let the weak die? We must shelter and feed the poor, give happiness to the feeble-minded, protect the insane, cure the tuberculous and the cancerous. We must keep them from reproducing their kind.

The Falling Birthrate.—Wolf states, Berliner Kilinsche Wochenschrift, December 2, and 9, 1912., that for the past year the diminution of the German birthrate has been a theme of earnest discussion. The same status in France was long ago attributed to the two child system, which in turn is being replaced by the one child system. The result is that deaths surely outnumber births. It is therefore evident that a three child system should rectify the present alarming conditions in that country. The alternative comprises the entrance into the country of alien blood. The relationship between falling birthrate and tendency to urban life is unmistakable, for it is in cities that the two and one child systems take their origin. In the midst of this state of affairs we find optimists who say that the decrease in births will run parallel to the decrease in deaths which is coming about as a result of improved education it merits the most active interests on the part of all patriots. The author cites a recent work on the subject which he has had published in which he seeks a solution of the problem in a rationalization of the sexual life. He shows that many factors are hostile to an increased birthrate, while but few favor it. Statistics show that compulsory education is a sure provocation of race suicide. The illiterates of Russia and Roumania and the Balkan States contribute most heavily to the population. In many instances the influence of religion is similarly apparent. Roman Catholicism, although it has lost this power in France, is less compatible with race suicide than Protestantism in many localities outside of France; while the Protestants have more children than the atheists. Under the last term the author appears to group the socialists. The claim that prosperity means fewer children is, according to the author, a transposition of cause and effect. Fewer children bring about prosperity. An alarming tendency has been noted of late to race suicide in the rural districts of Prussia. The law will seem to be assured that countries with heavy and rising birthrates must come to repeople in time those with falling birthrate. In closing the author states that the Jewish birthrate is also falling off in countries where the general birthrate declines.

Nature of Rickets.—Kassowitz, Med Rec. reiterates his well-known views, defending them from the attacks of others. Three postulates he thinks should be acceptable to all. First, pronounced rickets, affecting the cranial bones, is occasionally encountered in the healthiest looking and best fed babies. Second, in the warm summer months, in which digestive troubles flourish, the rickets curve sinks to its lowest point, likewise the so-called spasmophile phenomena. Conversely in the cold months in which children eat better and are less burdened with digestive troubles, all these conditions have their acme of incidence. Third, in tropical countries we see hardly any
rickets. Similar finds are obtained from a study of animal life. Having thus discredited the nutrition theory the author calls attention to the frequency of fetal rickets and of congenital evidences of the same. These cases may not as a class, be recognized outright as rickets but the softness of the cranial bones, the beading of the ribs, etc., seen perhaps as isolated lesions incline to rachitism. In the great majority of cases these are not recognized at first, and only in later years do the symptoms become prominent. This origin in utero does away completely with the alimentary theory of rickets, and we are therefore forced to substitute a respiratory theory. This the author does not elaborate, being content to connect rickets with "respiratory noxae."

**Infantile Mortality**—F. S. Hone, M. B., E. S. Semaphore, S. A. says the increase of population depends not on the birth rate or the death rate, but on the relation between the two, and man, who has almost the lowest birth rate of the whole animal kingdom is the only animal that is everywhere steadily increasing in numbers and extending his area of occupation over the whole of the globe, simply because with the lowest birth rate he combines the greatest gap between his death rate and his birth rate.

It is not so many years, either, since we were told that the cure of diarrhoeic mortality in cities was to provide sterilised or pasteurised milk for all by the establishment of depots for this purpose. Later, the attempt has been to prevent contamination reaching the milk, rather than to neutralise the contamination after it has gained entrance. Thus are avoided the ill-effects which attend exclusive use of sterilised milk, equally with any patent food.

One other forward step should be taken, and that is the Instruction of girls of 16 years or so in the feeding and care of babies. This has been tried tentatively in Hobart, Dr. Purdy tells me, with great success, so that there, as elsewhere where it has been initiated, it is being extended. This is quite a different matter from the teaching of sex physiology, about which we have been hearing so much lately. I believe I am speaking for the bulk of the medical profession when I deprecate the prominence given of late to this matter in certain quarters. Most of us would be glad to see physiology taught to the elder children at school, and still more to see instruction in hygiene, which is quite a different thing, and can be taught without much special physiology. But this examination of the teaching of sex physiology as the panacea for most of our present and future social ills is as astonishing as it is deplorable. The difficulties in the execution of the plan have been touched on by others, but the main objection is that the whole theory rests on a fundamental fallacy.

There are two appetites in man—one for food, the other for sex; the one is for the preservation of the individual and the other for the preservation of the race. The man who lives to eat rather than eats to live, slowly commits suicide, and similarly in the case of the nation, we hear talk of race suicide. The analogy holds good wherever it is pressed. Now we do not hear any wild outcry for the teaching of gastric physiology, for no one thinks that physiological knowledge of itself restrains appetite. Juvenal has told us how the Romans of his time used their knowledge to avoid the discomforts arising from two successive feasts, not by avoiding one feast, but by taking an emetic between the two. I have even heard it said—by patients, of course—that with all their knowledge of the physiology of digestion, physicians find it just as difficult to refrain from the forbidden fruit as their less learned brethren. And who would dream of a starving man being kept from stealing food by any knowledge of physiology? In other words, the matter is a question not of knowledge but of morals. And precisely the same is true of social and sex questions. The remedy is self-restraint, not self-knowledge. And even this self-re-
strain, laboriously taught and still more laboriously learnt, can be
nullified by an hour's alcoholic excess.

But the teaching to girls of the care of infants is a very different
thing. It is really part of the technical education necessary to pre-
pare them for their later life. Taught practically with real babies it
is not only of future value, in that ultimately it should greatly lessen
the work at present done by the trained nursing inspectors, but it
gives the opportunity of the girl unconsciously absorbing these very
lessons which the upholders of physiology wish to be acquired, and
serves a present purpose in that it takes direct to the home a supple-
mentary and more powerful advocate of the instruction left by the
visiting nurse.

Some Fundamental Principles in Studying Infant Metabolism.—
By Drs. F. G. Benedict, and F. G. Talbot, (Amer. Jour. of Dls. of
Children, September, 1912, Post Graduate.)

In studying the growth and the treatment of nutritional disorders
infants it is necessary to have some knowledge of their energy re-
quirements and of the energy content of their food. The ideal
method would be to determine by direct measurement the heat elim-
inated and produced. This method is not very practical because of the
cost of the apparatus. The second method is the so-called "indirect
calorimetry," i.e., the computation of the energy transformations from
the gaseous exchange. Direct determinations of carbon dioxide pro-
duced by infants are less difficult and have frequently been made.
Nearly all of our knowledge of infant metabolism is based on these
investigations. Practically all of the research work carried out in in-
fants in which the carbon dioxide was measured failed to take ac-
count of muscular activity, and it is the purpose of Dr. Benedict and
Talbot to point out the inconsistencies of determinations of carbon
dioxide without taking into consideration muscular activity. A very
close relationship was found to be established between the carbon
dioxide production, the pulse rate and the muscular movements of the
child as recorded on the smoked paper drum. When there was
minimum activity a comparison of the pulse rate and carbon dioxide
production show that they were also at their minimum. While to the
eye the child might be quiet yet the records show that there was con-
siderable muscular activity, enough to produce almost a ten per cent.
increase in metabolism. The enormous variations in the total meta-
bolism as affected by what otherwise appear to be slight muscular
activity, are such as to lead the authors to question seriously all ex-
periments made in twenty-four periods and they assert that all
metabolism experiments on infants made without known controlled
pulse-rates and without graphic records of muscular activity are
lesssened enormously in value by the absence of these factors.
BOOK REVIEWS


This volume is one of a series of publications issued by the Russell Sage Foundation. This particular volume is a revised edition of the “Medical Inspection of Schools” published in 1908. The reception of the first edition was so favorable, that it had to be reprinted in January, and again in December 1907. The subject of the Medical Inspection of School Children has increased three-fold in American cities, during the past three years. The rapidity and extent of this work has been unequaled by that of any other educational movement in America. This volume is designed to meet the growing demands of teachers and educators generally, for instruction in the diseases and defects of children of school age. Physicians will find it invaluable, because of the clear, concise explanations in the chapters devoted to Errors in Refractions, the Influence of Nasal Obstruction on the Development of the Dental Arches, Nervous Disorders, and Mental Defects. The school nurse unknown four years ago, is now an important adjunct to the system of Medical Inspection of School Children, in most of the large cities. The modes and perfected technique of such examinations have outgrown the original text, and this has led to the preparation of the present volume. While covering much of the matter treated in the original edition, the greater part of the text has been entirely rewritten, and the descriptions and methods, and forms as well as the quantitative material has been brought down to up-to-date methods. Like its predecessor, this book is intended to be of practical use, to be a reliable source of information as to what is now being done, and how it should be done, and to point out in a way, difficulties yet to be solved. It avoids, as far as possible, all dogmatisms, save that involved in the statement of actual experience. It is a book that can be read with much profit to those interested in the Medical Inspection of School Children.

The Surgical Diseases of Children—By William Francis Campbell, A. B., M. D. Professor of Anatomy, Long Island Medical College; Surgeon-in-Chief Trinity Hospital, and Le Grand Kerr, M. D., Attending Pediatrician to the Methodist Episcopal, Williamsburg, Bushwick and Swedish Hospitals, etc. Octavo; 693 pages; illustrated. New York and London: D. Appleton & Company, 1912.

This work is the collaboration of a prominent Surgeon and an eminent Pediatrician, who together successfully present the subject of the Surgical Diseases affecting children. The Medical and Surgical subjects are so well-balanced, that the book is of as much value to the Surgeon, from the Pediatric point of view, as it is to the Pediatrician from the surgical point view. The authors present their subject so as to give the greatest practical value to the reader. The text is well emphasized by many excellent illustrations, and numerous reproductions. In the chapter of burns and scalds, the illustrations are very valuable, showing the correct positions for the extremities when involved. The same applies to the illustrations of vaccination sores, etc.

In Surgical Pediatrics, as in Medical, there are some disorders which are found at no other time of life, and others occur in adults as well as in children. When found in the latter they present a different Pathological phenomenon, and then a different course of treatment is required. The treatment of Adult Surgical Diseases of infants and children is as distinct in their peculiarities, as their medical disorders.

The first half of this work is taken up with the Chief Considera-
tions, such as the preparations for Anesthesia, surgical examinations, infectious diseases in injuries. The second division of the work is entitled, "Constitutional from the Surgical aspect," where in the authors give space to such subjects as hemophilia, rickets, scurvy, status, lymphaticus, thereby very closely bringing together the Medical and Surgical aspects of these diseases. The latter half of the book deals with Regional Surgery. The subject of appendicitis receives considerable attention, and much stress is laid on rectal examinations, in making the diagnosis.

The book is of a very convenient size, and should be of great value to the general practitioner, to the pediatrician, and to the General Surgeon alike. The combined training of the two authors especially qualifies them for joint collaboration in this work. It is a pleasure for the reviewer to highly recommend this volume to the classes of physicians just mentioned.


In the preparation of this handy little manual on the medical diseases of children, Dr. Whiphram has had the needs of the student and general practitioner permanently before him. The author has succeeded well in preparing a short, but complete account of the diseases of children, in accordance with modern views. There are many excellent manuals dealing with diseases of children on the market, but the present book is by no means superfluous.

The opening chapters deal with the development on feeding, and derangements of nutrition in children. These chapters are most carefully written, and contain much sound, common-sense. Then follow chapters on specific infectious diseases. These are handled in a most excellent manner. Following these, are chapters on constitutional diseases, diseases of the alimentary and respiratory, and circulatory systems, the principal medical diseases of which, being considered in detailed. The author assumes that the reader has a working knowledge of diseases of adults, and his main attempt is to put the reader in a way of acquiring a similar grasp of the subject of Pediatrics. He devotes just sufficient space to etiology and symptomatology. The author might have, however, devoted more space to the subject of treatment, as we hold that a text-book, dealing with medical diseases, the subject of therapeutics, ought to occupy an important position and especially a work designed to cater to those in general practice. We regret that the treatment of diseases has not been discussed more at length and in detail, in this volume. The same criticism might be applied to symptomatology, as this is of great importance to the young student and general practitioner, otherwise the volume is very commendable.

The work is well illustrated, and we have been most favorably impressed by the work. We can with confidence, recommend it to students, and those in general practise.


Of the many excellent manuals devoted to the treatment of
Diseases of children on the market, there are few that measure up to the excellent standards of the present book, and we feel that this one will be welcomed to the general practitioner's library. Dr. Sutherland's idea, in discussing the treatment of diseases, is to present the reader with specific directions for carrying out one line of treatment, rather than to enumerate all the remedies which have been employed more or less successfully in the disease above discussed. Believing that the plan outlined, will be of more value to the practitioner than to carry out the latter idea, this volume is devoted more particularly to treatment. The author, assuming that the reader has a working knowledge of diseases of adults to start with, devotes his entire subject matter to put the reader in a way of acquiring a similar grasp on the diseases peculiar to infants and children, which, of late years has become an important branch of medicine, and every medical man and general practitioner realizes that much of his daily work will be devoted to the diagnosis and treatment of the diseases of children. Brevity being one of the leading features of this work, the author does not take up unnecessary space with Etiology and Pathology, but leads up to a full consideration more directly on the particular subjects of Diagnosis, including differentiation and treatment.

The author presents in this work, to the young practitioner all that is new on the subject of specific fevers, diseases of the skin, and new methods in treatment, being fully described. This little volume will enable the students and general practitioner to quickly grasp the more important parts of the subject of Pediatrics, and furnish them with a rapid reference book for clinical use. As such, we gladly comment it to the profession.


The opening chapter of this valuable work on the "Milk Question," embraces the general considerations of the problem. The second chapter considers "milk as a food," chemically and summarizes the difference between cow's milk and woman's milk. The third deals with "dirty milk," the source of the bacterial contamination, legal standards, and harmfulness of dirty milk. The fourth chapter is devoted to "Diseases caused by infected milk, viz. "Tuberculosis, typhoid and scarlet fever, diphtheria, etc. Chapter five tells about "clean milk"—certified milk, milk inspection. Then follow chapters on "pasteurization," "Infant mortality, and all about milk from the farm to the consumer.

Dr. Rosenau, is the greatest living authority on the subject, and has produced a complete and authoritative study of all the various aspects of the question of the quality and healthfulness of milk. The book is fully illustrated, and is indispensable to dairymen, distributor, legislators, social workers, and the general public interested in this all-important question.


The aim of the author in presenting this small volume has endeavored to point out a series of hygienic rules which, if properly carried out, will be of great benefit to the babe, not only lessening susceptibility of disease, but giving increased force and vigor to the baby's growing frame. This is just the book intelligent parents will welcome, for they are ever ready to co-operate in anything that will benefit their baby. The first chapter gives the mother an insight by
which she will be able to distinguish between the features of health and diseased conditions, and when the necessity arises for calling a physician. The last chapter while not a complete guide to the practice of physic, yet it gives competent advice upon questions that arise every day in the nursery. Special attention is given to a chapter on foods. This little volume ought to be in the hands of every mother and prospective mother as well, to whom we heartily commend it.


Doctor Herter, in this very instructive volume, describes the leading features of an obscure affection of childhood. The author bases this volume on the studies of five cases of Infantilism, which he records in complete detail, making the volume doubly valuable from a clinical point of view. A careful study of this work will convey more information on the subject than one would be able to find in all the text-books on the market. Dr. Herter has done the profession a great service which can only be appreciated by physicians who have read the book. We heartily commend it to every physician interested in diseases of children.

**A New Book On The History of Medicine.**—W. B. Saunders Company, publishers, of Philadelphia and London, have in active preparation a work on the History of Medicine by Dr. Fielding H. Garrison, Principal Assistant Librarian, Surgeon-General’s office, and editor of the Index Medicus. Dr. Garrison’s twenty years’ experience in medical bibliography, and the unusual advantages derived from his close touch with the rich stores of the Surgeon-General’s office, fit him most admirably for such a work as this.

His book will present the history of medicine from the earliest ancient and primitive times; on through Egyptian Medicine, Sumerian and Oriental Medicine, Greek Medicine, The Byzantine Period, the Mohammedan the Jewish Period, the period of the Renaissance of Revival of Learning and the Reformation, the Seventeenth Century (the age of Individual Scientific Endeavor), the Eighteen Century, the age of Theories and Systems), the Nineteenth Century, (The Beginning of Organized Advancement of Science), the Twentieth Century (The Beginning of Organized Preventive Medicine). There will also be appendices covering Medical Chronology, Histories of Important Diseases, Histories of Drugs and Therapeutic Procedures, Histories of Important Surgical Operations, and Bibliographic Notes for Collateral Reading.

Dr. Garrison’s work will undoubtedly be a valuable book to every man. In this one volume he will get a complete history of medicine from its earliest times, presented in a concise form.

The illustrations are intended to stimulate the readers’ interest in the picturesque aspects of medicine and in the personalities of its great readers. The biographies will be confined to the most important facts and to interesting personal traits. The original bibliographic references to the important discoveries, operations and experiments will be given. Each period is to be followed by a brief survey of its social and cultural phases. Altogether it promises to be a most important addition to medical literature. We await its publication with much interest.
THE DIAGNOSIS OF CONGENITAL SYPHILIS

There are so many phases of Congenital Syphilis coming under the observation of physicians that it is sometimes difficult to make an accurate diagnosis. Many of these cases present obscure symptoms, and it may be useful to attract attention to some points which will afford assistance in arriving at a correct diagnosis. The careful inquiry into the family history will often shed light on a case in which specific inheritance may be suspected. It is often impossible to obtain a reasonable, fair family history when the diagnosis must be made from such symptoms as are noted visually. Unfortunately, in infancy and childhood, Congenital Syphilis may run its course without necessarily exhibiting any external signs. It is not recognized that the virulence or prominence of symptoms in the child varies with the activity of the disease in the adult. As a result of these influences it is not surprising that Congenital Syphilis may be attenuated to such a degree that no tangible evidences are present. The only manifestations being mulnutrition, and failure to respond properly to well-regulated diet and hygiene. Thus, the disease may run a latent course for several years before diagnosis is made. Again there are cases which exhibit characteristic stigmata—crescentic rounding of the upper central incisors, saddle shaped nose, rhabades at the angles of the mouth, etc. It must be borne in mind, however, that none of these signs are met with in very young children. The Hutchinsonian teeth belong to second dentition, while the other symptoms just enumerated, rarely develop before the tenth or twelfth years.

Of all tissues, the mucous membranes are the most sus-
ceptible to the syphilitic virus, and therefore it is to those diseases that we are looking for the most commonly observed symptom of congenital diseases—snuffles. Second lesions come next and are followed by enlargement of the lymphatic glands. Later the liver, lungs and spleen are seats of selection. Bone lesions are not common, but are by no means rare. The disease most often attacks the shaft of the long bones as a periostitis.

Of the lymphatic glands, the condition of the epitrochlears demands first attention. In older children it is not uncommon to find the disease associated with enlargement of the tonsils and adenoids. In all cases in which the clinical findings are obscure the Wassermann reaction will assist in arriving at a correct diagnosis.

Sero-diagnosis is more complex in hereditary than in acquired syphilis according to McCarthy in The Practitioner, March issue. It is necessary to consider the relative activity of the disease in the parents at the time of conception; the paternal, maternal, or mixed origin of the infection; the period of time which has elapsed since infection; and, finally, the influence of treatment. Each of these factors seems competent to modify the consequences of syphilitic heredity and the Wassermann reaction. If results are to be fully comparable, it is essential that the reaction shall be performed at all times under similar conditions and details of procedure. Various modifications of the original method are now in use, and have been ably reviewed by Gomer. The original method, however, admits of more accurate standardization than do any of the time-saving substitutes suggested, and, as a result of general experience, it has been found to be the most reliable.

OPiUM IN INFANCY

A thoughtful, valuable paper on this subject, based upon well-seasoned experience, appeared in a recent exchange. The author thinks that the real danger of opium in infancy has only recently been recognized. It must, at all events, be conceded that our best textbooks on the principles of therapeutics have warned us much more against the danger of large doses than against the much greater dangers of arrest of development of precipitation of true degenerative change in the infant brain. The author believes that opium, even in the small-
est dosage, continued for any length of time, will be disastrous. "Opium seems to have two distinct effects upon the nervous organism of infancy. Its sedative action is of the nature of palsy. Cell-functions and growth are slowed up, retarded, and finally changed. The changes following long-continued doses become permanent. The temporary symptoms of stupor and dullness persist as imbecility and mental perversion in later life." He cites some striking instances of patients whose passion for alcohol and opium as adults could be readily traced back to constitutional instability acquired in early infancy. One patient, a confirmed invalid and morphinist before his thirtieth year, had never been a natural or healthy child, after having been treated when an infant for over a year with continuous doses of opium given to "cure convulsions." Two children, the only degenerates in the otherwise perfectly healthy family of an Indian missionary, were found to have been intoxicated by a Hindoo wet-nurse. She was a confirmed secret opium-eater, unfortunately not exposed till two of the children of the family had suffered permanent injury from the poison in her milk.—The author states that many disquieting symptoms in children at, and just after puberty are referable to the improper use of opium in infancy. Such symptoms are intractable nervous dyspepsia, great precocity followed by sudden collapse of the over-excited faculties, great exhaustion following slightly excessive physical or mental exercise.—Children like this should be closely watched. They often have the "opium diathesis," and will develop the habit on the slightest occasion. The conclusions are evident. Ignorant mothers must be again diligently warned of the dangers of soothing-syrups. Children should never receive opium in the smallest doses for more than a day at a time. Its administration should be altogether avoided unless the indication is urgent and not otherwise to be met. "When in doubt" use some other drug.

THE TREATMENT OF SUMMER DIARRHEA

The warm weather will soon begin again in good earnest and the city clinics will be crowded as of old with all grades and stages of summer diarrhea. While, statistically, the diarrhea plague may not be so great as during past summers, the number of cases will be great enough and the discomfort
of the babies trying enough to fill the children's dispensaries with wailing and weeping.

A short summary of practical treatment is in order. Treatment may be summarized in three words (1) diet, (2) quiet, (3) medicine,—and the arrangement of these items is perhaps antelilimacite, as diet is the most vital item in the list. Regarding diet it is best to give to a fairly strong baby with ordinary summer diarrhea (slight fever with 8 or 10 greenish foul stools per day) only boiled water for 24-36 hours—till the passages have improved. When the parents need "doctoring" as well as the children, the baby may receive boiled barley water (carefully strained, sweetened and salted) or rice-water. Oatmeal water is less desirable from its recognized tendency to relax the intestinal muscle. Should the child remain unimproved for a longer period than 36 hours, of course nutriment must be given, but even then it should be only albumin water (with a drop or two of lemon juice) and barley water. Sufficiently supplied this diet will run the case quite well for even several weeks—till milk (meaning by this the best grade of bacteria-free milk) may be gradually introduced. Next is quiet and fresh air. Babies suffer as much in diarrhea when tumbled about by their nurses as adult patients suffer when walking around. They should lie peacefully on the couch or in the cradle and make none except necessary movements. Playing about the floor should not be permitted. Fresh air is essential, however gotten. Suburban trolley cars could be utilized by the city dwellers more than they are on fine days. If the weather be rainy or temporarily chilly a steamboat trip is not desirable. The patient may be cured of his diarrhea but get bronchitis instead. Cool bathing is useful, and light, cool clothing very important. Thirdly, regarding more specific medicinal measures, *primum non nocere*. Mild cases need no medicine. More severe cases need only a primary purge of castor oil, which is far better than triturate tablets of calomel, as it has a secondary "binding" influence, an influence which most observant mothers have found out for themselves. Severe cases may profit by bowel irrigations. The profession is now veering back to the ground of a dozen years ago and beginning to say that bowel irrigations have been much over done and are rarely required. The truth as usual lies between the extremes. Bismuth with pepsin and sodium bicarbonate, or bismuth with castor oil to 20 grains of bismuth repeated, p.r.n. may be finally
required to complete the cure. Opium should be avoided except in the severest choleroid cases, when the pain may be excessive without it.

CLASSICAL EDUCATION FOR MEDICAL STUDENTS.

There is a growing tendency to regard Latin and Greek as not essential to medical studies and to deplore the time spent in their pursuit. It is said that for one intending to become a physician the time might be more profitably spent in the study of modern languages and scientific studies closely allied with medicine. This would certainly be in part true if one intended becoming a physician alone and did not contemplate filling a dignified position in society in general. Again, does one know whether he is going to pursue medicine from the commencement of his college course? Is he then capable of judging what profession he intends to follow? Is it not better to acquire a thorough general education first, that so important a decision can have something more than a sentimental basis? Abandonment of the classics and pursuit of collateral sciences with the addition of the study of modern languages might seem more valuable from a purely utilitarian standpoint, but would probably be narrowing in the end. We suspect that some of this opposition to the study of the classics comes from those who, being ignorant thereof, are hardly capable of judging.

A smattering of Latin and a knowledge of the Greek alphabet certainly cannot be of much service in training the mind. Such knowledge is quite useless and only tempts some to use words with which they are unfamiliar and to write prescriptions in a tongue they know not. If classics are studied, let them be thoroughly studied and let Latin feminine plurals to Greek neuter-nouns and mistakes in gender and genitive cease to bring discredit upon many of our otherwise excellent standard text-books. The sciolist who tries to write his prescriptions in Latin may fool the ignorant but pains those who really know. Let us have good Latin or good English. Anatole France in the Paris Annales Politique et Litteraire in deploiring the passing of the classics, says:

"I bear a desperate affection for Latin studies. I firmly believe that without them the beauty of the French genius is done for. All those of us who have thought somewhat vigorously have learned to think from Latin. I do not exaggerate
when I say that ignorance of Latin is ignorance of the sovereign clearness of expression. All languages are obscure beside Latin. The literature of Latin is more adapted than any other to the cultivation of the mind. In asserting this, I am not deceiving myself regarding the scope of the genius of the compatriots of Cicero; I see their limitations. Rome had simple, strong, and but few ideas. But it is for this very reason that she is an incomparable educator. Since her time humanity has conceived more profound ideas; the world has had a new shudder at the contact with things. But it is also true, that to arm our youth, nothing equals the power of Latin.

Now open the histories of Titus Livy. There everything is well-ordered, lucid, simple. He is not a profound genius; he is a perfect pedagog. He never troubles us; but how logically he thinks! How easy it is to explain his ideas, to examine each part separately and show its relation to the whole! This in regard to form. As to content, what do we find there? Lessons in courage, in devotion, in worship of ancestors, in the cult of fatherland. Here is a true classic! I speak not of the Greeks. They are the flower and the perfume. They have more than virtue; they have taste. I mean that sovereign taste, that harmony which is begotten of wisdom."

PREVENTION OF INFANT MORTALITY

An English-speaking Conference on the Prevention of Infant Mortality will be held in Caxton Hall, Westminster, London, on Monday morning, Monday afternoon and Tuesday morning, August 4th and 5th. The meetings will be held under the auspices of the (British) National Association for the Prevention of Infant Mortality and The Welfare of Infancy under the Patronage of the King and Queen, and will convene immediately preceding the opening of the International Medical Congress.

A tentative program has been issued by the Committee which indicates that the papers will consist largely of medical opinion. The subjects treated will be:

The responsibility of central and local authorities in infant and child hygiene.
The administrative control of the milk supply.
The necessity for special education in infant hygiene.
Medical problems in Infant nutrition.
Ante-natal hygiene.
The president of the conference will be the Hon. John Burns, M.P., president for the Local Government Board. The chairman of the English Executive Committee is Sir Thomas Barlow, and the secretary, Miss J. Halford, 4 Tavistock Square, London, W. C.

The American Committee, in charge of the part to be taken by the United States and Canada, will furnish information to those desiring to attend the conference: Dr. Henry L. Coit, Chairman, 277 Mt Prospect Avenue, Newark, N. J.; Dr. Philip Van Ingen, Secretary, 125 East 71st Street, New York City.

JUST THINK OF THIS

About two and a half million babies are born in the United States each year. Nearly half a million die in their first year, and half of all are dead before they reach their twenty-third year, before they have had a chance to do either much good or evil in the world. Of the one and a quarter millions who live, a certain proportion will become industrious citizens of average ability, and the smaller proportion will be the leaders of men, the doers of deeds, while there will be a very definite proportion that will, by reason of their heredity, become criminals, epileptics, paupers, alcoholics. The other more healthy and able people of the United States have to support these incapable ones. There are about half a million insane and epileptic, feeble-minded, blind and deaf; there are 80,000 prisoners and 100,000 paupers—all of whom cost the United States over a hundred million dollars a year.
Phlyctenular eye affections must be numbered among the common eye diseases of childhood, and in certain regions the condition might almost be said to be endemic. In the Medical Times, Nov. 9, 1912, I discussed the subject in a short article entitled "Some general remarks on phlyctenular ophthalmia," but it may be of interest to deal with the disease in special relation to children. Phlyctenular ophthalmia is essentially a disease of childhood, and is not often met with in adult life. When it does occur in the latter period there will generally be a history of previous disease in childhood. I do not remember having seen phlyctenular eye disease as a primary condition in an adult.

Phlyctenular ophthalmia is a comprehensive term which embraces several varieties of this condition. The disease is an inflammation characterised by the appearance of phlyctenules which may be single or multiple. These phlyctenules appear as small vesicles surrounded by a zone of injection. They may appear on the conjunctiva, when the term phlyctenular conjunctivitis is applicable, or they may be situated on the cornea and give rise to phlyctenular Keratitis. They are often met with at the limbus just at the corne-scleral junction when the disease may be designated with equal propriety, phlyctenular conjunctivitis and phlyctenular keratitis. Sometimes the apices of the phlyctenules break down and ulcers remain. These as a rule head up very quickly without leaving any visible trace, and it is only when the deeper corneal layers have been involved that permanent damage is sustained. The corneal opacities remaining may be so slight that they are only detected by oblique illumination, but even such faint nebulae will
interfere with vision and patients thus affected will often fail to respond satisfactorily to correcting lenses. It has also been pointed out by Wilson (Glasg. Med. Jour., April, 1912) that corneal opacities are potent factors in the development of myopia, and he thinks that in many cases these opacities result from phlyctenular keratitis.

The symptoms are very similar to those met with in other varieties of conjunctivitis and need not be given in detail. I should just like to draw attention to two points which are very evident in almost all cases. Photophobia with accompanying blepharo spasm is intense, and discharge is rarely seen. The child will sit away from any source of light in the darkest corner of the room and will keep the eye covered with a handkerchief or any available piece of rag. When the child is brought into the office he or she will bury the head against any convenient part of the mother’s person. Any discharge is almost certainly of secondary occurrence, resulting directly from the methods adopted to overcome the photophobia.

With regard to the etiology, the disease is generally regarded to be of constitutional origin, and many of the older writers termed the disease “Strumous ophthalmia.” In view of the modern conception of the disease it will be evident that they were not far off the mark. While there may be many contributory factors there can be little doubt that in the majority of cases tuberculosis is the important etiological factor. Many observers have shown that in a large percentage of children who suffer from phlyctenular ophthalmia the various diagnostic tuberculin reactions are positive. This is now an established fact, and even if the reaction is negative it by no means follows that the case is non-tuberculous. One rarely finds in these cases clinical evidence of active pulmonary tuberculosis or tuberculosis elsewhere. I have made careful clinical examinations in many cases, and I have but rarely found positive evidence of tuberculous. In the absence of one of the tuberculin tests one is almost forced to base diagnosis on general considerations. As mentioned above there may be many contributory causes and it is possible that some of these may act as exciting causes in patients in whom there is this tuberculous sub-stratum. It is well known that the disease is almost prevalent amongst the poor and especially in the slum districts of large cities. No doubt several factors here play a part, for instance, dirt, defective dietary, over crowding, etc. When a child from
one of these over-crowded houses is admitted to a hospital or
sent to a convalescent home is it not possible that the change
to a more healthy environment has much to do with the rapid
cure which ensues? The dictetic regime of these children may
be defective as regards quantity or quality or both. Abundance
of an unsuitable diet is just as harmful as insufficient
food. Investigation will show that these children generally
have far too much carbo-hydrate food and too many sweets,
and much benefit will be derived if both these faults are
remedied. It is not improbable, as Wilson has suggested, that
as a result of improper food there is produced a gastro-intes-
tinal toxaemia. Phlyctenular eye disease is met with in debili-
tated children who may or may not be anemic. This debili-
tated state is liable to occur after one of the infectious diseases,
and the eye affections under consideration are especially prone
to supervene after measles and whooping-cough. Pediculosis-
capitis is frequently associated with ocular phlyctenulosis, and,
I think, it is Bishop Harman of London who refers to the
"ever-present pediculi" in this connection. Certainly it is
well to look for evidence of pediculosis and to treat it if neces-
sary. In chronic cases the state of the nasal fossae should al-
ways be investigated and special attention should be given to
the naso-pharynx as to whether or not adenoids are present.
Any error of refraction should be fully corrected, because in
many intractable cases it will be found that this is the exciting
cause producing and maintaining the phlyctenular condition.
To properly investigate such cases a retinoscopy examination
under atropine mydriasis is necessary. I have met with several
cases in which distant vision with the Snellen test tube was
6-6, but in which the dark room examination revealed several
diopters of hypermetropia. When the correcting lenses are
prescribed the condition is quickly relieved.

In treating a case of phlyctenular ophthalmia both local
and general measures are necessary. My experience has been
that in the majority of cases simple local measures combined
with general treatment will suffice. The eye ought to be
bathed several times daily with some mild non-irritating lotion.
Boiled water would do quite well, but it is usual to employ
boric lotion (10 grains to the ounce). Saline solution may also
be used with benefit, but stronger antiseptic lotions or astring-
ent eyewashes only tend to aggravate the condition and should
therefore not be prescribed. The whole purpose is to keep the
eye clean, and this can be accomplished by any mild lotion. In addition to this frequent application of a little weak yellow oxide of mercury ointment to the eye is invaluable. The ointment I use is 4 grains of yellow oxide of mercury to an ounce of vaseline. I am well aware others use stronger ointments, but, in my experience, this weaker ointment is just as effective and is less liable to cause irritation. This ointment is applied once or twice daily, and if only once it is best given at night. The lower eyelid is everted and a small portion of the ointment is inserted into the conjunctival cul-de-sac. It may be allowed to work its way in gradually or it may be dispersed by gently massaging the lids over the eyeball. It is most important that the ointment should be free from gritty particles, otherwise there may be severe irritation. If the cornea is in any way involved I invariably order atropine with a view to protecting the iris. I don't say that it is necessary in every case of phlyctenular Keratitis, but I do think it is a wise precaution to take. The atropine may be added to the yellow oxide of mercury ointment in from 2 to 4 grains to the ounce, or, if preferred, it may be prescribed separately either as an ointment or in drops. Dusting the eye with powdered calomel is often good, and other dusting powders such as xeroform, aristol, etc., have lately been recommended. Ulcers may require to be touched with iodine, peroxide of hydrogen, etc., or the actual cautery may be necessary. Dionine may also be of service. If the tension is high paracentesis may be called for. The blepharospasm is frequently extremely difficult to overcome, and in severe cases some form of cautho-plasty may even be necessary. The instillation of a few drops of cocaine solution two or three times a day may do good. The removal of unhealthy adenoid vegetations from the nasopharynx may afford relief. Every effort should be made to encourage the child to keep the eyes open, and in younger children the old-fashioned method of placing the head in a basin of cold water until the child gasps for breath is useful. In a recent case with severe blepharospasm which resisted all the usual remedies I found the instillation of adrenal in chloride solution 1 in 6000 twice daily followed by a rapid cure. The eye must on no account be bandaged up, and if the photophobia be very severe, a brown paper shade may be allowed, but nothing more.

With regard to general measures these children ought really to be treated on the assumption that the condition is a
manifestation of tuberculosis. The food should be plain and nourishing; there should not be excess of carbo-hydrates and sweets should be as far as possible prohibited. One naturally advises more hygienic surroundings, but it is often impossible to have this carried out. During the acute attack it is of much assistance in bringing about a rapid cure if the child can be admitted to hospital for a week or ten days, and later sent into a convalescent home for two or three weeks. After the acute stage is over and when the child can tolerate the light an open air life in the country is excellent. In fact all the principles of treatment applicable to the tuberculous patient should be advised. Any contributory causes should be reduced. Errors of refraction should always be corrected and nasal trouble should be treated. If there is definite obstruction from adenoid vegetations in the naso-pharynx these should be removed by means of the curette. If the naso-pharynx is simply in an unhealthy condition, with perhaps increased secretion, then brushing out the cavity two or three times a day with an alkaline lotion is excellent. A suitable weak antiseptic lotion of this nature will contain sodium chloride, sodium bicarbonate, and sodium bichlorate. Pediculosis capitis should be treated and debility and anemia should not be overlooked. Tonics should be prescribed and perhaps for children the syrupus ferri phosp. co. (Parrish’s food) or the Sirrup of the iodide of iron will be best. Malt or malt and cod-liver oil may also be ordered. In several cases I have had good results with guiacol applied in the form of a paint which consists of guiacol and olive oil in equal parts. The technique of application is as follows: The child is put to bed between blankets. An area about a foot square on the front of the abdomen is painted with the guiacol and olive oil mixture. This is covered with some oiled silk on the top of which is placed a pad of wool and the whole is secured in position with a binder or bandage. About one drachm of the above mixture should suffice for a young child. An aperient is given on the evening in which the application is made, and the painting may be repeated every second or third day as required. Every care should be taken to keep the child warm and to avoid the child getting a chill. I have never seen any untoward effects, local or general, follow this treatment.

In conclusion I may say that during an attack all school work should be discontinued. It should not only be our endeavour to get the child well quickly, but we should also try
to prevent future attacks. The disease is so common that one is apt to minimize its importance, but it should be pointed out that each attack renders the cornea liable to be affected, and the after effects may be such that vision is considerably interfered with. In neglected cases the resulting defect of vision may be such that the patient's capacity as a wage-earner is very limited. It seems to me that such a state of affairs is preventible, and if preventible, why not prevent it?

SEVEN SEX TALKS TO BOYS

By IRVING DAVID STEINHART, M.D.
New York City

As I told you at our last meeting the subject of our talk this evening would be syphilis and I am wondering if I can find words strong enough to describe to you this horrible disease, an affliction which one would not wish to his worst enemy if he had any mercy left in his heart at all. And yet supposedly sensible people put themselves in the way of getting this "curse of humanity" for no better reason than the debasing of the sex of their own dearly beloved mothers and sisters, and their own manhood. Well named is it the "black plague" and in the suffering, agony and deaths it causes, directly and indirectly, it makes tuberculosis, the so-called "white plague" an almost harmless disease. It is a most earnest ally of the great "white plague," as if the suffering and harm it causes was not sufficient. It is probably the most loathsome of all human diseases and is the one which gives much force to the biblical quotation "And the sins of the fathers shall be visited upon the children even unto the third and fourth generation" for not only does it make life miserable for the original possessor of it but for his wife and their children and can even be transmitted farther down the line as stated above unto great-grandchildren. Sounds pleasant does it not? And then think of the fact that this most horrible disease is not only absolutely preventable but could be stamped off the face of the earth by such simple means as having morality exist among mankind. It almost seems inconceivable that under such circumstances that in a supposedly civilized world such a disease could exist at all and yet it does to a fearfully large extent and claims a very large death roll every year from among.
young and old, and death is not all it claims from the human race each year—it condemns many to a living death for such is hopeless insanity, before the real end comes. Am I trying to frighten you? No, I am simply sticking to my original policy of, telling you just plain truths and letting you draw your own conclusions. To those of you who will use your brains there can be only one conclusion to draw as regards the question whether one should live a moral or immoral life. Syphilis like gonorrhea is a long drawn out infectious disease, having acute and chronic stages. The contagion is usually transmitted from person to person during the sexual act but can be gotten in other ways which will be mentioned later on in our talk. Like gonorrhea it is a germ disease using this term in a broad sense. The life wrecker in this case is known as the spirochaeta pallida Schaudin. I merely mention this name to you in passing and there is no necessity for you to remember it except out of curiosity. Should you ever be the victim of their activities you will always remember the activities if not the name, and your remembrance will be the opposite of pleasant. The present and future results of the disease will not permit you to forget. It is quite an ordinary thing in the practice of medicine to have patients come to you for treatment for syphilitic outbreaks who acquired their troubles maybe fifteen, twenty or twenty-five years before and thought themselves well rid of the disease after this long length of time had elapsed, only to find out their error many years later. Not the most pleasant of surprises, think you and your "think" is a most correct one. Syphilis like gonorrhea does not give symptoms immediately it has been contracted and therefore adds to its terrors because the freshly infected person may continue his or her immorality and thereby spread the disease right and left. It is between fourteen days and three weeks after the infection that the first or the so called "initial lesion" of syphilis makes its appearance. It is just a sore and it appears wherever it was that the poison of syphilis entered the body. The next thing noticed is that the glands near the place of infection become swollen. Then everything is quiet for a long while, in some cases for six weeks and in others eight weeks. Do you see the false security that is given to the unknowing victims and the time placed at his disposal to continue to spread the "black plague"? It may puzzle you that I say the first sign is this sore or ulceration and yet that on its
appearance the victim does not know that he has acquired the
dread disease. The answer is a very simple one. Considering
the unexpected appearance of the sore so long after, perhaps,
his last indulgence in "immorality" he does not connect the two
things at all but imagines he has injured himself in some way that just now he does not recall and gives himself home trea-
tment for this supposed injury. On the other hand he may go to 
the doctor and have a wrong diagnosis made. This is not alto-
gether the fault of the doctor, either because the initial sore in 
a case of syphilis may be any of six different kinds of varieties 
and also because there is a certain kind of a sore or ulceration 
which may appear on the penis, the usual site of the initial 
sore of syphilis, which is not unlike the mark of syphilis and 
yet is entirely different in every way. In fact is practically 
harmless if kept clean. Each is unfortunately confused with 
the other to great detriment of the victim himself and those 
whom he may come into daily contact with. It is a very grave 
error to condemn a man as a syphilitic if he has not acquired 
the disease and injure his mental and physical condition with the 
worry of such a disease, not to say anything about the two 
years medical treatment that goes with the disease. And yet 
it is just as grave an error to turn a syphilitic person away 
with the wrong diagnosis to inflict his pestilence upon others 
and to be harmed still further by the unchecked ravages 
of the disease until it is properly diagnosed and treatment start-
ed later on. At the end of this forty or fifty day period the gen-
eral or constitutional symptoms are to be noted. Those particu-
larly noticeable at first are the appearance of a rash and gen-
eral glandular swelling accompanied probably by fever and 
chills. To tell you what comes after this opening during the 
aeute and chronic stages of this most horrible of diseases is to 
commence from the hair on the head and go down to and include 
the soles of the feet and every part of the victim in between. It 
might not do any harm to lightly touch on these troubles so 
you can see that I am not just making general statements 
which if gone into in detail would not be quite so bad. In 
syphilis—during the course of the disease the thinning out of 
the hair is to be expected or there may be complete baldness, 
either complete or in spots. This of course is due to the poison 
of the disease attacking the hair follicles or roots and destroy-
ing all or some of them. On the scalp itself may appear numer-
ous repulsive looking sores and ulcers. This is also true of the 
skin in every part of the body. Various rashes, sores and ulcera-
tions may be expected. Passing down to the eyes the disease may attack the bones forming the sockets in which the 
eyes are placed and cause just painful inflammation or go a
step farther and cause the bones to rot away. If the inflammation attacks the eyes proper serious results may be expected even to blindness. In the nose either the fleshy or bony parts may be affected. No matter in what part of the body bony tissue is attacked necrosis or rotting away of the bone affected is a possibility not very rare in occurrence. This is very true of the bones of the nose and jaw. Syphilitic lesions of the tongue are very apt to degenerate into cancer of that organ—a

most terrible affliction which means an operation for the removal of the tongue and then—eternal dumbness. Does immorality pay? But I am not through. We will continue our walk through the syphilitic chamber of horrors. Fearful headaches and neuralgias happen as various nerves feel the effects of the poison. The heart may be attacked with even fatal results. Abscesses caused by the syphilitic poisons may form in any part of the body including the lungs. These abscesses are called gumma and depending on their location are dangerous
to a greater or lesser degree. The pus or discharge from these gumma or any of the syphilitic sores or ulcers is very dangerous and is a factor in spreading the disease. Perhaps if not the most important, one of the very foremost organs of the body is the liver. Without it the human being could not live. The poorer condition it is in the poorer it performs its manifold duties and therefore the poorer the health of the person who owns the above mentioned liver. When I tell you that it is in the liver that most of the food of the body is prepared for its use and stored up until it is needed, you will realize yourself that the liver is of some need to the human being. And of all the organs in that part of the body wherein the liver is located, the liver is the one that is most often attacked by the poison of this vile disease. Destruction of liver tissue means a lessening of the efficiency of the liver to do its work. The answer is too apparent for further comment. The genital and urinary organs are not exempt but may be the site of syphilitic ulcers and inflammation. As many of you are aware the body has two distinct surfaces—an outside one covered with what you call the skin and an inside one covered or lined with what is known as mucous membrane. If you consider for a moment the vast extent of the inner surfaces of the body and that all this mucous membrane also is liable to be the site of syphilitic ulceration, I need hardly tell you the sequence. I might mention, however, that with these syphilitic ulcerations in the mouth of a victim, kisses from that person, using the same glass or in fact anything that touched that mouth would be almost a sure way of getting the disease. I might also mention that when these syphilitic ulcers form in that part of the intestines known as the rectum the lumen or width of the intestines is made narrower and maybe closed entirely. Your mind can picture the necessary result to relieve the condition, which of course has to be relieved. The various joints of the body may be attacked with partial or complete destruction as an end result. And please remember that although I do not mention each time that pain, usually of the most severe kind, accompanies these various manifestations of the disease, also bear in mind that I am not by any means going into the details but merely "dipping" very, very lightly below the surface. Syphilis is particularly sad in results when it affects the nervous system. The very worst forms of insanity in which the victims do the very lowest possible of degraded acts is a result of
the syphilitic poison. A large majority if not all the cases of locomotor ataxia are a result of the syphilitic poison. Most of the cases of abscesses of the brain and spinal cord, other than those caused by falls, blows or other violence are to be credited to syphilis. Many cases of blindness in adult life are caused by syphilis. The underlying cause of many cases of apoplexy resulting in death, insanity or permanent paralysis is that dangerous poison of syphilis. Epilepsy and convulsions may be induced by syphilitic lesions of the brain. In fact I think that one may be pretty safe in saying that the great majority of brain troubles in adults, of the various kinds could be traced back to syphilis. The poison of syphilis is of course carried through the body by the circulating blood and in this way the heart and blood vessels are affected with this very intense poison. One of the results is the "rotting" as it were of the walls of the blood vessels, which means serious consequences when they break down altogether and thereby permit
a hemorrhage to take place. Immediate death or the lingering life of a helpless paralytic is what may be expected. And believing I have now told you, perhaps even more than enough of this rank, loathsome disease I will stop the discussion of what it may do to the male who first gets it, and go on to say something about what it will do to those who are so unfortunate as to have it transmitted to them viz—the wife and the future children. When a person who has acquired syphilis and is not cured of it gets married the chances are that his wife will become infected and be liable to all the long list of happenings that I have just mentioned, plus the punishment of being unable to bear children successfully. By this I mean give birth to live, healthy children. You notice I say live healthy children. There is a reason. Children of syphilitic parents if born alive usually are not healthy. They have syphilis as a rule. The woman infected by her husband will, except under certain circumstances transmit the disease to her unborn child. The syphilitic poison is so intense that usually the product of conception (i.e. the growing unborn child) is killed at once and the mother has what is known as a miscarriage—or maybe the unfortunate mother has the misfortune to go ahead and have to go through all the pain, danger and suffering of childbirth only to have as a reward a dead child on whose tombstone should be engraved the following "I was murdered by my father because he lacked the proper respect for the sex of my mother, of his mother and his sisters before marriage." If the baby of syphilitic parentage does not mercifully die before birth the parents are "blessed" with a fine specimen of all that a baby should not be. In other words a sick baby from birth who will require great skill and care to have him survive his babyhood days and over whose life will hang the blight of syphilis with the possibility of having the disease break out in an active form almost any time. Certainly a very fine, bright outlook for a child to look forward to, after having first survived the tortures of the attacks of his babyhood days. I wonder if any of you have ever seen a new born or slightly older baby who has inherited this disease? If you have I think you will agree with me that you have never seen a more miserable specimen of the human race than was that baby. They are certainly the most pitiful looking objects that one can possibly imagine. Your mind picture of a baby is a happy, laughing, rosy cheeked, clean skinned little mite of humanity that every one wants to hug and kiss. Well, no one
is attracted to the syphilitic baby. No one wants to hug and kiss it unless it is the poor, unhappy mother whose maternal instincts are not overcome by the repulsiveness of her child. Poor little wizened, yellow, old man-faced baby, always whining, not a good baby cry, but a real practically unceasing whine. A face, body and limbs filled with the sores of syphilis, unhappy itself and a menace to others. A terrible living example of the horrors that may come to the innocent through the sin of immorality. There was no need for this poor baby to have been made a martyr, because the sexual relation is not a necessity to the health or well being of either sex, and in the second place illegitimate sexual relations are never necessary or excusable. One of the first questions that arises to your minds is, need that baby to have been born syphilitic even though the father had infected his wife? You try to excuse him by saying that perhaps he thought he was cured of this vile contamination when he got married and that therefore he was innocent of any intentional harm to his wife and expected children. Yes, there is a way by which a syphilitic husband can protect his future children. He can go to his family physician and acquaint him with the fact that he has had this disease and ask him to take precautionary measures for the well being of any future child should his wife get into that state. The doctor will understand and without betraying the husband's confidence will start such medication in the mother as will protect the child and at the same time benefit the mother also. The great trouble is, however, the great majority of those who have had or still have this loathsome disease do not do this for one reason or another, but trust to luck and inevitably get the bad luck, as they say. You know one is very apt to ascribe to bad luck one's own made misfortunes, not only in this but in other things as well. How can the contamination of syphilis be avoided? Personal contamination with the poison of syphilis can be avoided by (a) leading a strictly moral life, (b) avoiding the use of common drinking glasses, cups, etc., (c) by avoiding the use of common towels, and like things, (d) avoiding the handling of the sexual parts of others and avoid being handled, (e) avoid the use of common shaving brushes and mugs. (f) avoid indiscriminate kissing, (g) avoid personal contact of any kind with suspects, (h) avoid sleeping with others, (i) never use a bed which has been slept in by others unless the bedclothing has been changed, (j) avoid using a bathtub without first cleaning it thoroughly. This same re-
fers to toilets anywhere and everywhere. (k) avoid other people's clothes, especially underwear and bathing suits. (l) avoid handling dressings from syphilitic cases whether the pus has come from the eyes, body abscesses, genital parts or anywhere else. All of it alike is dangerous. Those who have had syphilis should not dream of getting married until they have had from two years to two years and a half of the most thorough treatment and then they should have their blood examined by the special test of the famous Professor Wasserman who tells of the presence or absence of the syphilitic poison in the system. Personally if I were a female I don't believe I would marry a man who had ever had syphilis for fear of the possible consequences to future children and myself. In fact I don't believe I would marry any man who had not led a moral life. Why should the male sex ask that the female be clean morally and yet take upon themselves the right to ruin morally and physically as many of the sex of their mothers and sisters as they possibly can. It is truly a most disgraceful indictment against the decency of the male sex and their sense of righteousness and fair play. All venereal diseases like syphilis and gonorrhea are preventable diseases and therefore should not exist on the earth. Their prevention is so much easier than that of many other preventable diseases. It can be stated in one brief statement, viz: "Let morality prevail." With morality prevailing, the increase of human health and happiness would be so great as to defy calculation. Medical and surgical practice would fall off quite a good deal. Many insane asylums, sanitariums, hospitals for incurables, and schools for imbecile and feeble minded children would be forced out of business. The consumption of beer, whiskey and other liquors would markedly decrease and a certain unnameable class of males and females who fatten off the earnings of immoral women would be wiped out of existence—and nobody would miss them at all. By making it impossible for persons afflicted with venereal diseases to get married until entirely cured the ravages of this class of diseases could be markedly lessened. As I have already stated I believe the law should make it mandatory upon both the male and female to furnish the marriage license clerk, sworn to certificates from reputable physicians as to their respective freedom from venereal diseases before any marriage license could be issued. In regard to venereal diseases it is rather interesting to note that while in the case of other germ diseases everyone who comes in contact with the
cause does not acquire the disease, in these diseases to put yourself in the way of the cause is to get the disease. Sounds rather significant doesn’t it? It looks as if Mother Nature had some very decided views on the subject of morality. I have spoken at some length on the subject of gonorrhea and syphilis and yet I have told you very little about them and the consequences of acquiring them.

Much more could be said about both but still I do not think it necessary to our course of lectures to go any deeper into them. I have given you, I think, a fair knowledge of them suitable to your needs. I might add just this about inherited syphilis. In cases where it does not appear in infancy, it may appear later at puberty or even still later and to those who are acquainted with the particular signs which indicate this hereditary type of the disease the knowledge that it is present is just as plain as if the victim walked around with a sign on him marked “I inherited syphilis from my parents.” Just think over how pleasant this is to a growing child or grown-up. Yes, inherited syphilis may be cured but the treatment is a very long and tedious one.

ANENT FOREIGN BODIES IN THE NASAL FOSSÆ

BY
C. C. MAPES, M.D.
Covington, Ky.

If one were to judge from the examples recorded in medical literature, the conclusion would necessarily follow that the discovery of extraneous articles in the nasal fossæ of either children or adults constituted an exceedingly rare circumstance; whereas, such an observation would really be far from representing the truth, as foreign bodies are quite frequently encountered in the nasal cavities of children, and rather more rarely in adults for reasons which require no elucidation.

Foreign bodies more often than otherwise reach the nasal fossæ through carelessness of the individuals, they are sometimes inserted into the nose in a spirit of playfulness by children, their presence may be due purely to accidents. Particles of food may be forced forward from the naso-pharynx into the nose during a paroxysm of coughing or vomiting, and thus constitute foreign bodies, although such accidents are comparatively infrequent.
Extraneous articles may remain in the nasal fossae for long periods of time without inducing indicative symptoms, and if composed of hard material, such as buttons, cherry-stones, etc., they commonly become incrusted with a thick layer of calcareous matter. In some instances buttons accidentally introduced into the nose remained there for years without the knowledge of the individuals, and were only discovered when the nose was examined to ascertain the cause of a persistent unilateral muco-purulent nasal discharge. More often, however, the foreign body will promptly induce symptoms indicating its presence and contact with the nasal mucous membrane, e.g., irritation, tumefaction, inflammation, and a muco-purulent discharge usually slightly tinged with blood. Indeed, it is almost the invariable rule that a purulent discharge tinged with blood coming from one nostril indicates the presence of a hard foreign body (Peck).

When an irregularly shaped foreign substance becomes incarcerated in the nasal fossa it may be so firmly impacted and fixed in its position that extraction is exceedingly difficult, and under such circumstances serious injury may be inflicted upon the nasal structures unless due care and diligence be exercised in the manipulations incident to attempted removal.

Extraneous articles encountered in the nasal fossae may be divided into two groups, i.e., (a) animate, and (b) inanimate. Among the former may be mentioned worms, flies, leeches, maggots, even centipedes and lizards. The latter consist of buttons, marbles, cherry-stones, beans, peas, coffee-grains, pieces of metal, leather, paper, etc.

When consisting of vegetable matter the warmth and moisture of the nasal cavity cause the foreign body to enlarge to such proportions that sometimes removal is attended with serious difficulties. Metal is ordinarily easily extracted unless it be firmly embedded in the nasal tissues at time of introduction, which infrequently happens since it is rare that foreign bodies of any description are forcibly placed in the nasal fossa.

With respect to the most appropriate treatment of nasal foreign bodies there is little which can be said. It is a well understood axiom that when there exists any extraneous substance in the nasal fossae it should be promptly removed, and the most effective method is extraction by forceps of suitable size and conformation depending upon the location and volume
FOREIGN BODIES IN THE NASAL FOSSÆ

of the foreign body. And in this connection, the old-fashioned practice of frequently douching and spraying with astringent and antiseptic solutions in attempted cure of fetid unilateral nasal discharge under the assumption that the patient suffers from so-called "one-sided catarrh," cannot be too severely condemned, since in the majority of such instances the purulent nasal discharge owes its origin to an impacted and long-resident foreign body. Many such patients have been subjected to the "douche and spray" treatment over considerable periods of time, without adequate investigation having been instituted in the interim to determine the essential factor concerned in production of the nasal discharge, thus not only receiving no benefit from the mis-directed management but the causative factor—the foreign body—remained undiscovered until perhaps as a dernier ressort the patient wisely concluded to apply to some other and more intelligent medical practitioner for examination and much sought relief.

Peck (1) claims that the most effective treatment of nasal foreign bodies is prompt removal with dull-pointed forceps of suitable size, and that extraction should be accomplished upon first withdrawal of the forceps even at the risk of splitting the nasal angle; that the nasal douche which is advocated by good authority, simply "swamps" the nares causing the child to become uncontrollable, and the attempt must be abandoned for the time being; that this is a method which cannot be commended for either promptness or efficacy.

Similar views are also entertained by Breitung (2) who calls attention to the dangers of forcing pus into the ears in these cases by either inflation or syringing the other nostril.

It will be observed from the subjoined extracts of recorded examples, that so far as the literature is concerned, foreign bodies are encountered in the nasal fossa with much less frequency than in other external orifices possessed by the genus homo, e.g., the vagina, the rectum, the urethra, etc.

A boy of six in a spirit of mischief permitted a playmate to insert into his nostril a rough marble. Some force was evidently employed as the mucous membrane was considerably bruised. Swelling and tumefaction promptly occurred in such degree that the foreign body could not be liberated. The following day there was much redness and swelling of the right side of the nose, and the child complained of severe pain on the corresponding side of the face. The marble was so firmly
fixed in the cavity that incision of the alar nasi was necessary before removal could be accomplished.

While at play a boy of five inserted a large bean into his nostril, and when he could not extricate it failed to inform his mother fearing corporeal chastisement. A few days thereafter the bean had swollen to such extent that it could not be extracted until cut in pieces, meanwhile the child suffered considerable pain and discomfort because of the presence of the constantly enlarging foreign body. After removing the bean and thoroughly cleansing the nasal fossa the little patient had no further discomfort.

In another instance a girl of five accidentally inserted a large pea into her nostril, which remained in situ several days before the mother's attention was directed thereto by the child constantly "picking at her nose." The foreign body was extracted with forceps after having been split in two portions. It had become much larger than when introduced because of incarceration in the warm, moist nasal cavity, but its removal was accomplished without serious difficulty.

Peek (l.c.) records five cases where foreign bodies were removed from the nasal fossa of children:

For eighteen months a girl of three had a foul discharge from the left nostril. There was present no pain nor swelling, but the child was unable to breathe through this nostril. Examination revealed therein a rough brownish globular body bathed in pus and solid to the touch of the probe. Considerable hemorrhage attended the manipulations, and it being impossible to make the mother believe there was a foreign body in the child's nose, nothing further was permitted at the time. Treatment by various practitioners for supposed scurvy, ozena, etc., during the next several months produced no improvement, and the child was finally returned to the hospital. The nasal foreign body consisted of an inerusted shoe button which was removed with forceps without serious difficulty.

A girl of eight was brought for treatment by her parents because there was a "black thing" in her nose! Investigation revealed a dark colored foreign body firmly impacted in the right nasal fossa. According to the child's father for three weeks there had been a "dirty discharge" occasionally tinged with blood from the right nostril. The foreign body was extracted with forceps at the first attempt, and was found to be a flat double-eyed rubber button measuring \(\frac{1}{2}\) inch in width by
3-16 inch in thickness so incrusted on its surface especially the flat periphery as to conceal its identity. Withdrawal was followed by free hemorrhage which ceased after a few minutes. Neither the parents nor the child could account for the presence of the foreign body in the nose, which fact together with the coating on the button indicated a residence of several years.

A boy of eight complained of difficulty in breathing through his right nostril, from which there was a constant purulent discharge. Examination revealed an obstruction in the inferior meatus of the right side due to presence of a hard foreign body. It was removed without difficulty with long narrow forceps, and proved to be a large flat horn button which from the incrustation covering it had evidently been exposed to the action of the nasal secretions for a long period. The boy declared that he did not insert the button into his nose, nor could he remember how or when it was introduced. About ten days after extraction of the button the boy died of diphtheria.

A child of three and a half years had a purulent discharge from the right nostril and that side of the nose was edematous and swollen. The mother stated that the child’s nose first seemed sore about eighteen months before, and that recently several physicians after examination had advanced the opinion that “there was a tumor in the nose which eventually would have to be removed by a surgical operation; but as the child’s general health was good and there seemed no constitutional disturbance from its presence, it was advisable to wait until the patient became older before operating!” The offensive purulent discharge being unilateral was suggestive of a foreign body in the nasal fossa, and this was confirmed by introducing a probe which encountered in the inferior meatus a hard substance firmly impacted. With long narrow forceps the foreign body was seized and easily extracted. It proved to be a large flat seed (watermelon?) entirely covered with calcareous deposit.

A girl of two years was brought by her mother with the statement that a wad of paper had been placed in the left nostril by an older child. It lay in the middle meatus nearly an inch from the anterior nares, and a thick mucous discharge came from this nostril. It was easily extracted with small forceps.

Breitung (i.e.) refers to a boy of five who had suffered
three months from loss of appetite and disturbed sleep, and there was a bloody discharge from the nose. The skin over the nose and neighboring part of the cheek was swollen, slightly reddened and sensitive. The upper lip had become excoriated from the purulent discharge. The nostril was completely blocked. Examination revealed a pus-covered mass which was easily removed with forceps, and proved to be a piece of flesh which it was thought must have been forced into the nose some months before during a paroxysm of coughing.

Kahler (3) saw a man of twenty-nine who complained of difficulty in breathing through the nose. Several years previously a plastic operation to cure a defect of the lower part of the nose had been performed at a surgical clinic. It appeared that the patient had a nasal gumma when a child and this had destroyed a great part of the nose, which presented the "saddle" shape seen in syphilitic subjects. Anterior rhinoscopy revealed total absence of the septum nasi and the inferior turbinate bones on both sides. A hard white substance was embedded in the floor of the nasal cavity. After careful cleansing it was recognized as the crown of a tooth. Inspection of the alveolar processes showed the presence of all sixteen teeth, or their broken and carious roots, so the nasal denture was supernumerary. Extraction proved extremely difficult, tooth forceps could not be employed on account of the narrowness of the introitus nasi, which was rendered still more narrow and rigid by the cicatricial tissue. The tooth was finally loosened with an elevator, when the patient suddenly jerked his head, and the tooth disappeared into the esophagus. It was passed from the bowel in three days, during which plenty of potatoes and bread has been eaten. It was most likely a canine tooth. In nearly all the recorded cases, says the author, such anomalous teeth have been associated with congenital syphilis, which perhaps by disturbing normal ossification favors displacement of the dental germs. It is said that this dental anomaly was first recognized by the famous poet Goethe, who was also a very observant man of science, and who mentioned a case of the kind in his "Journey to Switzerland" in 1797.

Gross (4) refers to a nine-year-old boy who had a fetid discharge from the left nostril and which had existed over two years.

There was severe dermatitis about the left nostril and the upper lip. The septum was bent to the right, the left side
of the nose was enlarged but not sensitive to pressure. The right nostril showed nothing pathological. Examination of the left side was difficult and painful. The secretion had a "most terrible stench!" For eleven days treatment consisted of the application of swabs soaked in cocaine and argentum Crede. When it was possible to introduce a speculum an incrusted foreign body was encountered. Under chloroform with a curette the rhinolith was brought out, hemorrhage being controlled by cotton tampons saturated with hydrogen peroxide. The rhinolith was the size of a hazelnut and proved to be an incrusted shoe button which the boy admitted having inserted into his nose four years previously!*

Foster (5) successfully removed thirty-five Texas screw worms from the nose of a man seventy-two. The nose, eyes, and face were badly swollen, there was bloody and offensive discharge from the nose, with excruciating frontal headache. The worms could be observed on anterior rhinoscopic examination, but the majority had lodged in the posterior nares. The middle turbinate had been injured and the hard palate perforated. The nares were first irrigated with a mixture of alcohol and water, then chloroform was directly applied by means of cotton applicacors; this dislodged and brought away the worms. Irrigation with hot water afforded great relief. The man was very weak, but under administration of iron and a nutritious diet made a rapid recovery. There was no involvement of the accessory sinuses.

Squires (6) cites a curious instance of severe hemorrhage resulting from the unsuspected presence of a foreign body in the nose. A man of fifty awoke at night and found blood trickling down his neck from the anterior nares. The usual home treatment for epistaxis proving ineffectual after a few hours, a physician was called who plugged the anterior nares, and a little later the posterior nares. Hemorrhage continued being only partially controlled by plugging for forty-eight hours when the patient was so exsanguinated as to be unable to raise his head. He was partially blind and suffered great nausea and thirst. Supporting treatment was instituted but the plugging had to be continued for ten days, hemorrhage starting profusely whenever for the purpose of cleanliness it was neces-

*This author like the majority of others who have expressed an opinion on the subject believes that every foreign body as soon as diagnosed should be removed, and that every unilateral fetid nasal discharge in children indicates the presence of a foreign body. C. C. M.
sary to change the plugs. For two months there occurred occasional slight attacks of epistaxis, they then ceased entirely and the patient gradually recovered his health. Four months thereafter the patient found a sharp point protruding from the side of his nose; with a pair of tweezers a rusty piece of needle about an inch in length was removed, affording an explanation of the previous severe hemorrhage.

Keng (7) mentions a Japanese workman who was brought to him with the history that three months before he bathed in a pond, and while doing so suddenly felt something slipping into one of his nostrils which he made an effort to remove but failed. On looking into the slightly swollen left nostril a black mass was observed projecting from the superior meatus. A cup of water was held to the nostril and in a short time the tail of a leech protruded from the nostril and wiggled about in the water. The tail was seized with forceps and the nostril douched with permanganate of potassium solution, but the effect was only to cause the creature to contract more firmly, so another method had to be tried. The patient was accordingly given some chloroform to inhale, a procedure which proved effectual, and in a few minutes the leech with forceps attached dropped to the floor. During the three months the leech had remained in his nose the man lost a large quantity of blood, and weakness was such that he was barely able to stagger into the author's surgery. There is no doubt had the leech not been extracted a fatal result would soon have ensued.

Hunt (8) presents an interesting dissertation on the treatment of foreign bodies in the nose, and concludes:

(a) In all cases of discharge from the nose (especially if fetid and unilateral) cleanse the cavities thoroughly by means of sprays, syringing, or forceps, as the preliminary step.

(b) Examine the nasal fossa carefully by means of speculum and mirror. It is not sufficient to elevate the tip of the nose with the thumb and look in. If no nasal speculum is at hand, extemporize one by bending a common hair pin about an inch from its rounded end.

(c) After detecting the foreign body, do not attempt to remove it by douching through the opposite nostril, as there is danger of the fluid entering the middle ear by the damming back of the current in the obstructed side.

(d) Where the foreign body presents a sharp edge, extraction is best managed by forceps. A rounded body, espe-
cially when covered by mucus, will probably slip from the grasp of the forceps,—it is best removed by passing a bent probe or scoop behind it and pulling it forward.

(e) The skilful use of the forceps or probe in this connection is even less objectionable than the “pinch of snuff” treatment.

(f) Cocaine is of great value not only in producing local anesthesia but in contracting the spongy tissues over the turbinated bones, thus facilitating examination and extraction.

Gould & Pyle (9) collected a number of interesting examples from the older literature: Zacutus Lusitanus tells of a person who died within two days from the effects of a leech which was inadvertently introduced into the nasal fossa; and there is recorded a somewhat similar instance wherein a military pharmacist drank some water from a pitcher, and about half an hour thereafter exhibited persistent hemorrhage from the nose. Emaciation progressively continued although his appetite was normal, and three physicians called in consultation prescribed bleeding which proved of no avail. Three weeks afterward he carried into his nostril a tampon of lint saturated with an astringent solution, and the next day on blowing his nose expelled from his right nostril a body which he recognized as a leech.

Healy gives the history of four cases in which leeches were removed from the mouth and posterior nares of persons who had for some days previously been drinking turbid water; Sinclair also mentions the removal of a leech from the posterior nares.

In some of the tropical countries it is said there are certain flies which crawl into the nostrils of the inhabitants and there deposit their eggs; that the larvæ develop and multiply with great rapidity, and sometimes gain admission to the frontal sinus causing intense headache, and even death.

Dempster reports an instance of the lodgment of numerous live maggots within the nasal fossæ, causing sloughing of the palate and other complications.

Nicholson mentions an example where there occurred ulceration and abscess of the nostrils and face from which maggots were discharged. Jarvis gives the history of a strange and repeated hemorrhage from the nose and adjacent parts that was found to be due to maggots from the ova of a fly.
which had been deposited in the nose while the patient was asleep.

Tomlinson gives an example in which maggots traversed the Eustachian tube, some being picked out of the nostrils, while others were "coughed up!"

Packard records the accidental entrance of a centipede into the nostril. There is an account of a native who was admitted to the Madras Hospital saying that a small lizard had crawled into his nose. It is said that the urine of these little animals is very irritating, blistering any surface it touches. Despite vigorous treatment the patient died in consequence of the entrance of this creature into his nasal fossa.

Some of the older writers also recorded instances in which a pea remained in the nose for such a length of time as to present evidences of sprouting. The Ephemerides gives an account of this kind, and Breschet cites the history of a young boy who introduced a pea into his nostril; in three days it had swollen to such extent as to fill the whole passage. It could not be extracted by an instrument, so "tobacco" snuff was used, which excited sneezing and the pea was ejected!

Vidal and the Ephemerides cite several instances of tolerance of foreign bodies in the nasal fossae for from twenty to twenty-five years. Wiesman refers to a rhinolith composed of a cherry-stone enveloped in chalk removed from the nose after a sojourn of sixty years, with intense ozena as a consequence of its lodgment.

Waring mentions the case of a housemaid who carried a rhinolith with a nucleus of cherry-stone which had been introduced twenty-seven years before, and which for twenty-five years had caused no symptoms.

Grove describes a necrosed inferior turbinate bone, to which was attached a coffee-grain which had been retained in the nostril for twenty years.

Hickman refers to an example where a steel ring for thirteen and a half years had been impacted in the nasopharyngeal fossa. It was detected by the rhinoscope and removed.

Parker speaks of a "gunbreach bolt" which was removed from the nose after five years lodgment, and Major mentions removal of a foreign body from the nasal fossa seven years after its introduction. Character of the extraneous substance not stated.

Howard removed a large thimble from the posterior nares.
which had remained in its position for "some time" undetected, and Eve cites a case in which a thimble was impacted in the right posterior nares.

Gadzar speaks of persistent neuralgia of one-half the face, caused by a foreign body in the nose. The obstruction was removed after seven years incarceration, and the neuralgia disappeared.

Moliner has an observation on the extraction of a fragment of knife blade which had remained four years in the nasal fossa, where the blade had broken off during an altercation. (G. & P.)

In this connection, a broken nose is not a very uncommon occurrence, but separation of the entire upper jaw from the skull happens less frequently. Hopkins (10) speaks of a man forty-nine who was struck by a wooden beam on the back of the head and knocked forward against a coal truck in such manner that the edge caught him at the root of the nose. The nasal and zygomatic processes were fractured, the superior maxillary bones both detached, and there was separation of the middle line of more than an inch. The frontal sinus and anterior ethmoidal cells were opened, but the eyes escaped injury. The parts were kept in good position by a gag which was worn continuously for a fortnight.

LITERATURE

(5) Foster: Medical Record.
(6) Squires: Medical Record.

THE VALUE OF MASSAGE IN THE TREATMENT OF VARIOUS DISORDERS IN CHILDREN*

BY

JOHN PHILLIPS, M.B.,
Assistant Professor of Medicine, Western Reserve University,
Cleveland, Ohio.

The purpose of this paper is to call attention to the value of massage in the treatment of malnutrition, rickets, and various other disorders in children. In adults we have recourse to this form of treatment in affections of the heart; in conditions

of malnutrition, with flabby muscles, as in the various types of anemia; in convalescence from acute diseases, operations, or parturition; in the treatment of sprains and fractures; in affections of the joints, muscles, and nerves; and in constipation. In children, however, this valuable therapeutic measure has been largely neglected, and yet the results obtained in the majority of cases are better than in the adult. The operator must not only be patient and skilful, but should also have had considerable experience in the nursing care of children. The latter I have found exceedingly important, and I have been fortunate in having had for this work a trained nurse who had several years' experience in the nursing of children before taking up the study of massage.

Many observers have noted the fact that babies in hospitals, but especially in foundling asylums, do not thrive as well after they have reached a certain period in convalescence from acute illness as they do under less favorable circumstances in their own homes. The reason for this is not difficult to determine. In the majority of hospitals the baby is left in the cot all day, often with the bedclothes tucked in so snugly that the movements of the arms and legs are greatly impeded, the respiration and circulation are sluggish, so that he will not thrive so well as if he were picked up at the times of nursing and allowed to move his arms and legs more freely. In some hospitals this "mothering" of babies is considered an essential part of treatment but usually the inadequate number of nurses prevents it being properly carried out. For babies convalescing from illness in hospitals or homes, or cases of malnutrition, massage is of great value, and excellent results have been reported by MacPhail.

Massage mechanically excites the vessels to action, hastening the circulation and emptying the lymph vessels. Thus the nourishment of the muscle cells is improved by forcing out the waste products and keeping them bathed in a constantly renewed stream of arterial blood. The rate of the heart beat and respiration are slightly accelerated. In fact all the bodily functions are stimulated to increased activity.

The question might well be asked: "Do children not object to this form of treatment?" This depends largely upon the personality of the masseuse, but in my experience, after the first treatment, the child seems to enjoy the manipulation.

The duration of the treatment should not be more than
twenty or thirty minutes, and during the first two weeks should be given daily. Subsequent to this three times a week is sufficient.

It is in cases of malnutrition, with loss of appetite, weak, flabby muscles, and distinct pallor that the best results are noted. This is best illustrated by the following case:

M. M., aged twenty-two months, came under observation in July, 1910, and at that time weighed thirteen pounds and eleven ounces. She has been nursed until six months old, and was then given modified milk. At one year she weighed twenty-one pounds. During the next five months her weight remained about the same; her diet consisted of milk, orange juice, cereal, soft egg, broth, and junket, and she showed some growing disinclination to eat. Dentition was normal, and at fourteen months she began to walk. From the seventeenth to the twenty-second month the appetite grew less until she took less than ten ounces of food in twenty-four hours. Her physician made various changes in her diet without any benefit. During the last two weeks before I saw her she had been fed on oatmeal water, but of this she took only a small quantity. As soon as food was offered to her she would “gag” and attempt to vomit. Her face became drawn so that she looked like a withered old woman; she was pale and emaciated and muscles flabby, and there was some edema of feet and hands. The case was considered to be one of anorexia nervosa. During the first six weeks feeding with a catheter was resorted to, using a formula of three parts milk and one part water, and during that time she gained steadily, weighing fifteen pounds and two ounces. She then began to take her milk herself, and by November 10 weighed nineteen pounds and four ounces. She then contracted a severe bronchitis, with high temperature, and gradually lost weight until December 5, when she weighed sixteen pounds and twelve ounces. She took her food poorly, and there was considerable undigested fat in the stools, so that the percentage of fat in her milk was reduced to 2. During the next five weeks there was no gain in weight; her muscles became more flabby, massage was started. She at once showed improvement, so that at the end of one month she weighed nineteen pounds and thirteen ounces, a gain of three pounds and one ounce. During the next month she gained four pounds, her muscles became firm, she lost her irritability, and
from that time on she thrived, so that now at four years she weighs forty-one pounds.

In another patient, aged ten months, in whom the weight had been stationary for two months, the muscles flabby, and an anemia present, so that the red blood corpuscles numbered 3,900,000 and hemoglobin 60 per cent., massage was started without making any change in diet. During the first month there was an increase in weight from sixteen pounds and two ounces, to eighteen pounds and twelve ounces, and at one year she weighed twenty pounds and twelve ounces. The red corpuscles at that time numbered 4,850,000, and the hemoglobin was 90 per cent. The most noticeable thing in this case was the increase in the amount of food taken within three days after massage was started.

Great benefit is obtained in the treatment of rickets from massage. In these cases the muscles are flabby, the circulation is sluggish, and the extremities emaciated. Because of the weakened condition the child takes no exercise, and with massage properly given the muscles become firm, the circulation is improved, and the extremities become stronger, so that the child itself will take more exercise. Furthermore, many of the deformities, such as bowing of the legs, can be prevented or corrected.

By massage combined with other exercises I have also seen complete correction of the deformity due to scoliosis before there was little or any change in the vertebrae.

In poliomyelitis after the acute stage has passed, massage has been used with such marked benefit that it is now looked upon as the most important therapeutic measure available for the treatment of the paralyzed muscles. I should like to call attention to its use in the prevention of the spastic contractions in cases of polioencephalitis or other conditions in which there is upper neurone destruction. The following case illustrates this very well:

K. B., aged five years and nine months, first came under observation in September, 1908. At that time, when she was eighteen months old, she had a severe attack of polioencephalities, with right-sided convulsive twitchings, which kept up for twelve hours, and a temperature of 104 degrees. The next day she had complete hemiplegia of the right side, with aphasia. During the next four days the temperature gradually returned to normal, but the aphasia and hemiplegia persisted. At the
end of two weeks, as soon as the sensitiveness of the right arm and leg would permit, massage was started, and has since been continued every morning until the present time, by the mother, who after the first two weeks of treatment learned to give it herself. There was steady improvement, so that at the end of four months she could walk, and there has never been any evidence of spasticity in the right arm and leg. At the present time, with the exception of some of the finer movements of the fingers, she can use the right arm as well as the left, and both the right arm and right leg measure a trifle more than the left.

For a long time massage has been regarded as a useful therapeutic agent in constipation in adults, but seldom do physicians resort to it in children. From a thorough trial I am convinced that it is just as useful in children as it is in adults.

Another group of cases in which massage is useful is in nervous children. Much can be accomplished by putting them to bed, carefully supervising the diet, and resorting to massage to keep up the nutrition. It is astonishing to see the improvement in a period of two weeks.

In cardiac lesions in children the result of acute rheumatism the necessity of keeping these cases at rest for many weeks and months, in order to allow the heart muscle to regain its tone, is imperative. These patients will get up much stronger if after the febrile period has passed they are given massage, with first passive and then resisted movements.

Many other conditions might be mentioned where massage is useful, but in general the indications for its use are the same as in the adult, and the results are equally as good.

BANQUET TO DR. WILLIAM J. ROBINSON.

Over two hundred physicians, writers, editors and others prominent in the life of the city assembled at the Hotel St. Denis, Friday, March 7th, at the banquet tendered to Dr. William J. Robinson by his friends and admirers, in recognition of his work as physician, editor, writer, lecturer, and publicist, and in celebration of the tenth anniversary of the foundation of one of his journals, The Critic and Guide. Dr. A. Jacobi, President of the American Medical Association, acted as toastmaster, and in his usual happy vein told that he read The Critic and Guide as religiously as a religious man reads his Bible and that he hoped he would be able to read it for fifty years more. Letters and telegrams were read from physicians and editors in many other cities.
The Results of Recent Researches Into the Etiology of Measles. Dr. Jerome S. Leopold read this paper. For many years it was believed that the virus of measles was present in the blood and nasal and buccal discharges of infected individuals. As far back as 1758 the first attempt was made to inoculate measles. Conclusive proof of its possibility was furnished a century later by Mayr, who was able to produce measles by inoculation with the blood and secretions from the nose and mouth of cases of measles, and showed that the "scales" from a desquamating patient were not infective. The attempts at transmission of the disease by Chavigny and Josias in 1898 by placing monkeys in contact with those having the disease were not successful. The first important modern advance in transmission was made by Hektoen in 1905, who demonstrated that the virus of measles is present in the blood at least during the early stages of the disease. In 1910 Anderson and Goldberger by inoculating blood from patients with measles were able to produce temperature in two Rhesus monkeys and temperature and fine scaling in another; this latter was considered a slight attack of measles. Failure in the first two was probably due to the fact that the blood from the measles cases was not taken early enough in the course of the disease, for further experiments demonstrated that infectivity of the blood was greatest shortly before the eruption of measles appeared, lasted for about 24 hours and then rapidly diminished. Hektoen obtained positive results in man 30 hours after the eruption appeared which may be due to the fact that man is more susceptible to the transmission of measles than monkeys. He and Eggers furthermore showed that the blood picture of experimental measles is similar to that of human measles. Lucas and Prizer first observed typical Koplik spots in experimental measles in monkeys besides all the other symptoms. Anderson and Goldberger obtained positive results by applying the discharges from nose and mouth of measles cases,
24 hours after the first appearance of the eruption, to the mouth and pharynx of monkeys and by injection. Three attempts were made by the same authors to inoculate monkeys with the epidermal scales of measles cases, all results were negative. They demonstrated that the virus belongs to the ultra-microscopic group passing through a Berkefeld filter and that dessication is resisted for 24 hours; it is destroyed by heating to 55° C for 15 minutes; freezing is resisted 25 hours; at attempts to grow the virus were unsuccessful. Aaronson and Sommerfeld observed that the toxicity of the urine was much increased, 2 cc. of it injected intramuscularly into a guinea pig immediately produced symptoms of anaphylactic shock. The urine of patients ill with "serum disease" or so-called fourth disease showed the same toxicity. The urine from cases of scarlet, tuberculosis, pertussis, typhoid and healthy individuals showed no such toxicity. In conclusion be it said that measles can be experimentally produced in monkeys, that the virus of measles is present in the blood, nasal and buccal secretions of infected individuals and that the virus has not been demonstrated in the scales.

The Treatment of Scarlet Fever With Intravenous Injections of Salvarsan. (Preliminary Report). This paper was written by Drs. Louis Fischer and Matthias Nicoll and read by the former. The presence of a positive Wasserrmann reaction in many cases of scarlet fever, induced the authors to try neosalvarsan as a specific in this disease as well as in syphilis and allied infections of the spirillum group. Previous investigators described decided antipyretic effect, exfoliation of the necrotic membrane and a tendency towards convalescence with the absence of fatal complications after the use of salvarsan. To test the efficacy of arsenic alone Fowler's solution was given,—without result. The simplicity of the preparation of neosalvarsan is in decided contrast to that of salvarsan. Arseno-benzol is the active agent. For intravenous injection 20 ccm. of freshly distilled water to 0.1 g. neosalvarsan was used, or 0.9 g. is dissolved in 180 cem. of water. 0.6 g. salvarsan is equivalent to 0.9 g. of neo-salvarsan. Lusch found that intravenous injection of salvarsan into animals infected with streptococcus or staphylococcus pyogenes either arrested or greatly retarded the process. Positive deductions in man cannot be made until a large number of cases have verified a few clinical observations. In four cases of suppurative phlegmonous pro-
cesses the fever subsided and the affected parts restored in a satisfactory way. Salvarsan may therefore in the future be employed with success against infections other than those produced by the spirillium group. The five cases of scarlet chosen for injection were septic with fatal prognosis. The Wasserman in one of these was probably positive, in all the rest negative. All the injections were given intravenously. Where the basilic vein was very small it had to be exposed. The unexposed jugular vein used in the last two cases offered the best means of introducing the remedy owing to its size and accessibility. The dose was 0.2 g. dissolved in 40 cc. of plain sterile water. Case I. Nine years, ill 14 days before admission to the hospital. Temp. 103°-104°, pulse 110-160. Large suppurating cervical glands with extensive necrosis and sloughing. Became delirious and prognosis fatal. Injection given on fifth day, had antipyretic effect and child died on following day. Case II. One and a half years old. Ill nine days before admission. Severe septic scarlet fever. Constant stimulation necessary. Temp. 104°, pulse 160-180. Injection given on seventh day, temp. dropped to 100° on following day and then rose gradually, child died six days after injection. Case III. 9½ years old. Ill two days before admission. Septic scarlet with gangrene of the right foot, prognosis fatal. Injection given and general condition improved and it is but fair to state that the improvement followed the injection of the drug. The foot was amputated after the line of demarcation had formed. Case IV. Three years old. Septic scarlet with extensive noma. Injection gave no apparent result, child died second day after injection. Case V. Three and a half years old. Extensive noma. A drop of two degrees in the temperature after the injection. The prognosis grave, the child still being in the hospital. The speaker said it would hardly be fair to draw conclusions from such a small series of cases. However, in making them, a few points are worth nothing. It was necessary to expose median basilic vein in infants. No systemic shock or disturbance followed the injection. The treatment merits an extensive trial. Whether or no anti-toxin inhibits the action of neosalvarsan cannot at present be stated. Acknowledgement for service were made to Drs. Sexton, McDonald, and Bettinger of the Willard Parker Hospital for their kind co-operation in the study of these cases.
Recent Investigations Into The Antitoxin Content of the Blood in Cases of Diphtheria at Different Times, by Dr. William H. Park—Four of the laborers of the Laboratory were injected and the antitoxin content of their blood followed hour by hour and day by day. Our ideas of how to give the antitoxin must be formed from these experiments. An individual of 125 lbs. given 10,000 units shows in three hours 0.1 unit antitoxin to 1 c.e. of blood, in 24 hours, 0.75 units in 47 hours, 1.6 units, the third day a little rise and the fourth day the same amount as in 48 hours. These figures show that at first there is an increase to the second day and then decreases, with a fall to \( \frac{1}{4} \) unit at the end of one week and practical disappearance at the end of two. What is produced is lasting, what is injected disappears in about 10 days. All the experiments showed that the antitoxin began to be made in 24 hours. Intravenous injection acted immediately, and had ten times the effect that a subcutaneous one had. The accumulation in the first hours is a hundred fold that in the late hours. Then a gradual diminution sets in. Why the same injection did not always give the same results we do not know. Reports have appeared in recent journals on concentrated and non-concentrated antitoxin and absorption time, and our experiments with rabbits showed that one is not less rapidly absorbed than the other. The antitoxin is refined by the elimination of proteid. There is very little toxin in an individual case of diphtheria, probably five to ten times the fatal dose in all the tissues of the body. Most cases have blood already feebly antitoxic. The quantity of antitoxin we gave is not so much for neutralizing the toxins as it is to press out the toxins from the system. A large single initial dose should be given, for, after 12 to 24 hours there is very little free toxin left and the second dose cannot do much good. Numerous experiments have shown that if an intravenous injection of toxins is followed in a few minutes by injection of antitoxins, a small number of the animals are saved, but if given two hours, ten minutes later, none of the animals were saved. In malignant cases a very large initial dose may save. It also has a more rapid effect on the membrane. Two questions were asked, average dose and anaphylaxis to which Dr. Park replied that in mild cases 3,000 to 5,000 units were given; in moderately severe cases 10,000; in very bad cases 20,000 to 30,000 intravenously. As to anaphylaxis, the refining of the serum has much to do with it. No
bad results have been noticed from second injections. Personally the speaker said he would not hesitate to give an immunizing dose no matter when a previous injection had been given.

A consideration of the differentiation of the erythema of scarlet fever and that of German Measles. Diagnosis. Unpleasant complications following Inaccurate opinions. Dr. S. Dana Hubbard.

The doctor pointed to the difficulty of accurately diagnosing the onset of either of these two diseases, and said there was no condition which so indelibly impressed itself upon the diagnostician as his weakness in these trying moments when time is all important. The members of the profession were asked to relegate the term scarlatina as a descriptive term for something approaching scarlet or very mild scarlet to oblivion as frequently by the use of such phrase the family was lured into false hopes and deceptive conditions. At the onset scarlet can assume more disguises than almost any other disease, presenting oftentimes a wide range of conditions with many differing clinical pictures. The very multiplicity of conditions should mark this disease for special consideration above all others. It should be prominently in our minds when called in to see a child with a rash. The speaker has seen sore throats with negative initial cultures, where no rash was observed for days, show desquamation in two or three weeks time. An invariable rule in the Dept. of Health is to follow up cases of negative diphtheria to see if they do not peel in a few weeks time. It is not the case that very mild cases do not amount to much. Very severe scarlet in other individuals has followed several mild scarlet unrecognized and untreated is most often the in a child until it has had at least 48 hours of development unless associated clinical symptoms make the diagnosis clear. A mild scarlet unrecognized and untreated is more often the commencement of an epidemic, it is frequently the cause of lesions in the patient which last throughout life, deforming and disfiguring. Classical scarlet is ushered in with sudden vomiting or nausea, weakness, headache, sore throat, facial redness, quick and high tension pulse, tongue coated as with skimmed milk, enlarged and tender glands in neck, a general pink erythema, the scarlet mask almost positive in its significance, the strawberry tongue. But all the cases do not appear so well outlined. These symptoms vary in degree and in sequence and
in some cases many of them do not appear at all. Our natures differ. Some will express quickly while others will as readily suppress. Individual symptoms are variable. Scarlet in certain epidemics will assume one role and in another epidemic or locality will assume another role which adds to the confusion. The diagnosis must not be made on the rash alone. It may be intense, faint, universal, localized smooth, uneven, uniform in distribution or in groups, erythematous or ecchymotic, a few hours or a week in duration. It never appears on the face. Appears quickly, subsides slowly. Itching most intense in the area where miliaria develops. The rash never starts to desquamate on the day of subsidence, but on the 12th to the 24th day of the disease and it takes from 35 to 50 days to complete the work. The peeling is not characteristic. In those cases in which there is no peeling by the 21st day the diagnosis has been in error. As regards German measles the speaker could not impress too strongly the care that should guard every opinion expressed before it is fully confirmed by lengthy observation. Scarlet should always be prominently kept in mind and care and protection of the patient and of others should be as rigid as if the diagnosis were positively scarlet. When compared with scarlet the constitutional symptoms are very slight and the severity and intensity of the rash is in inverse proportion to the constitutional symptoms. Enlarged post cervical glands like a chain of beads early at the onset; they are soft and not tender. There is a non-confluent dark-red (violaceous) rash. The rash is maculate in contrast to scarlet where it is punctate. Onset sudden but not severe. Tongue and pulse not affected. Rash commences about nose and lips while in scarlet it appears first on the neck and about clavicular spaces, with a typical mask, circum oral pallor. There is no vomiting. Rash appears in one part at a time, gradually appears at other parts fading at place of onset. Covers body in about 24 hours. Fades with a brownish red to a light brown shade and disappears leaving no mottling of the skin. Scarlet fades with a yellowish shading leaving the skin more or less injected. Desquamation is furaceous. German measles have no sequela and itching is not present. It is not contagious, simply infectious from onset to termination. It occurs as a rule in epidemics and is much less infectious than ordinary measles. Never observed in infants under one year. One attack as a rule confirms immunity. Incubation variable.
from 5 days to not more than 4 weeks, usually from 14-18 days. Stage of invasion lasts from about a few hours to about two days. Macules are of two types—morbilli and the more severe form with intense eruption resembling scarlet. In concluding, there is no one disease whose control and abolition would confer a greater or more lasting impression upon mankind than the control and abolition of scarlet. Of all the world's scourges of both modern and ancient times there are none that can claim the ravages through death and deformity that will outnumber scarlet. Prompt recognition, practicable segregation, careful and continued isolation with prompt and thorough disinfection with attention to "Carriers" and in a remarkably short time this pest will be under control.

**How Long Are Scarlet Fever Patients to be Isolated and Quarantined?** Dr. L. A. Sexton spoke on the return cases of scarlet. In no condition is it so difficult to affirm that the period of infection is passed. The isolation at the Willard Parker Hospital is continued until the patients are entirely free from nasal pharyngeal and aural discharges. This necessitates extending the isolation period far longer than would otherwise seem practicable, usually 8 to 12 weeks or longer. Case cited in which nasal discharge persisted for 8 months. Better acquaintance with the morbid conditions accompanying scarlet lengthens the quarantine period from year to year. The Sanitary Code requires 35 days, but in the hospital the average is 42 days, which does not, however, prevent a small percentage of return cases. Patients are never permitted to leave the hospital as long as a mucous discharge persists. Nasal discharges often appearing long after the period of quarantine has passed seem to be the source of transmission. That a majority of these cases remain uncomplicated during the regular course of the disease lead to the belief that the infection may remain quiescent for weeks and then become active due to exposure and a subsequent rhinorrhea. During the past three years there have been 16 return cases of scarlet, due in each case to a rhinorrhea in the discharged patient. Only two of the cases showed slight desquamation. Two cases were cited to show that a most virulent type of the disease can be contracted from one that is corruspondingly mild and that in in most of the cases a rhinorrhea or otorrhea is present. There is no authentic proof justifying the old and popular theory that desquamation is infectious, and that it plays any part in the
transmission of the disease. Observations justify the conclusion that so long as nasal and aural discharges exist just so long will the cases be infective.

Present Day Opinions of the Value of the So-Called Inclusion Bodies in Scarlet Fever. Matthias Nicoll, Jr., M.D. From the Research Laboratory, Dept. of Health, N. Y. The inclusion bodies described by Prof. Duhle of Kiel as found in polymorphonuclear leucocytes of scarlet fever blood have since been extensively studied. Duhle thought them pathognomonic of scarlet. Dr. Anna Williams and Dr. Nicoll concluded that while Duhle's claim of specificity for them was not justified since identical findings occurred in a number of other conditions, nevertheless the determination of their presence or absence was of decided value to differentiate scarlet from conditions simulating it. Much has been written on the subject, the greater part not in favor of Duhle's work. Thus Bongartz of Nuremberg found inclusion bodies in 81% of normal blood, and in 91% in cases of scarlet, diphtheria, measles, pertussis, and diarrhea. Glomset showed that by shaking up normal blood the bodies increase in number. Granger and Pole of London conclude that it is impossible to diagnose scarlet fever by blood examination alone. Kolmerand and Kretschmer's findings agreed with those of our author. In the first four or five days of diphtheria, typical inclusion bodies could be found in quite a large percentage of the cases, and after that but seldom. He found inclusions in the majority but not in all cases of scarlet fever in the first few days. During that past winter there have been an unusual number of very mild cases of scarlet and in a small percent, practically negative results were obtained. Conditions which may justifiably be confused with scarlet fever are first, sepsis, due to surgical or accidental traumatism, showing a scarlatiniform eruption and just as there is absolutely no way at present to differentiate scarlet fever from sepsis by clinical symptoms so unfortunately are the blood pictures identical. Serum rashes show no inclusions in the blood, that is, no inclusions which would serve to confuse this disease with scarlet. If such are present in a case of diphtheria to which anti-toxin has been given and during the first five days of the disease, they may be due either to diphtheria or the streptococcus infection associated with it in the throat. Therefore positive findings at this period are of no value. Negative findings practically exclude the presence of scarlet fever. After this period a positive finding should make us very sus-
picious of its existence. Toxic rashes due to other causes than serum, and German measles, show no inclusion. Measles blood is peculiar, no one has shown a blood picture similar to scarlet although there are regularly present in the polymorphonuclears tiny granules which are quite unlike the relatively large masses found in scarlet. In acute follicular tonsilitis examined thus far typical inclusions have been found. Also in streptococcus angina. That these bodies may be found in certain pneumonias, erysipelas, pulmonary tuzerbulosis of an active type, and other conditions is not pertinent to the inquiry regarding their value as a means of different diagnosis between scarlet fever and a disease resembling it, provided that neither is complicated by one of the diseases mentioned. This means of differential diagnosis has been put to a practical and very exhaustive test and has given decided satisfaction. The author cites a case in which the rash was supposed to be due to serum administration 10 days previously, the child was not isolated and two other children in the family died of scarlet. This could have been avoided had a blood examination been made. The finding of typical inclusion bodies in a case resembling scarlet fever before the fourth day of the disease may mean scarlet fever, sepsis or severe streptococcic angina. Negative findings practically exclude the existence of scarlet fever. After this time a positive finding in the case of a scarletiform rash should make one suspect very strongly the existence of a complicated scarlet fever. There is at present no short cut to the diagnosis of scarlet fever. All the clinical symptoms and signs must be taken into consideration in reaching a conclusion and among them the determination of the presence or absence of inclusion bodies in the blood has no unimportant place.

Discussion. Dr Northrup wishes to take one or two exceptions to the remarks of Dr. Hubbard. The latter said that German measles was never a severe disease. This is not so in young adults. I recall a case in such an individual who had a temperature of 104° and delirium, and it took three attendants to control him. I remember a child I treated through genuine measles and then treated for German measles and the whole family was treated for the same condition. The child was as sick with one, as with the other. Dr. Hubbard said that German measles were not contagious. I would like to take exception to that also. The house physician of a contagious disease hos-
hospital visited his sister who was entertaining a party of friends and the whole family came down with German measles. The period of incubation in this case was positively 14 days. We are very glad to hear that desquamation in scarlet fever is not contagious. In hospitals we fear less and less the contagiousness of scarlet fever. We make the diagnosis as soon as possible. I feel that you can quarantine scarlet fever in the ward and I would not hesitate to place a case of diphtheria in one bed and scarlet fever in the adjoining one, and alternate them down in the whole ward. They could be treated successfully so convinced am I that the contagiousness of this disease is limited to sneezing distance. The old bogy of the scales of scarlet being sent in a letter and infecting a friend at a great distance is exploded.

**Dr. Berg:** German measles are quite epidemic. It is easy to make a differential diagnosis of German measles and scarlatina. The essential difference is the enlargement of a chain of glands on the anterior border of the trapezius like a row of beads. These glands are not enlarged in the early stages of scarlet fever. They are not enlarged in measles. Of course we could go through a long description of both diseases but that is the pathognomonic symptom and if you get it you are dealing with German measles.

Dr. Berg did not see the use of treating scarlet with injection of salvarsan. Whenever we obtain a specific for one disease someone will try to treat other diseases with it. When diphtheria anti-toxin first came out some tried to treat cerebrospinal meningitis with it forgetting that if there was no specificity to diphtheria anti-toxin it would be worthless. Those days are gone when a man could get up and say, "Potassium, iodine in my hands given in this and this case gave good results." What is the use of using a specific like salvarsan in the treatment of scarlet fever? The logical reason is that you get a positive Wassermann in scarlet fever and this seems siduculous, forgetting that the patient may have congential syphilis. We must avoid the use of specific remedies for conditions for which they are not specific.

One of the members said that there was one symptom characteristic of German measles which had not been mentioned, namely sweating of the skin. The speaker had found this very pronounced in all of his cases.

**Dr. Sexton:** Noguchi examined 300 to 500 cases of scarlet
fever for Wassermann. Only one case gave the positive test and that child had bullae.

Dr. Hubbard. Some years ago Dr. Northrup studied the effects of cold air treatment on the roofs of the hospitals in these conditions. But will the doctor tell me the mortality. I have heard from others that it is very good, the mortality. I recall the unique case of Philomena K. She was thought to have small-pox after vaccination. But it proved to be a true case of small-pox. The diagnosis of German measles is not easy. Some of the cardinal symptoms are not as prominent as they are in our minds. The enlarged glands may be due to pediculosis. The appearance of the cardinal symptoms and time to study and observe the rash may make the diagnosis of German measles positive, but the doubtful case should be treated as scarlet until it is definitely proven otherwise.

Dr. Sexton wished to call attention to the color of the lesions in German measles. In a good light a violaceous color will be seen, not present in scarlet or measles.

WHAT IS BEING DONE TO LENGTHEN LIFE.

Spreading broadcast knowledge of the dangers that beset babyhood and childhood has already reduced infant mortality.

Smallpox has been almost stamped out.

International campaign against tuberculosis is steadily reducing the death rate from this disease.

Anti-typhoid vaccination, although in its infancy, bids fair to make typhoid fever as rare as smallpox.

World-wide fight against the mosquito is making malaria and yellow fever less common and turning the plague spots of the earth into healthy dwelling places.

Efficient sanitary measures have virtually eliminated cholera and the once dreadful bubonic plague from civilized countries. Such epidemics as those of the Middle Ages are no longer possible.

Asepsis and greater skill in surgery have made death from wounds, either in civil or in military hospitals, rare.

The Pasteur treatment for rabies has almost abolished death from this disease. Since 1886 the Pasteur Institute in Paris has administered the treatment to 33,388 persons, of whom only 128 have died. There has not been a single death in the past two years.

Many cities and states are distributing vaccine and diphtheria anti-toxin free.
RETROSPECT OF CURRENT PEDIATRIC LITERATURE.

Orthopedic Surgery
Under the Charge of
JAMES K. YOUNG, M.D.

Assisted by
A. BRUCE GILL, M.D.
Assist. Surgeon to Widener Memorial Industrial Training School for Cripple Children, Philadelphia.

The Von Pirquet Tuberculin Test and Its Interpretation, By Dillingham, Med. Council, January, 1913. No antiseptics should be used in preparing the arm for the administration of the test. Even soap and water should not be used unless the skin is very dirty. A drop of old tuberculin solution is placed on the arm and another drop about three inches below the first one. A point midway between the two drops is scarified and then the skin is scarified beneath the two drops of tuberculin. A dressing of gauze is held tightly in place by adhesive plaster.

The arm should be observed any time after twenty-four hours. If there is a positive reaction the two scarified spots on which the tuberculin was placed present a red areola which may vary in size, and in intensity of color, while the control spot midway between the two shows no reddening.

A positive reaction means that somewhere in the body there is or has been a tuberculous focus and that the antibodies are present. A marked positive reaction indicates that antibodies or immunizing bodies are present in large quantity, and the prognosis of the case is favorable; for the positive reaction is due to the contact of the tuberculin and the antibodies in the skin at the site of inoculation.

A mild reaction without any pulmonary signs of tuberculosis indicates that the patient has not pulmonary tuberculosis, but has had a focus elsewhere at some time from which the antibodies are still feebly present in the body.

A negative reaction means that there are no antibodies present. This may be due to the fact that there is no tuberculosis in the body or that in the presence of tuberculosis not enough antibodies are being formed to overcome the toxines. In the latter case the prognosis is unfavorable.

Immunizing bodies may be present in the body years after the patient has recovered from an attack of tuberculosis. A positive reaction may be obtained in such cases.

The Treatment of Spondylitis (Pott's Disease) by Bone Grafting (Albee's Operation), with Report of Eight Cases, by RUGH, Monthly Cyclopedia and Med. Bul., February, 1913. Ever since the time of Percival Pott the object of the mechanical treatment of Pott's disease has been to fix the spine, to support the superincumbent weight, and to remove pressure from the bodies of the vertebrae and throw the weight on the posterior portion of the vertebrae by posterior leverage. These objects have been, at least in part, secured by means of plaster casts, and various braces. But even under the favorable circumstances a long time is required to effect a cure, and there is a constant annoyance and expense of casts and braces. Therefore, to shorten the time required to effect a cure and to eliminate the external mechanical apparatus are highly desirable.
In 1891, Hadra recommended wiring together the spinous processes of the diseased vertebrae in order to splint the spine. In 1895 Chipault successfully wired the spinous processes and adjacent laminae together. In 1896 Calot wired spinous processes and also attempted to ankylose adjacent laminae by freshening their edges and bringing them together. In 1902 Lange implanted steel wires at the sides of the transverse processes, later coating the steel with tin to prevent irritation. Next Hibbs produced fusion of the spinous processes by dissecting off the periosteum from the spinous processes and the laminae and breaking the spinous processes at their bases and turning them down, against the adjacent lower vertebrae and then covering them again with the periosteum. This operation is effective and lessens the posterior prominence of the kyphos. About the same time Albee reported a method of fixing the diseased vertebrae together and to the adjacent sound vertebrae by splitting the spinous processes and implanting in the wedge-lime spaces a strip of bone taken from the crest of the tibia. This graft grows solidly into place and forms a bridge of bone from one spinous process to another.

The author reports eight cases that he has operated upon, using Albee's method, one of the cases being an osteitis deformans. The progress of the cases since operation has been satisfactory in every particular. The author applies a plaster jacket for five months after the operation and then a Taylor brace for five or six months longer, while Albee places his patients upon a Bradford frame for six to twelve weeks and then permits them to go about without spinal support.

**The Mechanical Treatment of Hip Disease**, by Geo. B. Packard, Am. Jour. of Orth. Surg., February, 1913. If proper mechanical treatment in addition to hygiene treatment is employed early in hip-joint disease, cure with motion in the joint will often result; and traction, fixation, and protection from weight bearing should be continued as long as there seems to be a possibility of attaining this result.

The author employs traction with the patient recumbent until pain and deformity are relieved and muscle spasm overcome. Following this a long traction brace with a thoracic band and so fitted as to produce twenty degrees of abduction is applied to the child and is used for two or three years. If rigidity and tendency to deformity are then absent a splint is used that prevents weight bearing but allows motion. If it seems impossible to secure cure with motion at this stage a plaster spica is used to prevent deformity and the patient is allowed to bear weight on the hip with the hope of securing ankylosis in good position.

**Diseases of Joints and Bone Marrow**, by Leonard W. Ely, Am. Jour. of Surg., March, 1913. The author considers in general the anatomy, physiology, and pathology of bones and joints of the spine and the extremities. Soft tissues are to be studies; bone tissue proper, marrow, periosteum, cartilage, symovia, and ligament.

Bone tissue proper is composed of lime salts and organic material and serves only a mechanical purpose. Whether in health or disease it is always the same and varies only in amount and in arrangement. It is everywhere, even in its denser portions, penetrated by marrow canals, although spongy bone contains more marrow than compact bone. Bone tissue itself it not subject to inflammation or active disease. It merely reacts to inflammation of its marrows. Both hypertrophy and atrophy are due to the action of the marrow and the periosteum.

There are two kinds of marrow; red, or lymphoid, and yellow, or fatty. The former is to be considered typical marrow, consisting of a connective tissue reticulum filled with cells of many kinds. It is the essential active tissue of the bone that plays the chief part both in physiological and pathological processes of the bones. The
yellow marrow contains much fat and few cells. It is found in the shafts of the long bones of adults, while the red marrow is found in spongy bone in adults and also in the shafts of bones of children.

The periosteum of bone has two layers. The outer layer is fibrous and serves only mechanical purposes as an envelope of the bone. The inner layer is cellular and is closely related to the marrows of the bone. It is thin in adults but thicker in children. Like the marrow, it is concerned in the nourishment and growth of the bone and is subject to the same diseases. It may be regarded as an outer layer of marrow on the bone. The layer of the periosteum is continuous with the ligament of the joints; and the inner layer, with the synovia.

The cartilage of the joints probably plays only a passive role. It derives its nourishment from the marrow beneath it and probably also from the intemol layer of the periosteum on its sides. Disease of the cartilage is not primary, but results from the cutting off of its blood supply by disease of the marrow or synovia.

The capsule of the joints is to be considered as the continuation of the periosteum of the bones, consisting, therefore, of two layers. The outer layer is fibrous and serves only mechanical purposes.

The inner layer is the synovia, which is a lymphoid structure like the marrow of the bones. In its simplest form it consists of a layer of round cells, and there are lymph spaces in the connective tissue beneath it. It is the active tissue of a joint, subject to inflammation and other diseases during which it undergoes proliferation chiefly through proliferation of the small round cells. It thus resembles lymphoid tissue. The synovia does not cover the cartilage of the joint.

Acute arthritis means an inflammation of the synovia of a joint. It may be due to trauma or infection.

In traumatic arthritis the synovia is inflamed and it undergoes proliferation. Serum is poured into the joint. There is pain and limitation of motion. Fluctuation may be elicited. It should be treated by rest (strapping, bandaging, etc.) Sprains, dislocations, and fractures involving the joint produce an arthritio and are to be treated in the customary manner. The spine and the sacro-illiac joints are subject to arthritio, which must be distinguished from humbogo and sciatica which are rare.

A hemophylic joint is really an arthritis of traumatic origin. A sudden, fluctuating, painless swelling of a joint should arouse suspicion of hemophilia. Scurvy may cause hemorrhage beneath the periosteum near the joints. Such a swelling is very painful.

Gout is in reality a form of traumatic arthritio, due to the deposition of urates in the articular cartilage.

The subject of this paper is to be continued by the author.

Diseases of the Respiratory System

Under the Charge of
W. C. HOLLOPETER, A.M., D.D.
Professor of Pediatrics, Medico-Chirurgical College, Philadelphia

Tuberculosis in Children.—E. Pritchard (Practitioner, 1913, xc, 280) says that tuberculosis is the commonest of all diseases to which children are liable. The incidence rate rises from zero at birth to 90 per cent. at the age of fourteen. On the other hand, though tuberculosis is a terribly fatal disease during the first few months of life, the mortality rate among those affected rapidly falls to about 2 per cent. at the end of fourth year. Thus, as far as tuberculosis is concerned,
children may be said to be highly susceptible, but, with the exception of the first two years of life, little liable to fatal results. Tuberculous disease is generally of the human type and conveyed by direct contact or through the medium of the air; the bacilli may enter the system by several routes, and they are ultimately arrested in lymph nodes, the permeability of which to solid matter is impaired, or which otherwise offer a favorably nidus for growth. The diagnosis of tuberculous disease in children must depend on a full consideration of the constitutional symptoms, of the evidence afforded by the specific tests, and of the results of a careful examination of the lymphatic system. Although in early infancy, the gross diagnosis of a tuberculous affection is all important, in later childhood the mere diagnosis of the presence of tubercle is less important than a reliable estimation of the extent to which the tuberculous process is under the control of the natural resources for defence, and the extent to which it is likely to gain a hold on the subject. As far as infancy is concerned, the only satisfactory measure when the environment is known to be one of open infection is to remove the infant from the source of danger. As supplementary prophylactic measures, fresh air, the graduated cold bath, and an ample and varied proteid diet are useful. For older children, the one important measure, apart from the above, is to maintain their strength during the period of debility following measles, whooping-cough, and chicken-pox, and to remove them to convalescent homes in the country.

Antityphoid Vaccination in Children.—F. F. Russell (Jour. A. M. A., 1913, lx, 344) states that no harmful effects have been reported in any of 359 children between the ages of two and sixteen years, inoculated by fifty physicians in the United States, and, so far as known, none has contracted typhoid fever, although some of the vaccinations were made over three years ago. Revaccination in children should be undertaken earlier and oftener than in adults, since children are immunized on a basis of body weight, and consequently should be given a second course of two or three doses when the weight shows a very material increase. In the absence of final information as to the duration of the immunity, we now revaccinate, in any event, after about three years; further experience may show that longer intervals are permissible. One of the most promising fields of usefulness of antityphoid vaccination in civil life is in the protection of youths and young adults, the most susceptible element of the population, against infection.

Pneumococcus Cerebrospinal Meningitis in Infants.—Geo. Dujol (Prog. med., Nov. 30, 1912) says that while meningitis from pneumococcus infection is benign in children over two years of age, in infants it is peculiarly fatal, and often accompanied by cerebral infection. The author details two cases showing these facts. Although this affection in infants is not frequent, it occurs more often than has been supposed. Acute meningitis in infants is predisposed to, according to Netter, by the great vulnerability of the brain, which is badly protected by thin bones, combined with a marked nutritive activity. The germs may enter through the mucous membranes of the nose, throat, or mouth, the conjunctiva, ears, or the umbilicus. They may also be transmitted by the blood from the placenta, by the milk or through the respiratory organs and carried by infection from other patients. This form of meningitis is generally cerebrospinal in its extent, the cerebellum being involved as well. Pneumococcus infection of the brain is frequent in infants affected by heredo-syphilis, tuberculosis, and children of alcoholics. The first thing noted is refusal to eat, with a choryza. A sudden onset with convulsions is frequent. Temperature is high, urine scarce, and pulse rapid. Then some constipation, ocular symptoms, Kernig sign, hyperesthesia, convulsions, and contractures. In the fluid from lumbar puncture
are found pneumococci, a few lymphocytes, many of which are polynuclears. The course of the disease is very rapid and it is almost always fatal. Treatment is of little avail.

Acute Broncho-Pneumonia After Removal of Tonsils.—R. Labbe (Archives Generales de Medicine, Dec., p. 1079).—A healthy child, aged 7 years, had been operated on for adenoids 4 years previously. For about a year he had presented such symptoms as mouth breathing, alteration of voice, and attacks of pharyngitis. On examination the tonsils were found large and incarcerated. It was decided to remove them, and for some time before operation local disinfection was attempted by the application of resorcin dissolved in oil. The evening before operation the tonsils were still large and red, and the rectal temperature was 99.1°. Under kelene anaesthesia a small mass of adenoid tissue was removed from the nasopharynx. Then the tonsils were removed by the morcelleur, their marked incarceration necessitating two applications of the instrument on each side. The right tonsil was purulent. The nose and throat were treated for a few days after the operation with a weak aqueous solution of resorcin.

The patient rapidly became feverish, the temperature being 105.4° 4 hours after the operation. Progress was otherwise satisfactory, and the temperature was 102.1° in the evening, 100° next morning, and 99.3° on the following day, on which he was allowed to get up for an hour. From this period he began to cough, and the evening temperature ranged from 102° to 104°, and was never below 100.3° during the next 13 days. Signs of broncho-pneumonia were observed, and the fever was uninfluenced by tepid baths, electrargol, and antistreptococcic serum. The cough was accompanied by intense dyspnoea. Signs of capillary bronchitis were present with patches of broncho-pneumonia, especially at the right base and left apex. Some sputum obtained on the 11th day contained the pneumococcus in almost pure culture. On the 16th day he was given two doses of 25 cgm. each of cryogenine, and the temperature fell to 100°, and then again rose to range from 102° to 104°. After a few days of marked oscillations an abscess formed in the buttock, which, when opened on the 24th day, contained the pneumococcus in pure culture. The temperature from this point was more moderate, but it continued high and attained 102° for the last time on the 41st day after operation. After a long convalescence recovery followed.

The writer refers to 8 other published cases in which septic or pneumonic complications developed after removal of tonsils. He thinks that direct infection of the lung results from aspiration of a fragment of tissue, or, as was more probable in his own case, blood or pus from an infected focus in the tonsil into the air passages. This danger might be avoided by postponing operation till the temperature is normal, thus avoiding operating on a suppurating tonsil, and by avoiding general anaesthesia. The writer considers that a favorable influence was exerted by the gluteal abscess, which he regards as a strong argument for the production of Fochier's "abscess of fixation."

Epidemic Catarrhal Jaundice.—Leonard Guthrie (British Jour. Child. Dis., 1913, x, 1) reports a small epidemic of catarrhal jaundice in children. There were ten cases in all, and they occurred during a period of three months. Eight cases were in contiguous districts. The children were aged from three to eleven years. In three instances more than one member of the same family were affected. In one family two sisters, in another two sisters and one brother, and in a third a brother and sister became jaundiced between a fortnight to three months of each other. The remaining three cases were sporadic. All the cases showed deep jaundice, clay colored stools, and bilirubinuria. The onset was accompanied by malaise, languor, and slight fever (99 degrees to 100 degrees F.) In several cases vomiting occurred. The duration was from three to
four weeks. Bradycardia was not observed. The liver was enlarged in 6 cases and greatly so in four, in which it extended to within one inch of the umbilicus. The liver began to subside in size on the appearance of bile in the stools, and regained the normal size in from one to two weeks. None of the patients were seriously ill at any time. The condition is probably caused by some common organism capable of giving rise to infective hepatitis. Blockage of the main duct by mechanical causes does not produce so great an enlargement of the liver as occurred in these cases. The influenza bacillus has been designated by some as the cause of the condition. Cockayne refers to the possible analogy with mumps and the metastatic swelling of the testes and pancreas, and there is a possibility that mumps, acute pancreatitis, and hepatitis may be allotrophic forms of the same infection.

**Experiments on the Cultivation of the Virus of Poliomyelitis.**—By Drs. Simon Flexner, and Hideyo Noguchi (Jour. A.M.A., February 1, 1913). It has not been possible to cultivate the virus, or etiologic cause of epidemic poliomyelitis outside the animal body. Dr. Noguchi used the method devised for the cultivation of spirochetes in the attempt to cultivate the virus of poliomyelitis. The results obtained by Dr. Flexner and Dr. Noguchi are of a quite different order from those obtained previously. Tissues obtained from the brain and spinal cords of human beings and from monkeys were used in these experiments. The cultivations have been conducted both with Berkefeld filter and tissues in substance. The culture media consisted, first, of sterile, unfiltered ascitic fluid or of brain extract to which fragments of sterile rabbit kidney and a layer of paraffin oil have been added, and of these plus 2 per cent. nutrient agar-agar in proportion of 1 to 2. The first medium permits a slow growth not visible to the naked eye, the second after several days yield minute colonies clouding the tubes. The cultivations are grown under anaerobic conditions. The minute colonies, according to Flexner and Noguchi, are composed of globoid bodies, averaging in young cultures from 0.15 to 0.3 microns in size. They are stained by Giemsa’s method; and bodies identical in appearance have been demonstrated in the brain and cord by Dr. Noguchi. Inoculation of monkeys from these cultures have caused typical experimental poliomyelitis. The histological findings are characteristic of the disease. Further experiments are being made to exclude the carrying over, with the culture of the globoid bodies, of a quantity of the original virus sufficient to cause paralysis in the inoculated monkeys.

**A Brief Report of an Epidemic of Sore Throat with Involvement of the Cervical Lymph Nodes**—By Dr. John Ruhrah (Amer. Jour. of Dis. of Child, November, 1912). The author finds that streptococci infections may be caused by infected milk, and this disease may be exceedingly severe and attended with numerous complications and fatalities. Even during cold weather milk may be the source of this disease. Raw milk, no matter how carefully handled, may at times be a source of danger. The author believes that milk supplied to cities should be pasteurized, and where by accident the dairy company cannot properly pasteurize its milk, it should be compelled to notify its consumers, so that they can either pasteurize or boil the milk.
Infectious Diseases.

Under the Charge of

ST. GEO. T. GRINNAN, M. D.

Chief of Clinic in Practice of Medicine, Medical College of Virginia; Visiting Pediatrician, Memorial Hospital, Richmond, Va.

Scarlet Fever.—Koessler (Jour. Amer. Med. Assoc., 1912, x. p. 1528), in a review of the aetiology of scarlet fever, acknowledges that the streptococcus has an intimate biological and clinical relation to the disease. This has been proved by (1) the constant presence of the streptococcus in large numbers in the throat and on the tonsils; (2) the frequency with which it is found in the blood during life and in most of the organs after death; (3) the fact that by far the greater majority of complications in the disease and of deaths in scarlet fever are to be attributed to the invasion of this microbe, and (4) the evidence of systemic reaction to the streptococcus by the presence of antibodies in the blood. The author’s researches, however, with the complement-deviation method, using an appropriate antigen, have led him to the conclusion that the streptococcus must be discarded as the aetiological factor of scarlet fever. He finds that the serum of scarlet fever patients contains specific antibodies for an unknown virus, and that this virus seems to be present especially in the cervical lymphatic glands. The experimental transmission of scarlet fever to apes and monkeys also substantiates this statement.—B. J. Children’s Diseases.

Diet in Scarlet Fever.—Mathilde de Biehler (Arch. de med. des enf., Oct., 1912) states that many modern authors have rejected the absolute milk diet in scarlet fever, for the prevention of albuminuria and nephritis. Some have given a mixed diet without meat, while others have allowed meat also. The author’s attention was drawn to the small number of cases of nephritis that she found occurring after scarlatina in the working classes, where it was difficult to get a strict milk diet, and where the child was given pretty much what the rest of the family ate. In ninety-three cases of scarlatina she found eleven of albuminuria, and this disappeared at the end of a few days; there were five cases of nephritis. In families where several children had scarlatina at the same time she had one child take milk alone, and others mixed diet, with or without meat, and compared her results. Among forty-nine children who took milk diet, she observed four instances of passing albuminuria and one of nephritis. Among twenty others who had mixed diet without meat there were no albuminurias and one nephritis. Among persons of the better classes it is difficult to experiment since they are convinced that meat is harmful, but vegetables, eggs, and fruits are welcomed. Of sixty such children on mixed diet without meat eight had albuminuria and two nephritis. Of nineteen on milk alone, three had albuminuria, none nephritis. She concludes that we should not reject the milk diet, but should order it in all severe cases of nephritis. In children in good hygienic surroundings mixed diet without meat seems to do little harm, and it is much more agreeable for the children. The meat diet gives more cases of nephritis than the mixed diet without meat. The author gives milk during the first ten days, and then adds coffee, cocoa, eggs, vegetables, fruits, and bread during the second and third weeks, meat being given only in the fourth week.

Combat Against Tuberculosis Among Children.—Nietner Lancet, Nov. 16, 1912) emphasizes the fact that tuberculosis is a true children’s disease. The lung is probably the usual primary area of infection. In its diagnosis a temperature record is of prime importance and should be taken every two or three hours. The X-Ray is of value,
especially for the detection of bronchial glandular involvement. Tuberculin tests are most useful. As preventive measures, the marriage of tuberculous women should be strongly discouraged and tuberculous mothers should not nurse their children. The only means of isolating tuberculous families which has proven not too expensive in Germany is the construction of one or two family houses. A pure milk supply is of great importance. Traveling tuberculosis exhibitions do much for popular enlightenment. Breast-feeding must be advocated. The baby should be kept away from the infected member of the family. Dangers which must be avoided are the use of the "comforter," the tasting of the first spoonful of food to encourage the child to eat or to test its temperature, the cleaning of the child's face with the parent's handkerchief and saliva, and kissing on the mouth. The danger from tuberculous teachers is probably exaggerated, but both teachers and scholars who eject tubercle bacilli should be excluded from school, pensioning the teachers meanwhile if necessary. A careful examination by the school physician is of the utmost importance and this official should be a whole-time appointee with time to be thorough. The value of a school dentist is recognized in Germany, as 90 per cent. of children have affected teeth. Instruction regarding the prevention of infectious disease, particularly tuberculosis, together with lessons in general hygiene, should form an obligatory part of the school syllabus, and could best be incorporated with teaching in natural science. Such instruction is best administered by the school teachers, who should, however, be trained by the medical profession for this duty. School hygiene should include the furnishing of facilities for frequent shower baths, abolition of the common drinking cup, compulsory eversion of the head and covering of the mouth with a handkerchief when coughing, supply of spittoons, lightening of school work of children who show signs of latent tuberculosis and instruction in separate classes of children with open tuberculosis. The class work must be adjusted to the physical capacity of the children.

Local and General Reaction to Tuberculin in Children.—M. Phu (Arch. de med. des enf., July, 1912) says that for practical, everyday use the von Pirquet method is better than the conjunctival reaction, because the latter may cause an inflammatory condition of the eye. The subcutaneous injection gives rapid absorption and passes quickly into the circulation, but it is not so convenient as the cutaneous and conjunctival reactions. It requires that the temperature should be taken frequently and careful observations made both before and after the injection. The skin reaction is the most harmless, causing no possible local of tuberculosis. The subcutaneous injection is objectionable on account of the fever which it causes, and its dosage is more difficult. In the nursing the tests with tuberculin give uniform results, but do not distinguish between a latent and an active tuberculosis, or between a normal and a slightly pathological condition. Results are uniform up to about four years of age.

Congenital Syphilis.—(Terrien, Babonneix and Dautrelle. Bull. de la Soc. de Pediatrie. December, 1912.) The authors published an interesting case of hereditary syphilis on the father's side, with symptoms analogous to those seen in congenital muscular atrophy. The child was nineteen months old; born at term, breast-fed and able to sit up at seven months, when convulsions began, followed a little later by apparent failure of sight. On examination there was marked muscular atony, so much so that the limbs could be bent in extraordinary ways as though the joints were dislocated; the patient was unable to sit up or to control the head. There was, however, no paralysis, no chronic movements, no fibrillary twitching, no athetosis. The muscles of the eyes, the tongue, and deglutition acted normally. Tendon reflexes were present, but skin reflexes absent; Babinski's sign was elicited. Sensibility seemed to be intact, and there were no vasomotor
symptoms. There was grey atrophy of both papillae, of the post-neurotic type, with marked diminution of vision. The child could not speak and was mentally backward. The electrical reactions showed under excitability of the trapezius and the pectorals, both to galvanism and faradism. No. R. D. Lumbar puncture showed moderate lymphocytosis. There was marked obesity, the spleen was enlarged; the head was large, with projecting frontal bosses, and the anterior fontanelle was open. Wassermann reaction was positive; the teeth were normal.

In view of the obesity, a symptom often associated with disorders of internal secretion, the authors consider that all the phenomena may be explained by a specific lesion of the hypophysis. Injections of iodide brought about a considerable diminution of the atonic phenomena and a marked improvement of vision.

Treatment of Diphtheria Carries by Over-riding with Staphylococcus Aureus.—Lorenz and Ravenel give their results in the treatment of seventeen cases of diphtheria by the staphylococcus spray. Six patients were subjects of active diphtheria, three were carriers pure and simple, never having shown local or constitutional symptoms of the disease. Almost invariably bacteriological culture of the throat secreations was negative after six or eight applications of the spray, using a combined nasal and throat spray at four hour intervals on two succeeding days, the first swab for examination being made on the third day. The preparation used was a fresh suspension of staphylococcus pyogenes aureus in normal saline solution, or a bouillon culture twelve hours old, the spray being kept at a temperature of 96 degrees F. Sufficient is used to make the pharynx dripping wet, and the nasal cavities are sprayed until the liquid runs down the back of the throat. The writer concludes from his experiments that pure cultures of the staphylococcus will cause a disappearance of diphtheria bacilli when sprayed into the throat and nasal cavity. He finds the treatment most effective in those who are carriers pure and simple.
BOOK REVIEWS


This admirable book on Diseases of Children, is the outcome of a systematic course of lectures delivered at the London Hospital and published serially in the Clinical Journal of London.

The work is not intended as an exhaustive treatise on diseases of children, nor to replace any of the admirable text-books heretofore written on the subject. The author's aim has been to simply describe the more common diseases of children with which the student and general practitioner are most frequently brought face to face. The subject is handled from a purely clinical stand point and with little reference to Pathology. However, we are glad to note that the subject of Treatment has been dealt with to some detail. The illustrations are, with one or two exceptions, original, being reproduced from photographs and lantern slides with which the author's lectures were illustrated.

The first chapter deals with the Examination of Sick Children, the Methods of Inspection, Physical Examination, a new chapter on Coeliac Disease, two new chapters on Respiratory Diseases, a new chapter on Hysteria in childhood, Some Disorders of the Heart in childhood, and some of the common affections of the Genitary Urinary System in childhood.

Altogether, it is a very handy, trustworthy, explicit manual of diseases of children. It closes with a very complete index, and we unhesitatingly commend it to the profession.

The Kallikak Family, a Study in the Heredity of Feeble-Mindedness, by Henry Herbert Goddard, Ph.D. Cloth, $1.50 net. The Macmillan Co., New York.

This little book presents a study in the heredity of feeble-mindedness, and is a remarkable book from many points of view. The study of Feeble-Mindedness in this family, is a genuine story of real people. Of course, the name is fictitious, as well as all the names throughout the story. The family itself, proved to be a notorious one, and in this way generations of living people know of them; knew their parents or grand-parents. The reputation of the training school in which much of this history was secured, is thoroughly understood, and worthy of implicit confidence.

The family presents an experiment in heredity. A young man of good family, becomes, through two different women, the ancestor of two lines of descendants, one characterized by thoroughly good respectable citizenship, the other being equally characterized by mental deficiency in every generation. We find, on the good side of the family, prominent persons in all walks of life, on the bad side, obscene paupers, criminals, prostitutes, and other forms of the social pest. The history of this family carefully worked out for the works of the Vineland institution, will be a revelation to many, and especially to those who think that environment is the only or chief determining factor in the shaping of a child's destiny.

The story is an interesting one, from many view points. It is not the idiot nor the lunatic that raises the most serious problem with which society has to contend, but the high grade of mental deficiency, who, under our present laws, are allowed to propagate the species either married or unmarried.
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The book is sold at the modest price of $1.50, and should be read by every one interested in wiping mental deficiency from the earth.

A Treatise on Orthopedic Surgery, by Royal Whitman, M.D., clinical Lecturer and Instructor in Orthopedic surgery in the college of physicians and surgeons of Columbia University, New York; associate surgeon to the Hospital for ruptured and crippled; orthopedic surgeon to the Hospital of St. John's Guild. Member of the Royal College of surgeons of England; member and sometime President of the American Orthopedic Association; Corresponding member of the British Orthopedic Society; member of the New York Surgical Society, etc. Fourth Edition, revised and enlarged, illustrated with six hundred and one engravings. Lea & Febiger, Philadelphia and New York, 1910.

Orthopedic surgery occupies a broad field, and one of very great and general interest. Its most distinctive advance in recent years has been that of prevention rather than cure, an advance which has been made possible by a better understanding of its pathological predisposing and inciting causes. As a consequence, treatment has become more direct, more simple, and more effective. The author especially emphasizes this aspect of the subject. It is of the greatest importance to the practitioner under whose observation, cases of this nature first come, and the future welfare of the case depends largely on his ability to recognize the diseased condition in its incipiency, when its progress may be checked by timely treatment.

That this work has passed through three editions already, and has made the fourth necessary, is conclusive evidence that it fills a want. In this revision, the text has been more thoroughly gone over. A great deal of new material and many new illustrations have been added. In its present form, this work fairly represents the treatment of Orthopedic Surgery as is taught by the leading thinkers and teachers of the present day. Dr. Whitman has endeavored to present the subject of Orthopedic Surgery in a manner to prove acceptable to both students and practitioners, and in this he has succeeded well. The selection of each subject and the space which he has allotted to it has been determined primarily by its relative importance in the actual work of Orthopedic clinics. The author has gone to considerable pains to outline his methods of examination, to explain the phenomenon of the symptoms, and to describe and illustrate the cause and effect of disease, as well as to indicate in natural consequence the principles of treatment and the particular methods of the application of these principles, which are all described in detail, and which are always those which he has previously tested from personal experience. This work will serve as a guide, especially for the student and practitioner of medicine, and as such it is a pleasure to commend it to the profession at large.

Tuberculin in Diagnosis and Treatment, By Francis Marion Pottenger, A.M., M.D., LL.D. Medical Director of the Pottenger Sanatorium for Diseases of the Lungs and Throat, Monrovia, California. 243 pages, royal octavo, 35 illustrations, including one colored plate. Price $3.00. The C. V. Mosby Company, Medical Publishers, St. Louis, Mo.

This volume is the most complete and up-to-date work on tuberculin that has yet appeared. Beginning with the importance of tuberculin tests in the early diagnosis of tuberculosis, the author discusses in detail "Subcutaneous Tuberculin Test," Cutaneous Tuberculin Test," "Tuberculin in Treatment of Tuberculosis," "Hypersensitiveness," "Certain Conditions which have made the Adoption of Tuberculin as a Diagnostic and Therapeutic Measure Difficult," "Evidences of the Therapeutic Value of Tuberculin," "Fever in the Relationship to Tuberculosis," "Temperature Curve in Tuberculosis," "Technic of Administering Tuberculin," and an Appendix, in which is given for the
first time in English Koch's announcement of the discovery of tuberculin.

Dr. Pottenger is qualified to speak on this subject. Two thousand cases of tuberculosis is coming under his personal care in sanatorium practice furnishes the basis for this work. Careful painstaking effort, is everywhere noticeable in this production. The chapters on Importance of the Tuberculin Test in the Early Diagnosis of Tuberculin is especially to be commended, as well as that on Technique of Administering Tuberculin.

There is no doubt but that many failures attending the use of tuberculin in the past have been due to a lack of knowledge of its proper administrating. This defect can be overcome by a careful perusal of this volume and to follow its technique.

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Special Subscription Offer

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EDITORIAL

CASTRATION AND MASTURBATION

The foundations of the modern social structure, the maintenance of the family, and the continuance of human life rest on the integrity of the sexual instinct. Its perversion and its misuse are the most virulent factors in the disintegration of the individual and the race. Practically all the lower animals with penile generative organs masturbate, and it is not to be wondered at that the human child soon learns that pleasure can be found in genital titillation.

Fortunately for most the habit of masturbation is practiced in moderation and when years of reason and control are reached either abandoned or only occasionally indulged in.

For the few, however, it proves a curse and in the case of children the pertinent question arises—What is to be done?—We desire, however, to limit the discussion to the subject of masturbation and its treatment in young girls.

As to the causation of the habit it is a deplorable fact that many of these small children have been taught the habit by older persons and it has been practiced in secret until the extreme nervousness of the child has attracted the attention of the parents. Many again learn quite by accident of their anatomical peculiarities and in still others, retained smegma is the cause.

Shall clitoridectomy be recommended as a routine procedure? Those who maintain that after all other methods have failed this operation is advisable must be keenly alive to the fact that the means of gratification of the sense impression is not resident in the clitoris alone but is present in the adjacent structures. In adult women we find that stimulation of the urethra is a favorite mode of sexual gratification and the liter-
EDITORIAL

ature of gynecology has its collection of cystic treasures that
defies imagination. The psychical side is also well developed in
these selfsame adults; but these factors are usually absent in
the child and thus augur certain promise for success in the
simple operation of clitoridectomy.

We bring up this question in the hope that our many sub-
scribers will write us about their experiences; in return we
would present a digest of these experiences—certainly a very
practical problem in pediatrics.

DANGERS FROM MILK

In an article entitled "Conclusions Based Upon Three
Hundred and Thirty Outbreaks of Infectious Disease Spread
Through the Milk Supply" (American Journal of the Medical
Sciences, Dr. George M. Kober introduces his remarks by
briefly setting forth the possible ways in which milk may be
dangerous to health:

1. Sour milk or milk on the point of souring is liable to
produce gastric and intestinal catarrhs of acute or chronic
character; as an example we have cholera infantum. The
causes of souring are lack of cleanliness and high temperature.
The author quotes Bitter as claiming that milk is unfit for food
which contains over 50,000 bacteria per cc.m. However, as the
number of bacteria can be reduced to from 4,000 to 6,000 per
cc.m. with care the above figure would seem, in our opinion, to
be far too large to willingly put up with.

2. Milk may be unfit for use and cause sickness because
the animals are improperly fed or are being treated with the
mammary gland. The writer states that symptoms of poison-
ing from arsenic, copper, iodine, lead, mercury, tartar emetic,
atropine, colchicum, eroton oil, strychnine, veratrum viride,
etc. have been thus occasioned.

3. Milk may be the product of a diseased animal. The
author states that local diseases of the udder, as garget, which
causes pseudo-diphtheria, as well as general diseases may be
thus conveyed to the consumer. Among general diseases are
"septic fevers, foot-and-mouth disease, cowpox, anthrax,
pleuro-pneumonia, rabies and tetanus."

4. Tuberculosis he considers to be so frequently acquired
from milk as to deserve a separate section.
5. Finally, but by no means least important, milk may acquire specific infective properties after it leaves the udder of the animal. The epidemics discussed in the paper are chiefly epidemics of typhoid, scarlet fever and diphtheria.

To the above headings might be added sophistication with chemicals; those most used at the present time are borax, boracic acid and formalin. Their dangers were discussed some time since in this department.

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**NATURE OF ACNE AND IMPETIGO**

Two diseases of frequent occurrence in the young have a considerable degree of light shed upon their etiology during the past few years. One of these conditions is acne juvenilis, which usually begins slightly in advance of puberty, while the other is the specially contagious form of impetigo, which may occur epidemically, and even endemically, among children. Ever since the discovery of the pyogenic staphylocoecus, it has been claimed that this germ is responsible for the occurrence of these two, among many pustular affections. This statement occurs in most text-books and even an expert authority, such as Payne, of London, one of the very first to study pyogenic coeci, states somewhere that to facilitate the cure of acne it is necessary to keep the scalp thoroughly clean, because the staphylocoecus occurs abundantly as a saprophyte in human dandruff, and it is transferred very readily to the integument of the face by the patient’s fingers. It is difficult to understand how such views ever gained a foothold. Even without bacteriological study, it is readily seen that the suppuration of acne is far from having staphylocoecus qualities. Acne never inoculated—never causes or results from other pustular or purulent lesions. It is not surprising that the staphylocoecus, which is ubiquitous, may often be found in acne lesions or acne pus, but there is every reason for disbelieving that it plays any etiological role in the production of disease. Several years ago Unna claimed he found the true acne germ—a peculiar bacillus—which produces both the comedo and the pustules; but he was unable to cultivate this bacillus. Another observer subsequently held that Unna’s bacillus was allied to the bacillus coli, and only present in acne as saprophyte, the true cause being the staphylocoecus epidermidii albus, which causes the “stich-abscess” of the surgeon. At the latest meeting of the Ameri-
can Dermatological Association, Gilchrist announced that he had conclusively shown that a bacillus (probably that described by Unna) is invariably present in acne, and is in all likelihood the cause of the disease. We have therefore bacteriological as well as clinical evidence that acne has no connection whatever with other pyogenic diseases.

The history of impetigo contagiosa is similar to that of acne. Originally classed as a staphylococcus disease, and still claimed as such by the English, it has gradually been demonstrated that the staphylococcus, while able to cause a variety of impetigo pustule as an accompaniment of boils and sycoesthesia, is only accidentally or secondarily present in impetigo contagiosa. Clinically, the latter affection, like acne, presents none of the qualities of staphylococcus suppuration, while of late years many good investigators have persistently found streptococci in an apparently pathogenetic relationship with this highly contagious affection. Gilchrist (vide supra) is the most recent investigator to declare that a form of streptococcus is the actual cause of the disease. Can it be the ordinary streptococcus pyogenes (which it is said to greatly resemble) in an attenuated form? We believe not, for the rapid passage of the germ through so many children ought from analogy to arouse all the virulence of that somewhat malignant organism. As the streptococcus pyogenes is already held to be responsible for erysipelas, to say nothing or surmise that it may be the active agent in causing scarlatina and even perhaps variola (?), it is manifestly absurd to connect it with so mild and harmless and generally prevalent an affection as impetigo contagiosa.

**ON THE CONSEQUENCES OF "ADENOIDS" IN CHILDREN**

Ever since Meyer first gave to the medical profession his demonstration of post-nasal adenoids, this affection has steadily gained importance in the mind of practitioners until there is a possibility that too much pathological significance has been imputed to it. On the other hand, it is quite possible that "the half has not yet been told." Thus far, it has been claimed that adenoids are the causes of most cases of chronic catarrh in young children, particularly when the accompanying discharge is of a semi-purulent character. The thick viscid mass which protrudes and hangs from the nostrils of so many children is said
to be almost prima facia evidence of adenoids. The agency of these growths in the production of deafness is now well-known to the majority of practitioners, and the same condition may be responsible for false croup. It has been repeatedly claimed that the presence of adenoids in the rapidly-growing child is sufficient to arrest the development of the facial bones, and this produces deformities of the osseous tissues of the septum, palate and superior maxillary. With regard to the effect upon the general health through enforced mouth breathing and defective oxygenation, etc., and the coincident effect upon the physiognomy, the claim has been made in all seriousness that the "serofulous facies and habitus" of the old clinicians are neither more nor less than the characteristic facies and habitus of adenoids. It is the adenoid child who has the irritating nasal discharge which often causes excoriation and thickening of the upper lip, the cervical adenopathy poorly developed thorax, and the rest of the phenomena which make up the picture of scrofula. We shall allude again to the possible connection which may subsist between adenoids and scrofula. There yet remains for consideration an effect of adenoids which may outrank in importance those already mentioned. We refer to the results of this affection upon the mind of the growing child. Nearly all authorities agree in having the belief that adenoids are associated with a certain amount of mental hebetude, and there are numerous theories to account for this phenomenon. Perhaps the oldest view is one which places the responsibility for this symptom upon defective oxygenation. A common-sense view, which is a partial explanation, is the deafness theory, which assumes that the adenoid child is not dull in mind, but merely in hearing. Guyes' well-known study of aprosexia, or want of attention, seeks to reduce the mental hebetude of the adenoid child to inability to concentrate the attention upon the given subject, while his explanation of the phenomenon by a hypothetical obstruction of the lymph drainage of the endocranial cavity has commanded the respect of the practitioner in the absence of anything more definite. Ribot's psychological explanation is, perhaps, more susceptible of demonstration. He holds that since acts of attention are accompanied in all animals by a temporary suspension of the respiratory rhythm, the occluded nose of the adenoid child, with the constantly resulting air-hunger, must necessarily interfere with the psycho-physiology of the act of attention.
THE MODERN METHODS OF TREATMENT OF HEART DISEASE IN CHILDREN*

BY EDMUND CAUTLEY, M.D., CANTAB., F.R.C.P. LONDON.
Senior Physician to the Metropolitan Hospital and to the Belpaot Hospital for Children.

The Opening address in the discussion on the Treatment of Heart Disease at the Royal Society of Medicine, in the Section for the Study of Diseases in Children, on December 13th, 1912.

Reference to the standard works of the past generation on the diseases of children shows that the recognition of the frequency of heart disease in early life is of comparatively recent date. A few cases of endocarditis in childhood were reported in 1843 by Charles West as a positive addition to medical knowledge. Similar cases had been described shortly before this in the treatise by Rilliet & Barthez.

Our modern methods of treatment are a survival, a modification and an improvement on those of the past. They depend more particularly on the differential diagnosis of myocarditis and its effects. Former textbooks barely mention this important action of the heart in childhood. Vogel, Professor of clinical medicine in the University of Dorpat, Russia (1873), states that myocarditis, or molecular degeneration of cardiac muscle, is found in cases of sudden death in diphtheria. He did not recognise it as a complication of acute rheumatism, although endocarditis and pericarditis were described by him as part of this disease. And so little attention did he give to the treatment of heart disease that there is no reference in this book to the treatment of cardiac dilatation.

Meadows and Tanner (1879) dismiss the treatment of hypertrophy and dilatatio cordis in five lines. The main stress is laid on complete rest. Pain and other unusual sensations are relieved by morphia and aconite; and any dyspnoea by digitalis and antispasmodics. Two lines are devoted to the

*Read before the Royal Society of Medicine, Dec. 1912.
statement that "much relief is often experienced by the application of a belladonna plaster over the cardiac area". I fear we have not the same simple faith in the use of such plasters, in so far as their action is supposed to depend on absorption of belladonna by the skin. The treatment recommended for endocarditis is that of the primary cause, viz, rheumatism, scarlet fever, measles or continued fever. Opium, alkaline drinks and hot baths are recommended for rheumatism; and linseed poultices, fomentations of poppy or laudanum, opiates aconite and hydrocyanic acid for endocarditis. Special value is attached to the use of blisters, if the child is not less than five years old. Rest and light nutritious diet are advised, and stimulants are said to be needed occasionally in liberal quantities. In the treatment of pericarditis it is stated that mercurialisation and the use of the lancet have fallen into disuse, the latter being uncertain and often highly dangerous. The measures adopted are those suitable for acute rheumatism, together with blisters, pot. iod. and stimulants, if necessary. According to these writers carditis is "so extremely rare as scarcely to need any consideration". They refer to a case of pericardial effusion which was successfully treated by paraeentesis and the injection of tincture of iodine and potassium iodine.

Charles West (1884), in the seventh edition of his book, remarks that 40 years previously morbus cordis was entirely unnoticed in one standard work on children and dismissed in six lines in the other. His own observations were based on 140 cases:—endocarditis 81, pericarditis 50, dilatation and hypertrophy without valvular disease 9. Myocarditis is not mentioned in so many words, but extension of inflammation from the endocardium and pericardium to the cardiac muscle is recognised; and he describes the condition in association with endocarditis of rheumatic origin, apparently regarding it as simple dilatation. Further, he describes a case of dilated heart, probably due to myocarditis, in the course of severe chorea; and fatal cases of dilatation without coexistent valvular disease, the insufficiency of the valves being due to the dilatation. West recognized that the severity of the illness depends on the degree of dilatation. His treatment was directed to reducing the work of the heart by means of rest, the application of 4-8 leeches over the heart at the onset, and tr. aconiti, m1/2-i, every 15 minutes until the rate of pulse and respiration was reduced. He writes favorably of
mercury and opium, prescribes alkalies, and mentions but had not made a fair trial of salicylates. For pericarditis he advises cupping, leeches, calomel, Dover's powder and mercurial inunction; and is in favour of the use of blisters, or blistering fluid, over the cardiac region after the fever has subsided. Paracentesis is mentioned, there being 8 cases under 12 years of age on record. In the treatment of chronic heart disease he recommends counterirritants, digitalis and iron, with belladonna plaster for palpitation, and diuretics and digitalis for oedema.

In the same year, 1884, Dr. Eustace Smith, the senior living authority in this country on the diseases of children, published the first edition of his classical textbook. He recommends sodium salicylate and a mercurial purge for rheumatic fever, blistering for endocarditis, and iron and quinine if the fever has subsided. He prescribes blistering at the onset of pericarditis, and large doses of pot. iod., e. g. grs. 30 daily at 5 years of age, on the assumption that this drug removes serous effusions. The iodide was not given until the joint pains had subsided. Tartrate of iron was sometimes added. He advises that for chronic valvular disease, giving rise to no trouble, no treatment is needed beyond general care. Active measures are required for palpitations, breathlessness and anaemia. He preferred digitalis in the form of infusion, and recommends drachm doses of the infusions of digitalis, senna and calumba, three times daily. Attention is also paid to diet. For dilatation and oedema he prescribes diuretics and regards the tincture of cantharides, m 30 daily at 9 years of age, as especially valuable. He mentions caffeine as a diuretic, and recommends jalap as a purgative and dry cupping as an aid to diuresis. Stimulants are sometimes needed and Southey's tubes are used for oedema.

Such were the orthodox views on the treatment of cardiac affections in children at the time I began the study of medicine. In comparison with those of the present day the chief improvement, apart from the introduction of a few new drugs, depends on the recognition of the frequency of myocarditis and its effects as the fundamental factor in the majority of cases in children. In this respect our knowledge has advanced and in consequence we have learnt to appreciate the necessity for prolonged rest. Important points for discussion are the limits which should be placed on the duration of rest and the subsequent use of exercises; the value of blistering, leeches and venesection in acute in-
flaunmations and severe dilatation; the use of digitalis and its products; the value of special purgatives and diuretics; and the indications for operative treatment.

To ascertain extent the methods of treatment are modified by age for the child is a very restless animal, its metabolism is active, and the heart is a growing organ. Fortunately the degenerative changes consequent on age, alcohol, syphilis and renal disease are very rare. During periods of rapid development, especially at puberty, cardiac growth may not be proportionate to that of the body and the heart may become functionally incompetent, as indicated by undue frequency of the pulse and shortness of breath. Functional disorders of the heart are comparatively uncommon in children. In many a so-called functional case there is a primary myocardial affection, the result of latent rheumatism or the sequel of some infective disorder. It is apt to follow influenza, is a frequent sequel of diphtheria, and may even ensue on varicella or the common influenza cold. Obviously in such cases successful treatment depends on accurate diagnosis. It is likely to prove unsatisfactory, if slight myocardial mischief is regarded as functional nervous disturbance. And it must be remembered that a cardiac murmur does not always mean valvular defect, nor does the absence of a murmur necessarily exclude serious disease. In applying treatment we must take into consideration the nature of the mischief and the valves affected, if any; the nutritional and functional powers of the cardiac muscle; the idiosyncrasy of the patient and the responsibility of childhood; the environment of the child and the difficulty in securing parental co-operation as soon as the obviously troublesome symptoms have subsided.

Rest is the most important factor in treatment. It is not needed if there is good compensation. Then, it is only necessary to guard against over-strain. The duration of rest depends on the degree of dilatation consequent on myocardial incompetence; and on the existence of endocarditis, myocarditis or pericarditis alone or in combination. It may be impossible to ascertain whether a mitral systolic murmur, associated with cardiac dilatation, is due to endocarditis or to incompetence of the valvular orifice because of dilatation and myocarditis. Rest must be continued for one to three months after all acute symptoms have subsided and compensation has been established. It must be most prolonged in myocarditis. Special care is needed during
rapid growth and at puberty, periods at which cardiac strain must be carefully avoided, if there is the least suspicion of previous mischief or if there is any functional incompetence. It is a mode of treatment easily carried out in young and placid children, and perhaps extremely difficult in excitable vigorous children over ten years of age. A trained nurse is almost invariably essential. In the early stages rest must be absolute and every cause of excitement, such as visitors, new toys and games, must be prohibited. As compensation is acquired rest is gradually replaced by massage, passive and active movements, and exercises. A warning is necessary against the abuse of exercise for children with even well-compensated cardiac disease. The modern craze of flying to Swedish and other exercises has been in my experience responsible for the cardiac breakdown of several children. The heart, weakened by disease, is easily overstrained. Exercise must not cause dyspnoe or anginal pain. For three to twelve months it is limited to walking on hard ground and is then increased successively by minor gymnastics, hill climbing, bicycling on the level and appropriate games.

Baths, saline and carbonated, such as given at Nauheim and also in this country, and electrotherapeutic methods of treatment are perhaps unnecessary in childhood. Baths stimulate the cutaneous nerves, dilate the capillaries of the skin and slow the action of the heart, exciting more vigorous action, and diminish the cardiac dulness. They are suitable for moderate cardiac dilatation and can be given on alternate days, with Schott’s exercises on the other days.

Diet. In acute cases, especially if rheumatic in origin, a diet of milk carbohydrates is advisable. Some physicians allow chicken broth, beef tea and other meat extracts. Personally I regard such extracts as unsuitable and prefer to order fruit or vegetable soups, made without meat stock, as a change and to counteract constipation. In all cardiac affections the food should be nutritious, easily digestible, and given in small meals so as to avoid over-loading and flatulent distension of the stomach. The state of the appetite is a valuable indication of progress. One of the first signs of failing compensation in chronic heart diseases is anorexia after exercise. It is followed by dyspepsia, impaired nutrition, restlessness at night or insomnia, anaemia, cough, shortness of breath and swelling of the legs. One of the most reliable signs of improvement is gain in weight,
provided there is no oedema. In cases of oedema a salt-free diet is sometimes advantageous, combined with a moderate limitation of fluids.

There is no necessity to prescribe a strict diet in chronic cardiac failure, provided that the food is nutritious, given in small meals, and palatable. There is too great a tendency to order milk in quantities larger than the patient can digest efficiently, with the result that the appetite becomes impaired, the tongue furred and the breath offensive, the stomach dilated and the bowels constipated.

Blistering is in my opinion of very doubtful value in endocarditis and myocarditis. That a blister on the skin can affect an inflammation of the cardiac valves requires a more optimistic imagination than I dare own to. Although such treatment is used and highly recommended, it is associated with other remedies which are more probably the cause of the favorable issue. In pericarditis blistering is undoubtedly beneficial. The best method of application is the use of flying blisters around the inflamed area. The local application of ice-bags in the treatment of cardiac inflamations has been warmly advocated, especially for pericarditis. Sometimes it appears to quiet the excited action of the heart. Possibly this result is merely due to the complete rest so necessary for the accurate adjustment of the treatment. As a rule children do not like cold applications. Poultices and fomentations are more soothing, and can do no harm. The addition of opiates or belladonna does not make them more efficacious. Other counterirritants may be applied for pericarditis.

Venesection and leeches must be used with caution, for children stand the loss of blood rather badly. If there is much pain, an acute pericarditis, or an acute dilatation of the right ventricle due to myocarditis or cardiac failure, the application of a few leeches over the liver affords great relief. Venesection to the extent of a few ounces may be essential. Bleeding relieves the distension of the right heart for some hours and allows time for other remedies to exert their effect. It must not be adopted lightly, and it ought not be allowed to fall entirely into disuse. It should be looked upon as a measure for immediate relief of the straining heart and not as a means of reducing inflammation.

Purgatives are essential. It is important to keep the
bowels open, and freely so if there is backward pressure and a tendency to oedema. If the liver is engorged there is no pill as valuable as that of mercury, squill and digitalis, given at bedtime and followed by a saline cathartic in the morning. Such a pill may be given twice or three times a day. In cardiac inflammation the hydragogue cathartics are the most valuable purgatives, for they relieve the congestion of the tissues throughout the body and reduce the work required of the heart. If purgatives are required in cases of compensated chronic heart disease, the various preparations of paraffin, senna, aloes or cascarra may be used. A weekly dose of calomel or blue pill is sometimes advantageous.

Diuretics are also of immense value in acute inflammations and in the relief of oedema. Their action can be assisted by dry cupping over the kidneys. Dry cupping over the bases of the lungs is useful in passive congestion of these organs. I have no experience of the tincture of cantharides recommended by Dr. Eustace Smith as a diuretic, nor am I prepared to state which is the best diuretic. Diuretin, caffeine and theoëin sodium acetate are all of value, the last mentioned often increasing the efficacy of digitalis.

Digitalis is a diuretic and a cardiac tonic. There is a tendency to limit its use to non-inflammatory cardiac affections, though it may be prescribed tentatively in the course of inflammatory ones, with the exception of endocarditis. It is not always required, because a murmur is present. Formerly the infusion was preferred. Herbalists recommended that the leaves should be gathered at night and there is recent evidence that they contain more of the active principle at this time. Now, most physicians prescribe the tincture as being more stable and regular in composition. It is the simplest and most available preparation. The drug should be given every six hours until a definite reaction is obtained, and repeated if relapse occurs. Try and find the dose which maintains improvement without causing unpleasant symptoms. The patient's own sensations are a good guide. The drug must be omitted if it decreases or does not increase the secretion of urine; if it causes considerable slowing of the pulse; if it gives rise to anorexia, nausea and confusion of thought; and if the patient cannot be kept under supervision. Frequently, continuous administration is advisable, less often in children than in adults and chiefly for cardiac
failure due to mitral regurgitation. For such cases, after compensation is fairly well established, a dose of the powdered leaves. gr. $\frac{1}{2}$-2 once a week or more often, will maintain the compensation. Or the drug may be given for 3-4 days at a time every month. I have obtained excellent results both in adults and children by such means, using Nativelle's crystalized digitaline in doses of mg. 1-60 to $\frac{1}{4}$ daily for a week at a time. Digitalone (P. D. & Co.) is physiologically standardised. Ten minims is equivalent to eight of the tincture and to one grain of the leaves. Digalen, a sterile amorphous digitoxin, is said not to be cumulative. This has been disproved recently. One c.c. is equivalent to O. 3mgm. digitoxin, folia grs. 2.05, tincture m xviii, and infusion drs. 5.4. These drugs can be given subcutaneously and by rectum, if necessary. Crystalline digitalins is official in the French Codex. It corresponds to the German digitoxin and is much more powerful than amorphous digitalines. Most of these preparations are recommended because of their constant strength, and it is possible that the claim may be true, and also on the grounds that they are non-cumulative and less apt to upset the stomach. In some cases strophanthus is more suitable, e.g. severe dilatation and mitral stenosis. Squill sparteine sulphate strychnia and mux vomica are also valuable. Alcohol is necessary in acute dilatation, myocarditis and cardiac failure. Cardiac stimulants are not needed if recumbency alone is sufficient to reduce the action of the heart to the normal rate and if compensation is established. They are most efficacious when the right side of the heart has been relieved by cupping, leeches or venesection, and the liver relieved by mercury and a saline aperient. I know nothing about the tincture of cereus maxicana which has been recommended, in doses of m v .xxx for adults, to increase the strength and regularity of the heart without raising blood pressure. Vaso-dilators are unnecessary, for blood pressure is almost invariably low in children. Perhaps iodides are of value in chronic pericarditis.

Salicylates, and their congeners, are generally prescribed in all cardiac inflammations of rheumatic origin. The remarkable effect on the temperature, joint pains and swelling of rheumatic fever, is strong of evidence of the great value of this drug. Yet, although I have used it systematically for a quarter of a century, I still find it difficult to advance reliable evidence that the drug affects the course of cardiac inflammation. In my ex-
Edmund Cauley, M.D.

Experience it is by no means uncommon for the myocarditis to run a prolonged course with mild fever, the temperature running up to about 100° F. at night, in spite of the liberal administration of salicylates or aspirin.

Summary.—In all inflammatory cases, in which there is the least suspicion of rheumatism, salicylates and alkalies must be prescribed. The patient is kept in bed on a light milk and carbohydrate diet, fruit and vegetable soups being allowed as a change. Complete rest and a trained nurse are necessary. Blistering or counterirritants may be used, but are chiefly efficacious in pericarditis. Vaccines and serum are of problematic value. There is hope that, when the organism of rheumatic fever is isolated, an autogenous vaccine may prove beneficial to the patient. I do not wish to ignore the extremely valuable work done in this connection, but though realising that many observers are agreed that the genuine organism has been already discovered, there seems to be at present a disinclination to accept it as absolutely proved. In infective endocarditis, fortunately infrequent in children, my experience with vaccines and serums has proved unsatisfactory. It is difficult to grow the incriminated organism from the blood, difficult to prove that the organism obtained in cultures is the one causing the disease, and difficult to obtain good results from an autogenous vaccine or from a poyvalent serum.

Recourse is sometimes had to paracentesis for the relief of pericardial effusion. It is rarely essential in rheumatic pericarditis for even the largest effusions may be absorbed. It is a point for discussion whether the operation would promote more rapid recovery. For purulent effusions the pericardium must be opened and drained. Another and more modern operation sometimes called cardiectasis, is resection of the rib cartilages over the cardiac area for the relief of general adhesion of the pericardium. The treatment of cardiac failure and backward pressure is the same at all ages. For extreme oedema of the lower limbs multiple punctures and sterilised dressings are more satisfactory than the insertion of Southey’s tubes. Iron and glycerophosphates are given when compensation is established. Compensation is maintained by regulation of the mode of life diet, sleep, hygiene and exercise. These patients must not be allowed to become chronic invalids. A more just appreciation of their capabilities is now general, in comparison with the views
held by the past generation, the only precautions necessary are against rheumatism and over-strain. Such children ought not to take part in football, races, steeple-chases and like competitions. They may take part in other varieties of exercise during which they can stop as soon as they feel any cardiac discomfort. If compensation is less complete, more care is needed. The diet must be regulated, the bowels kept open and the general health attended to. A weekly dose of blue pill or calomel, and digitalis once a week or more often over a long period of time, will often maintain and even increase the degree of compensation.

In every case it is essential to recognise the cause and differentiate the type of cardiac disease, and to clearly understand its probable course and prognosis. Our methods of treatment do not differ markedly from those of the past, but I think we may claim that they approximate more accurately to the needs of the particular patient, that we appreciate more clearly the need of prolonged rest and great care during convalescence, and that we do not hold such gloomy views as to the prognosis in heart disease.

STUTTERING AND ITS TREATMENT

BY

M. NEUSTAEDTER, M.D., Ph.D.

Instructor in Neurology, New York University and Bellevue Hospital Medical College; attending Neurologist Bellevue Hospital O.P.D.; Chief, Neurological Division St. Mark's Hospital Dispensary.

New York.

Chief among the central defects of speech and the one we most frequently meet with in children is stuttering. Objectively it presents itself as a spastic incoordination neurosis. These spasms either inhibit, or interrupt the speech, and affect the muscle groups which are intrinsic in the production of co-ordinate speech, namely, those of respiration, voice and articulation. While some investigators place the lesion in the third (left) frontal convolution, Kussmaul holds that it depends merely upon a congenital anomaly of an irritating nature of the co-ordination of articulation.

It appears in a greater extent in males. Heredity plays only a comparatively small factor so far as I have been able to determine. Gutzmann reports that only 28.6% in his 569 cases
could be traced to remote ancestry and only 8.3% directly to progenitors, in whom there was also a predominance in the males. It must also be noted that these ancestors were stutterers in early youth, so that the children never heard the incoordination and there can be no question of imitation. Since not every child in a given family with an hereditary taint stutters, we must assume that alongside of this taint there must also be a predisposition, a locus minoris resistentiae which under favorable or rather unfavorable circumstances will exhibit this spastic inco-ordination. The most prominent etiological factors are infectious diseases and psychic shock, while imitation plays a rather small part. Some authors place the onus upon hypertrophied tonsils and adenoids as a direct or a reflex producing cause, but in view of the fact that fully 85% of all children are affected in that way, and none of the stutterers so far as my experience shows have been directly benefitted by their removal, I am inclined to doubt this theory.
The symptomatology of this affection can be summed up in the short statement that there are spasms of respiration, voice and articulation, which can be demonstrated objectively by inspection and palpation, but which at times are so insignificant and transient that can only be demonstrated by appropriate instruments. Happily, scientific investigations of this affection in modern times has been so thorough that, in order to discuss the rationale of a possible treatment, it is necessary to review these achievements.

During normal speech the act of inspiration is comparatively short and without any apparent sound and by way of the open mouth, while the act of expiration through the same route rather long since this act is the carrier of the speech. In the ordinary act of respiration the process is accomplished through the nose, and the expiratory act is only slightly longer.
than the act of inspiration. This is well illustrated in Fig. 1. The clonic spasms during the act of respiration in a stuttering child is well illustrated in Fig. 2. Here we have a great variety of types of faulty respiration. There is one form in which the stutterer before the act of speaking expels practically all the air with a sudden expiration and attempts to speak with the very last residue. Then there is a type of stutterers who impede their speech through inspiratory clonic spasms of the diaphragm, which is very well illustrated in the spiral-like curves instead of the straight line as in the normal tracing. In the third type there are tonic contractions of the diaphragm which make breathing and therefore speaking impossible. All the

FIG. 5.

Tracing of the word Lampe in a normally speaking person. (Author’s observation)

three types may appear in the same individual at different times.

The spasms of the vocal apparatus one can easily discern by auscultation with the aid of the phonendoscope. Instruments that would record curves of these spasms are not exact.

On the other hand it is comparatively easy to record tracings of the apparatus of articulation. These tracings are taken by a Marey cardiograph from the inferior maxilla, superior and inferior lips and the roof of the mouth. It becomes then evident that we first must be sure where the trouble lies before we attempt to treat the afflicted with any degree of success.

According to the symptomatology Gutzmann further divides the stutterers into three classes:
1. Those in whom the spasms appear as a result of inattention and negligence. One may easily recognize them by making them repeat a sentence when the stuttering will become markedly diminished and may even entirely disappear. The inattention in these cases is due as a rule to the nervousness of the child, which at times may become accentuated by some impediments in the air passages such as hypertrophied tonsils and adenoids.

2. Those in whom the repetition of the spoken sentence will cause more intense spasms to a point even of not being able to speak at all. These I would denote itension spasms analogous to intention tremors. Here also we may find impediments in the upper air passages.

3. Those in whom the psychical depression has been produced as a result of the existence of the affection for a long time. They fear to talk in presence of people believing themselves inferior to others. This group of cases rather belongs to the adult class of stutterers.

Scripture holds that stuttering is essentially a psychoneurosis arising from a compulsive idea. Stutterers are compelled by the thought of speaking to tighten up all their muscles of speech. On the other hand they have no difficulty in singing, because they have no compulsive idea connected with singing.

It seems to me that they are possessed by a desire to think and speak hurriedly so that before the act of speaking which is an expression of his thought is consummated an other idea and again an other one and so on ad infinitum crowd in one upon the other before he is able to express them in language. The ideas and actions then stumble as it were, upon one another, the afflicted becomes confused, the muscles of speech stiffen and he stutters in consequence.

Finally it may be mentioned that some stutterers also exhibit concomittant spastic movements in neighboring groups of muscles, such as facial distortion, compression of the eye lids, nodding of the head and similar expressions. I have seen a case in which the patient had to whistle before he could speak. These are of course secondary phenomena.

Treatment. As we invariably deal in all stutterers with a general neurotic condition it is imperative that we attend at first to the general condition of the patient. A bland, nourishing and easily digestible diet should be insisted upon. The use of alcoholic beverages, tea and coffee should be strictly forbid-
Plenty of fresh air and hygienic surroundings are an absolute necessity. As a matter of routine I advise the removal of impediments in the upper air passages if present to a marked degree.

The next step is the re-education of the stutterer. He must be thought first of all to breathe slowly, think and speak slowly. It may appear not quite pertinent, but I even advise my patients to learn to eat slowly. This at once inculcates into the sufferer a new perspective of life and this is exactly what we need in the successful management of these cases. It is best accomplished by letting them sing their words at the beginning. Later on they may speak while they beat time, or drawl the vowels. Scripture, however, insists that the patient be directed to take a deep breath before he begins to speak a sentence. He advises that melody and flexibility be put into the laryngeal tone. This aim is the ideal one, but it seems to me that it can be accomplished only after the patient learns to think and speak slowly. When we talk of melody, we mean also music, a rise and fall of pitch in the employment of speech, so that in the last analysis Scripture means also the singing voice. A very striking example of the great value of music in the training of the stutterer is the fact that those who speak dialects or races that intonate their speech have few stutterers.

The treatment of the stutterer requires a long time and a great deal of patience. The exercises must be held daily and he must exert himself to acquire a new habit and above all a new mode of speech and success will crown the efforts in the vast majority of the cases.

SEVEN SEX TALKS TO BOYS
By IRVING D. STEINHARDT
New York City

Many of you have heard of a certain practise or habit very prevalent among boys which has been called masturbation or self abuse. Unfortunately most of you understand what masturbation is by personal experience and to those of you who don't my message is to avoid finding out by actual practise. Masturbation is an unnatural way of satisfying a real or imaginary sexual appetite. You note I say real or imaginary sexual appetite. There is a difference and it can be truthfully said, I
class of false sexual desire. To return to masturbation. To think, that most of the illicit sexual acts are to be put into the class of false sexual desire. To return to masturbation. To those of you who have not been instructed already in this rather disgusting practice by others, I am not going to enlighten as to the "how to do it". I likewise advise you not to allow others to do so. To those of you who do masturbate I am going to say emphatically "stop it". If your own will power is not sufficient to make you stop a habit which is not only unnatural but harmful, ask your family physician to help you. But don't go from bad to worse by going from the habit of masturbation to the still

more disgraceful one of illicit sexual relations. Masturbation is bad, but degrading the sex of your mother and sister is worse by far. Always bear this in mind—the actual sexual relation is absolutely unnecessary to your health, well being, or real happiness. Therefore if the actual sexual relation is unnecessary certainly a very false and harmful counterfeit of it must likewise be unnecessary. Just learn to regard the sexual relation as the most sacred and intimate relation that can exist between the male and female, so ordained by the Almighty. That in this mutual expression of the highest degree of human affection the human race is continued and because of what this relation expresses when carried out in the proper state of mind the result-
ant child gets the best of the qualities of the parents who are concerned. If you will educate yourself to realize this truth the idea of illicit relations for the gratification of artificially aroused animal desire will become so reprehensible to you that you will readily become a most earnest worker in the cause of saving our girls from degradation and disease, and your sex likewise. Masturbation is an unnatural habit or practice because it is a mono-sexual act which so far as reproduction is concerned, can amount to nothing. In many of the lower types of animal life, the same being contains all the essential parts of reproduction, or as we speak of them, the male and female contributions. There is a combining of these parts within the original body and therefore outside relations with others of the same class are unnecessary. But in the human race the essential parts to creation are separated. They are contained in two bodies, the male and female and for reproduction to take place these male and female elements must be brought together. You will therefore see why any attempted sexual act in either sex without the participation in it of the opposite sex is an unnatural act. Why is masturbation unhealthy? My answer to such a question would be because of its being practised to excess. The drain it makes on the normal vitality is too great for the recuperative powers of the body to catch up with. Excessive sexual relations would bring about as evil a result, but to have the sexual relation a member of the opposite sex must participate in it and when such a desire becomes apparent the necessary partner may not be obtainable or the surroundings not be feasible for such indulgence for various reasons, therefore cases of excessive real sexual relations are not so plentiful as the others. The masturbator can practically indulge himself any time at any place. All he looks for is a place where he can conceal himself or perhaps only the peculiar movements he needs to go through to bring about this self gratification. The affair being so easy you can readily understand the tendency to excess and therefore to harm physically and mentally. Another peculiar phase of the masturbator is that many of them become perverted and lose their desire for the normal sexual relation and therefore their usefulness as a reproducer of our race. Another evil of masturbation is its tendency to teach the practise of deception and lying to the one who practises it. Why? I have never seen a masturbator, male or female, who ever was willing
to admit in public, at least, that he or she practised this habit. Result: lying. When one starts to lie about one thing the habit very easily becomes a chronic one. The masturbator seeks solitude or privacy for the carrying out of the vile habit and will devise all sorts of excuses to get this. Result: deception. Again a very easy habit to have grow on one when once the seed is planted. You all know the old saying: "Oh! What a tangled web we weave when first we practise to deceive." You see therefore that even in the brief way I have dwelt upon the subject of masturbation, it is a harmful and most unnatural practice and should be avoided. Now however if your mind is so weak and your determination is such a puny thing that the brute animal desire in you is the master and able to make you be its slave and do its bidding when it is aroused why you will still be more of a man, if you only harm yourself instead of adding one more human being to the number of fallen women or help degrade still further an unfortunate member of the same sex as your mother or sister. What do I mean by this? Exactly this: get rid of your desire by a non-sexual act—masturbation—instead of ruining a good girl or assisting an unfortunate female still further to ply her unspeakable calling. You may have the right to injure and degrade yourself but you have absolutely no right to injure or degrade another and par-
particularly not when this other belongs to the weaker sex, the sex of our mothers and sisters, whom the true, real man is supposed to protect at all times. I repeat again there is no reason for the real or unreal sexual act at any period of life and those who give this excuse are either insincere or not correctly informed. If those who when about to indulge in an illicit sexual act would only stop and think a moment before they did so, a thought something like this, I think illicit sexual indulgence would decrease very markedly, viz: This woman who I have persuaded for a reward of some kind to gratify my sexual feeling is somebody's mother, wife, sister or daughter. Would I want any man to do this to my mother, wife, sister or daughter, even though for some reason or other they got into this situation? Your answer and the answer of every other man would be a most emphatic "No"; therefore be kind to the mother, wife, sister or daughter of some other man and instead of trying to cast them down give her a helping hand to get back to respectability again. Remember, "Cast thy bread upon the waters, etc..." and "Do unto others as you would have them do unto you." They are good sayings and true ones. Be the real man in action, word and deed, not the imitation so-called sport. The real man and the real sport are alike. They believe in fair play in everything and especially when dealing with the female sex. Neither of them would rob a woman of her good name in the first place or assist in further degrading her after some despicable scamp had ruined her. Their respect for the sex of their mothers and sisters is too great, and their love for their mothers and sisters is too holy to allow them to do any such thing. Some of you are going to tell me that doctors have advised males to indulge in the sexual relation. To me this seems like strange advice from those whose duty it is to protect and improve the human race. It is on a par with the advice to lie, cheat and steal that some alleged preacher might give. You can realize what good advice that would be. It would probably get you into jail. Ask any of these doctors, or any one else who gives you such vicious advice regarding the sexual relation, if so long as they believe that some women must be sacrificed upon the altar of animal desire, if they would be willing to "save" your health and well being by offering their mothers, wives, sisters or daughters up to your supposed necessity. Their answer would probably leave no doubts in your mind as to what they thought of your proposition. Yet they very
Sex talks to boys

Ignobly advise you to sacrifice and degrade the dear ones of others. Just think it over and let it sink in deep and I believe you will realize that immorality is a deep wrong to everybody, male or female. Many of you are puzzled by the phenomena of the involuntary discharge of semen during sleep. You have read in sheet advertisements, and have been told verbally by various people of the dreadful effects to be expected such as loss of manhood, imbecility, various nervous conditions, etc. And you have "swallowed" these statements at their printed or spoken value whereas a very little part of them had any truth in them at all. These so called "night losses" must be analyzed. What is the reason for them? In how much are you responsible for them? How frequent or infrequent are they?

For instance if you fill up your mind with trashy literature of a sexually exciting nature and dwell on many thoughts of sexual relations at bedtimes you are very apt to have dreams of a like nature accompanied by seminal emissions. Their frequency will grow with your continuance of this line of reading and thought. Likewise handling of your organ of sex, other than masturbation, will assist towards this habit of night losses. Keep your mind clear of these thoughts and impressions, and your hands away from these parts and you are not likely to have any complaint of night losses of any account or amount. Just bear in mind that they will come also to those who even have sexual relations and likewise to the one who masturbates. If for any reason the nerves controlling the ejection of the semen be stimulated to perform their function, it matters not to them whether the cause of the stimulation is the normal
one or an abnormal, something like a chronic inflammation, disease, etc. An occasional night emission, or as it is commonly known in street parlance, "wet dream", is no more harmful than is an occasional nose bleed, let us say. Any harm in the emissions must depend on their frequency and their cause. In the man who is a total abstainer from sexual relations an occasional nightly emission may take place and be absolutely without harm to him. One might designate it very truthfully as a form of male menstruation. Don't believe all the lies circulated for commercial reasons by various unscrupulous persons, including a certain class of doctors, and also by patent medicine manufacturers, by means of circulars, books of different kinds, advertisements in the papers and magazines. These people "have an axe to grind" and that axe is to add to their worldly wealth by decreasing yours. In their cleverly written advertisements they can almost convince a well man that he is at the point of death and that only their treatment can save his life. How much easier for them therefore to scare the life out of you on matters pertaining to your sexual parts, the proper knowledge of which has always been kept from you. Believe me if most males would devote the energy and thoughts that they give to matters sexual to their occupations or professions, they would be more valuable to mankind. Devote yourself to developing your brain and mind and allow your sexual parts to take care of themselves. Just behave yourself sexually and Nature will do the rest. Before you knew anything of sexual matters, your organs took very good care of themselves and are quite capable of continuing to do so. Devote your brains and energy to things that will improve humanity and not to seeing how you can degrade womanhood, make a plaything of a most serious and important function, and desecrate the most sacred and intimate of all human relations. Make of your family physician a friend. The right kind of a physician wants you to feel this way towards him. He is desirous of guarding your health and your morals. Remember the aim of the medical profession is to prevent sickness by teaching the public how to live not only in the matters of sexual life but in everything else. Contrary to what you may think the physician does not welcome sickness. He would much rather earn his living by keeping you well than by curing you after you had fallen ill. You are perfectly safe in confiding in your physician because the law says a physician may not repeat what is
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told to him by his patients in the course of their professional relations. I do not recall anything else to tell you about masturbation. I have told you "how, why and when" it is a dangerous habit to be avoided and how likewise many of the things to be charged against it are also true of the illicit sexual relations. One thing I might add is this however, because it will be one of the first questions that you would ask in our discussions. Some of you have been told among other sexual untruths and nonsense that when the sexual organs in either sex, but especially the male, have reached their maturity if they are not used in the performance of their stated function there is a tendency for them to lose the power to perform this function. Of course this is not so, but disease and sexual excesses can bring about this condition very readily and does so in many cases. You cannot trifle with Mother Nature and not expect her to punish you for it. She will every time. The form of insanity that is most often found in excessive masturbators and from excessive sexual indulgence is melancholia and acute mania. It has seemed to me that the excessive masturbators were usually afflicted with melancholia, a most distressing form of insanity. If any of you have ever seen a person so afflicted you know how true my words are.
RECENT INTERPRETATIONS OF FEEDING DISTURBANCES IN INFANTS*

BY

F. P. GENGEBNACH, M.D.,
Denver.

It is by no means the purpose of this paper to cover scientifically the whole range of infant feeding, but rather to give a brief resume of the progress made in this most important subject for the benefit of those practitioners who frequently have neither the time nor the opportunity to follow the world-wide investigation constantly being carried on to determine the exact causes of feeding disturbances in infants.

Even as the adult is a grown-up child, so the infant is a very young adult, and even as the adult has difficulty in digesting and assimilating certain food elements, so does the infant meet with a similar difficulty since its principal source of nourishment is milk, called the perfect food because it contains practically all the food elements.

Is it surprising then that we should have difficulty in adapting the food to the individual infant? Even breast milk, although it is the natural food for the infant, sometimes fails to agree, not necessarily because the food is at fault per se, but because it is often impossible to modify some of the individual food elements to the particular infant in hand. Rather more surprising is it that it has taken us so long to thoroughly appreciate the fact that each individual food element may of itself for some infants or under certain environing conditions for many other infants, become the actual cause of the feeding disturbance. As Helmholtz puts it: "The same food, be it mother's or cow's milk, that acts as a food when given in amounts above it, and the disturbances will vary according to which element of the milk is in excess."

It is therefore with questionable amusement that we look back at the radicalness of certain pediatric teachers that this or that food element is alone to blame. First the proteid or casein was held up as the scapegoat, because of the frequency of curds in the stools of infants with indigestion. As a result infant feeders were divided but not the less intense as to their advocacy of modifying cow's milk with plain water, cereal dilutions

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(barley, oat-meal, rice and arrowroot); addition of lime water, the bicarbonate or citrate of soda, or even preliminary peptonization.

At the same time emphasis was laid upon the chemical composition of mother’s and cow’s milk, and as it was certain that the infant could handle only a very low percentage of proteid, it was quite easy to fall into the natural mistake of increasing the fat in the food, since the percentage of sugar was usually kept about the same.

Then we had just as intense advocates of cream dilutions and top-milk feedings. Still the infants continued to have feeding disturbances.

About this time the so-called German school of pediatricians, including such well-known and able teachers as Heubner, Czerny, Finkelstein, Keller and Langstein, pointed out the fact that curds in the stools of infants suffering from indigestion were largely if not entirely composed of fat, and not easein as had been the popular belief. The natural conclusion was that the fat and not the casein in cow’s milk was the disturbing factor, so the Germans advocated whole milk dilutions which still furnished the necessary amount of proteid, and at the same time reduced the fat to reasonable percentages.

Some American pediatricists went another step farther and started to advocate skim-milk modifications. Coincident with new discoveries in medicine it is always difficult to prevent the pendulum from swinging too far in the opposite direction.

The Germans, with their natural thoroughness, carried their investigations still further. Thus Finkelstein precipitated the curd from equal quantities of mother’s and cow’s milk and found that when the curd from cow’s milk was added to the whey from mother’s milk, the infant continued to gain the normal amount in weight, but when the curd from mother’s milk was added to the whey from cow’s milk, the weight curves went down. As this experiment indicated that the casein in cow’s milk was not the disturbing factor, he carried out further experiments the results of which were to show that an infant could digest, without disturbance, much larger quantities of casein than were ordinarily required.

The natural inference also from the first experiment was that something in the whey from cow’s milk must be the disturbing factor. His first thought was that it was the salts, and by a series of experiments he showed that some cases of eczema.
were markedly improved, if not entirely cured by withdrawal of the salts in the food, or reducing their percentage to a minimum.

However these are exceptional cases and we must therefore look for other possible disturbing factors in the whey, and so we are brought to an investigation of the element which was formerly supposed to be the least likely to cause disturbance, viz., the sugar. A great deal of work has recently been done along this line. Finkelstein and his able co-worker Ludwig Meyer have suggested that it is an excess of sugar, and more particularly milk sugar in the infant's food that primarily causes the fermentative dyspepsia of infancy, and as a result of this disturbance the digestion of other elements in its food, especially the fat, become impaired, and as a result we find the fat curds in the stools.

The sugars most commonly used in infant feeding are milk, cane and malt sugars. They are disaccharides and must be broken down during the process of digestion by their respective ferments, lactase, invertin and maltase, into their respective monosaccharides dextrose and galactose, dextrose and levulose, and dextrose and dextrose, before they can be assimilated. As only the dextrose is absorbed, it is easy to understand why malt sugar is more easily assimilated. Reuss has demonstrated the fact that 7.7 grams per kilogram of maltose can be assimilated as against 3.5 grams per kilogram of lactose or saccharose or more than double the amount.

"Leopold found that 43 per cent. of the babies tested with lactose, 47 per cent. of those with glucose, 42 per cent. of those with saccharose, and only 33 per cent. of those with maltose, reacted with fever. This fever was always accompanied by diarrhea, and in none of the cases tested in which the stools remained normal did the sugar cause fever."

Whether some of the sugar disturbance is due to impurities in the milk sugar may be worthy of some consideration. Coit says: "Three years ago I succeeded in persuading the National Milk Sugar Company to refine this market sugar by two or more recrystallizations in order to remove the gross impurities and the color, and to attenuate the bacterial toxins which the general chemist of the concern admitted were present. I believe that many of the difficulties of bottle feeding are due to ordinary milk sugar."

So the pendulum is now swinging toward sugar as a most
important disturbing factor and malt sugar is being enthusiastically advocated as the only sugar to use. But malt sugar does not work well with every infant, nor will every infant take a food with a malt flavor, and so the infant feeding millennium has not yet arrived.

But there are factors other than the elements in the food itself that must be considered. One of the most important is bacterial contamination of milk, with its preventives improved dairy sanitation and hygienic handling of milk, giving us certified milk, and the remedies for contamination, pasteurization and sterilization. No one will deny the advisability, if not the necessity for as clean milk as possible, but when milk commissions arbitrarily fix the number of bacteria permissible in a cubic centimeter of certified milk at 10,000, or 30,000, as the case may be, one cannot help but feel that if it is safe for an infant to swallow that many bacteria per cubic centimeter, that after all, the bacteria usually found in milk cannot be such a great menace in themselves. Milk infected with the germs of scarlet fever, diphtheria, typhoid fever, etc., is of course something different, but cases of specific bacterial infections certainly play an unimportant part in the almost numberless cases of feeding disturbances in infancy.

For years it was believed that bacteria played an important role in the summer complaints of infancy, but to quote from Bartlett's review of Rietschel's article, "Die Sommersterblichkeit der Sauglinge," "the important facts to be noted here are that there has never been isolated any definite bacteria which can experimentally be proved to be the specific causes of the deaths resulting from summer diarrhea; that there has never been isolated from milk contaminated by bacteria any definite toxic substances whose effects on the organism can explain the large number of deaths from diarrhea in summer; and that there has not been isolated from the stools of infants, bacteria which can experimentally be proved to be responsible for the deaths from summer diarrhea. An explanation of summer diarrhea or of the large infant mortality in summer on bacteriologic grounds is purely a hypothesis."

On the other hand Rietschel in this same article points out some very interesting facts in this connection. First, that summer diarrhea is most common in those industrial countries which lie almost entirely in the so-called temperate zone, the zone of greatest variations of temperature, viz., America, Eng-
land and France, Germany, Austria, Russia and the Balkan States. Farther north or south the mortality is not so high.

Second, these are the countries of large cities with more or less congested tenement districts where a large proportion of the laboring classes live.

Third, statistics show that the number of deaths among infants in summer increases directly proportional with the increase of outside temperature.

Fourth, that these deaths occur as a result either of excessively high temperature causing a form of heat stroke or prostration, or of prolonged high temperature with little variation between the day and night temperature, causing a form of heat stasis or exhaustion.

Fifth, that there is therefore a higher mortality among those living in houses where the infant has the least chance of cooling off, i.e., in houses in the congested districts in the lower part of the city as opposed to those on the hills where the houses are not built so closely, thereby permitting a better circulation of air.

The following figures for Dresden illustrate this point: "In 223 streets there were no cases of death in the midsummer period. In 50 streets, 20 per cent.; in 16 streets, 30 per cent., and in 7 streets 40 per cent. of the infants living on those streets died in the midsummer period. The streets in which there were no deaths were situated in the higher parts of the city where there was a better circulation of air, while in those streets where the mortality was greatest there were greater congestion and less favorable conditions for the access of free air in dwellings." (Weiner).

Leifman found that in 35 streets alone in Halle, there were 577 deaths of children in summer, while all the rest of the infant deaths, numbering 619 (only 42 more) were distributed over 204 streets.

Meinert analyzed 580 cases of death from summer diarrhea with relation to the different floors on which these children lived. Of these there died in the basement or cellar, 3.98 per cent.; ground floor, 12.78 per cent.; first story, 10.7 per cent.; second story, 9.13 per cent.; third story, 8.18 per cent.; fourth story, 9.18 per cent., and fifth story, 11.27 per cent. Thus the mortality was much less in the basement where it was comparatively cool, although otherwise considered less healthy, and the mortality highest on the ground floor, which is exposed to the
reflected heat of the pavement and where the circulation of air is less than in the upper stories. The high mortality on the top floor is accounted for by the excessive radiation of heat from the roof, which more than offsets the otherwise better circulation of air.

Thus new disturbing factors are constantly being investigated, and year by year we are making steady progress in the solution of this great problem of feeding disturbances in infancy, which directly and indirectly causes such an appallingly high infant mortality.

INFANT FEEDING*

BY

ST. GEO. T. GRINNAN, M.D.,
Richmond, Va.

It is a proper or an improper nutriment which makes or mars the perfection of the coming generation. Nutrition is the most important factor in the immense mortality during the first year of life. The question whether a child shall be strong and robust or a weakling is often decided by its food during the first three months of life.

An infant during the first nine months of life spends most of its time sleeping and growing, and during this time the muscular effort is not great; it follows, therefore, that the diet of an infant should contain relatively more of the tissue builders, proteids and mineral, and relatively less of the energy producers, carbohydrates, than one finds in the food of the adult.

During the first nine months of life the human being is carnivorous. A violation of this law is followed by disease, especially when carbohydrates are too exclusively used. The usual result is scurvy, rickets, or some serious digestive disorder.

The interesting table compiled by Heuber calls attention to the great value of proteids and mineral salt in young children.

<table>
<thead>
<tr>
<th>Time by which Weight is Doubled</th>
<th>Proteids.</th>
<th>Ash</th>
<th>Lime</th>
<th>Acid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human</td>
<td>180</td>
<td>1.0</td>
<td>0.2</td>
<td>0.032</td>
</tr>
<tr>
<td>Horse</td>
<td>60</td>
<td>2.0</td>
<td>0.4</td>
<td>0.124</td>
</tr>
<tr>
<td>Calf</td>
<td>47</td>
<td>3.5</td>
<td>0.7</td>
<td>0.160</td>
</tr>
<tr>
<td>Goat</td>
<td>19</td>
<td>4.3</td>
<td>0.8</td>
<td>0.210</td>
</tr>
<tr>
<td>Pig</td>
<td>18</td>
<td>5.9</td>
<td>0.9</td>
<td></td>
</tr>
<tr>
<td>Sheep</td>
<td>10</td>
<td>6.5</td>
<td>0.9</td>
<td>0.272</td>
</tr>
<tr>
<td>Cat</td>
<td>9½</td>
<td>7.7</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td>Dog</td>
<td>8</td>
<td>8.0</td>
<td>1.3</td>
<td>0.453</td>
</tr>
<tr>
<td>Rabbit</td>
<td>7</td>
<td>10.4</td>
<td>2.4</td>
<td>0.591</td>
</tr>
</tbody>
</table>

I believe that in the past too little attention has been paid preserving these elements as found in breast milk.

to mineral salt metabolism. Note in Heuber’s table the large quantity of lime salt and phosphoric acid supplied to various kinds of young mammals.

The percentage of phosphoric acid supplied to young dogs in milk is ten times as great as that supplied to the human being when young. Mineral metabolism is now recognized as a very important factor in the use of breast milk. The fact that the percentage of these elements is small is the very reason for preserving their elements as found in breast milk.

"The loss in phosphorus is sixteen times as great with cow’s milk as with woman’s milk (rachitis). Human milk contains in addition to lecithin and nuclein more combined phosphorus than cow’s milk.

"Of the total phosphoric acid in human milk 35 per cent. is in the form of lecithin. Of the total phosphoric acid in cow’s milk 5 per cent. is in the form of lecithin. Of the total phosphoric acid in human milk 41 per cent. is in the form of phosphocarnic acid. Of the total phosphoric acid in cow’s milk 6 per cent. is in the form of phosphocarnic acid." (See Siegfried, Zeit. f. Physiol. Chem., Vol XII., p. 575, 1896, and Stoxlassa, Ibid., Vol. XXIII., p. 343, 1897.)

While salts do not of themselves act as producers of heat and tissue, their relation to these processes is such that one can no longer neglect them. Extracts of these salts do not serve the purpose. Extract the salts and the animals die. The salts must come into the body in organic union. Separate the salts and feed them separately and still the animals die.

It is the opinion of the Finkelstein school that the mineral salts play a large part in the disturbance of nutrition. It is generally accepted that many common diseases of infants have their origin in disturbed mineral salt metabolism. In cases which puzzle and baffle all efforts of control it is well to consider the capacity of mineral salts as electrically charged ions.

Dr. Raymond Hoober (Archiv. Pediat., March, 1912) cites two interesting cases of milk anaemia, the milk being poor in iron. The children, aged three years, were fed on such foods as contain a large per cent. of iron. All medication by the various iron preparations was stopped. The child was sent to the country and under the iron diet soon had rosy cheeks.

Edema in infants is a condition quite common, independ-
ent of heart or kidney complication. The oedema in the majority of cases is caused by what the child is not being fed rather than by what the child is fed. Oedema in such cases or of such nature is commonly seen when an infant is taking barley water or whey. The addition of suitable food causes the oedema to disappear.

We see, therefore, that a study of infant feeding brings us to consider the caloric value of various foods used in infancy and early childhood. Experiments have established that on complete combustion one grammé of fat yields 9.3 calories, one grammé of protein yields 4.1 calories, one grammé of carbohydrate yields 4.1 calories. Using this as a basis we can compute the caloric value of all products which have been analyzed.

Using Koenig's table we know the caloric need for the various ages by very simple calculation. The caloric need for the various ages as given by him is as follows:

<table>
<thead>
<tr>
<th>Age</th>
<th>Caloric Need</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child 1 to 2 years</td>
<td>800 calories</td>
</tr>
<tr>
<td>Child 6 to 10 years</td>
<td>1600 calories</td>
</tr>
<tr>
<td>Adult woman</td>
<td>2300 calories</td>
</tr>
</tbody>
</table>

While it is not practical to figure out the caloric need of every case we see, nevertheless there are many cases in which the caloric deficiency is the cause of the illness.

In this connection it is well to mention that "there is one factor which at times makes the infant of the tenement richer than the infant of the palace, that keeps alive the infant of the crowded slum while that of the immaculate scientific hospital dies." I refer to good mothering. Abraham Jacobi was compelled to resign from an infant asylum for explaining this to his board of lady directors.

The most common error in feeding during the second year is too frequent feeding. Five or six meals a day at this age, I believe, is a mistake; certainly after eighteen months four meals a day is sufficient.

During the first part of the second year vegetables become a valuable article of diet. The lack of iron in milk is supplied in vegetables.

Theoretically, an infant is born with enough iron stowed up in the liver to last one year. Valuable foods during the second year are spinach, green peas, carrots, string beans and asparagus tips. Too much milk should not be allowed during the second year. It is a common error to give too much milk at this time. Two milk feedings a day after the second year are
sufficient in the majority of cases. Most parents give too much cereal food. Children would have better teeth if they had more bread and crust and less mush.

A bowl of soup preceding a meal detracts from the meal in that the child is not liable to eat sufficient solid food. Uncooked fruit is certainly of more value than cooked fruit. Scraped pear or apple can be allowed to a child of eighteen months once or twice a day. It is of more value than prune juice, and excellent for constipation. When fruits are cooked the habit of using sugar should be avoided. Beware of the argument that the craving for sweets should be satisfied.

In regard to meat, cooking is very important; meat for children should be cooked rare, cut fine and mixed with potato or bread at first.

The question of boiling milk is one of great importance in infant feeding. The great question of tuberculosis is involved in this problem. It is now recognized that a considerable proportion of infantile tuberculosis is of the bovine type and originates through cow's milk as a food. It is clearly obvious that boiling the milk removes this danger. Where the milk is not of the very best certified variety boiling becomes very necessary.
Presentation of Cases: Hydrocephalus Treated by Cisterna Sinus Drainage. Dr. Irvin S. Haynes reported the case of a child thirteen months old upon whom he had operated for hydrocephalus on February 8th, by drainage of the cisterna magna into the lateral sinus by means of a silver cannula. The case was a typical one of the disease, large head, open fontanelles, spastic extremities continuous whine and cry.

Cisterna sinus drainage was performed after a technique described in a paper presented to the Surgical Society in January and published in this month's Annals of Surgery. The operation consisted in exposing the dura over the confluence of sinuses downward toward the foramen magnum and over the cisterna magna. A communication between the cisterna magna and the lateral sinus was established by means of an angular silver tube having an internal diameter of one and a half millimeters. Details of the technique will be found in the paper referred to above. After the canula was in place it was held there by a retention suture, previously placed and the skin tightly sutured.

Marked changes followed. At the end of twenty-four hours the temperature was 106°, the pulse not countable and the respirations 42. After a mustard bath and intermittent colonic irrigations of cold water the temperature was 100° and 2.5 at the end of the next day. Convalescence was uninterrupted thereafter. On April 5th the measurements showed a diminution in the head of 1 and 1/4 inches in the circumference; 1/4 inch in the sagittal line from the nasion to the inion and 1 and 1/8 inch over the head from one external auditory meatus to the other. The general improvement has been very noticeable.

VON PIRQUET TEST

Dr. Hymen: In making a Pirquet test the best method to use is a needle with which to abrade the arm. The least danger is from a borer suggested by Dr. Pirquet himself. In scratch-
ing the arm it is possible that we open some of the blood vessels and thus permit the tuberculin to be absorbed. The tuberculin is to rest upon the abraded surface and thus produce a local reaction without going into the circulation. The Von Pirquet is the least dangerous method and therefore it has survived. As regards the dilution of the tuberculin. By attempting it the tuberculin is decomposed and for this reason it is best to give it in the 100 per cent. strength. It is a well known fact that the reactions obtained do not correspond to the degree of the process in the individual. I have seen a very strong reaction with marked infiltration which points to acute tuberculosis. A small little areola around the Pirquet vaccination probably points to a latent negative tuberculosis.

Dr. L. Emmet Holt: I have seen very marked tubercular reactions with very little tuberculosis, and a slight reaction where the process was very active. There is no way in which we can determine the amount of tuberculosis by the amount of reaction obtained.

Dr. Alfred S. Hess: My experience has been the same as Dr. Holt’s. I have gone over hundreds of reactions in children trying to get some association between the amount of reaction and the degree of tuberculosis but without avail.

Dr. Northrup presented an Xray of the lungs of a child. It was one of five cases in which the subjects were delicate, had a temperature, etc. The case resembled pneumonia, there were scattered rales in all part of the lungs, but no signs of consolidation. At autopsy the lungs were studded with miliary tubercles.

I have of late endeavored to look for tuberculous children. Hamburger reports that 30 to 35 per cent. of them should die. They do not die. The proper way to prove this is to proceed along the lines laid down by Dr. Hess. It is not fair to the children to say that 37 per cent. of them who give positive skin reaction will die; it is an unnecessary scare to the parents.

Dr. S. Welt Kasels: Dr. Holt referred to the case reported by me three years ago. A boy of six months had enjoyed good health. The child had been circumcised on the ninth day. According to the mother the wound never looked well. There was slight fever and gastric disturbance. At the end of four weeks the inguinal glands began to swell. When six weeks old the gland was aspirated and a serous fluid obtained. A labora-
tory examination showed the tubercle bacilli. Von Pirquet was positive. A few weeks later the inguinal glands were removed and partly curetted. They were tuberculous. We could not get the Mohel to come for examination, but we found out that he coughed. The case of Dr. Holt is unique, because of its rapid course. If the glands are removed at a very early period the prognosis is good. If the child has good resistance or is breast fed the process stops there otherwise it becomes generalized.

Dr. Pease: I saw this case when it first came to us. We sent it to Dr. Haynes on a long shot. There was no question that the child had hydrocephalus, there was tension in the anterior fontanelle, etc. We advised the mother to go to Dr. Haynes for treatment. The case has improved most remarkably. There is now very little tension in the anterior fontanelle. The child's nutrition has been kept up and all has been accomplished that we can expect. Personally I look upon this case as a very remarkable one and one in which I did not expect to see such a good result. Two years ago I was of the opinion that surgery should help us in these hydrocephalic cases and it has helped us.

Dr. Hermann: I saw this case in the Vanderbilt Clinic before it went to the Polyclinic. The improvement is not very great except in the size of the head. The child has had hydrocephalus for many months and the process of compression has also lasted many months and we must not therefore expect too much from a surgical procedure. Does it do any real good? The damage done to the brain is irrevocable. The child is still spastic and the fundi changes are still present. The size of the head is diminished but whether this will be permanent we cannot tell. This was not a favorable case of marked improvement in envious symptoms.

Dr. I. S. Hirsch showed a series of very interesting radiographs regarding the findings in lungs in children suffering from tuberculous meningitis. The shadows in the lungs were not always due to tubercular herds. In some cases they proved to be ataleactatie areas, or bronchi and blood vessels caught in the oblique position.

The Prognosis of Tuberculosis in Infancy. Report of a Ward Infection, by Alfred F. Hess. The present status as regards the prognosis of tuberculosis in infants under two years
of age is that it is almost always fatal. This has been brought out by French and German writers. I shall report a number of cases which give tubercular skin reaction and have been followed a number of years. The first group consists of seven infants followed for two years. They were surrounded by tuberculosis in their homes but clinically were well. The second group consists of 300 infants under five years of age, many under one year, many under two years and the rest up to five years. In all these infants the Von Pirquet has been done twice and repeated every year. Group three, consists of infants that drank milk contaminated with tubercle bacilli. I reported these cases two and three years ago, respectively. Group four consists of a small group of infants that went to the Preventorium and were surrounded by tuberculous adults.

Group I. Surrounded by tuberculous father or mother; two under six months, two between six and twelve months. Three from one to two years. They have been followed for three to four years. All gave positive Von Pirquet twice. The tuberculous individual was later removed or died. Of these cases one has died of tuberculosis and the others are negative clinically. These cases cannot be exactly compared to those mentioned by Dr. Brown. His cases were sick infants who came to the hospital. These were absolutely normal.

Group II. 300 children; one under six months, four between one and two years, three between two and three years. All are well. All gave three positive Pirquet reactions. A case of four months was especially interesting. Admitted to asylum when four months of age. Mother died of tuberculosis two months after the child was admitted to the hospital. The child had been nursed two months. Three other children in the family had tuberculosis. Last April the child developed pneumonia and pleurisy with effusion. Some of the fluid was injected into a guinea pig and the result was negative. The child is now well. The child has some features associated with tuberculosis, as long lashes, fair skin, etc. All of these eight children are doing well. They are now from four to six years.

In the past two years there have been four deaths in the institution from tuberculosis. One case developed acute tubercular meningitis. The child had been perfectly well. It developed a tonsillitis and ten days later tubercle bacilli were found in the spinal fluid. It died in seventeen days. One other child of nine months developed tuberculosis after measles and
two other cases succumbed. Tuberculosis therefore does not play a large role among these 300 children.

We must consider the relation of measles and tuberculosis in young children. In the last two years 145 cases of measles developed. One or two of these afterwards developed tuberculosis. This includes children up to five years of age. One-fourth of all the children in the institution gave a positive Von Pirquet. One-third of all children after the first year gave positive Von Pirquet in this institution. It is therefore interesting to note that out of 145 cases of measles only one or two developed tuberculosis.

Group III. Exposure to bovine tubercle bacilli. Three years ago I reported upon sixteen out of eighteen of these cases. One developed large cervical glands in which the bovine type of tubercle bacilli was found and cultivated. It is now five years since these children drank the infected milk. Twelve have been followed. All are well. None have developed tuberculosis. The prognosis of latent tuberculosis even in very young infants is not bad. There are many children, infants, infected during the first year of life, who as we have shown, show no signs of tuberculosis in later childhood.

The prognosis of tuberculosis in infants giving clinical signs is, on the other hand, very bad.

Ward Infection. A nurse was in charge of ten infants varying in age from two to three years. Three of these ten infants showed a positive Von Pirquet reaction. She was in the ward six weeks and was removed because she was not well and was found to have tubercle bacilli in the sputum. Soon after she left, the children were tested again with tuberculin and there was found to be no change. When tested three months, and again six months, later all gave a positive tuberculin reaction. These children did not leave the precincts of the asylum. No other group of children developed positive reactions. The general infection was probably partly disseminated by the nurse in the course of treating the mouths of the children for stomatitis.

Simple Syringe Transfusion With Special Cannulas, by Dr. Edward Lindeman. A new method applicable to infants and adults. Preliminary report. Two sets of cannulas are employed, one for donor, the other for recipient. There are three cannulas to each set, each telescoping within the other. The innermost cannula is a hollow needle, long gage, with one end
ground to a fine point and short bevel. The hollow needle No. 1 is fitted snugly into cannula No. 2. Cannula No. 2 is 5 mm. shorter than the needle and is fitted snugly into cannula No. 3. Cannula No. 1 is 5 mm. shorter than cannula No. 2. The proximal ends of No. 1 and No. 2 are capped with stationary thumb screw caps. The proximal end of No. 3 is capped with a receiver to fit any record syringe. In very small infants only cannulas No. 1 and No. 2 are employed, No. 2 being capped with the receiver fit to tip of syringe. Operation. One operator manages the syringe of the recipient, another the syringe of the donor and an assistant stands between and close to the operators. The median basilic, the external jugular or internal saphenous veins are chosen, according to the size. A tourniquet is applied and skin sterilized with iodine. Cannula is held almost parallel to the vein, skin punctured and cannula forced into the vein. After the first joint A had entered the vein, cannula No. 1 is withdrawn to a distance of about ½ inch, (this prevents vessel wall from being injured or punctured by the needle after the vein is entered.) With the thumb now on the thumb-screw cap of No. 2 the cannula is forced further in until the joint B (Fig. 4) has entered the vein. Cannula No. 2 is then withdrawn a distance of about ½ inch. (Cannula No. 3 alone can come in contact with the vessel wall.) This cannula is then gently pushed into the vein to a desirable length, usually ¾ to 1 inch will suffice. Cannulas No. 1 and No. 2 are now withdrawn entirely. If the vein has been successfully entered blood will flow through the cannula. When the first drop of blood appears a syringe containing warm saline solution is immediately attached and a very slow flow of saline is maintained through the cannula. Escape of blood is thus prevented. A cannula is next attached, inserted into the vein of the donor; in a like manner again a syringe containing warm saline solution attached and loss of blood thus prevented. Everything is now in readiness for the transfusion. An empty syringe is substituted for the one containing saline solution and blood is withdrawn from donor as rapidly as possible. When the syringe is full the assistant passes it to the operator on the recipient, who removes his saline syringe, attaches syringe containing blood, and evacuates contents gently but speedily into the vein. One syringeful of blood is followed by another in rapid succession until the desired quantity of blood has been transfused.
Nine cases are reported, ranging in age from nine weeks to nine years, upon whom this method of transfusion was tried. In one case there was an increase of hemoglobin of 30 per cent. four hours after transfusion.

Comments. The time elapsing in filling and evacuating the syringe is so brief that blood does not undergo any alteration from donor to donee. No lubricant has been employed except in one case. It seemed to make little difference. However, there is no objection to a film of albolene coating the syringe. Both arms of the donor may be used simultaneously. Larger syringes with large calibered cannulas may be used but the present sizes have worked satisfactorily and fittings of syringe and cannulas are of universal gauge. Syringe and cannulas may be kept sterile in individual metal containers. They are thus in readiness for immediate use and no preparation for operation is required. The same vein can be used repeatedly for subsequent transfusions, since no thrombosis nor permanent injury to vessels occurs—as cases 1 and 9. Any quantity of blood can be transfused and the quantity is definitely measured at the time of transfusion. Rubber tubings, various pumps and gravity have been employed on animals but the best results have been obtained with the syringe cannula method. In a later paper, Dr. LaFetra and the writer will show some of the new fields of application of blood transfusion. The present cases with others will be then discussed in greater detail. The object of this paper is simply to present a new and simple method of blood transfusion.

Radiographic Studies of the Chest in Tuberculous Meningitis, by Dr. I. O. Woodruff. This report is based on 15 cases of tuberculous meningitis from the children's medical wards of Bellevue Hospital. The idea of the routine examination of the chests suggestive of tuberculous meningitis, suggested itself to the writer from a study of the plates taken in a number of cases of suspected early pulmonary tuberculosis. It seemed that tuberculous meningitis might give a series of cases ideal for this purpose, as a fair proportion would probably go to the necropsy table. A study of the autopsy records showed that there existed in the chest all stages of tuberculous infection, from rarely the mere involvement of the lymph nodes to a general miliary infiltration of both lungs. It could be learned whether the X-ray could be relied upon to diagnose early tuberculous infection of the bronchial glands and early infiltration
of the lungs, and also to what extent in those cases showing pulmonary involvement the interpretation of the radiographic shadows corresponded with the pathological lesions present.

Moreover, since autopsy records showed a pulmonary involvement beyond incipiency in 88 per cent. of the cases, it seemed that a routine radiographic examination of the chest,—in hospital work at least,—might prove to be of real value in diagnosis, especially in those cases in which the absence of a skin reaction and the inability to demonstrate the tubercle bacillus in the spinal fluid, left the diagnosis open to question. A search through 285 cases of tuberculous meningitis over a period of eight years yielded only 26 autopsies, 23, or 88 per cent. of which showed considerable pulmonary tuberculosis. However, the Von Pirquet and the spinal fluid were both negative in the same child in five, or 33 per cent. of the 15 cases which form the basis of this report.

The reports of the radiographic findings of the chest were: no tuberculosis, one case; tuberculous glands and some involvement of the right lower lobe, 2 cases; more or less extensive involvement of one or both lungs, 12 cases, or 80 per cent., a figure approaching rather closely to the necropsy findings cited above. In four of these twelve cases the Von Pirquet and the spinal fluid were negative.

To check these up, there were six post-mortem records, two of which were of the cases showing slight pulmonary and bronchial gland involvement. The other four were of cases in which radiographic reports of more or less extensive pulmonary involvement were rendered.

Group I. Slight lesions shown by X-ray, two cases. Case I, age two years nine months. Radiographic report: area of infiltration of right root involvement also right lower lobe. Also one or two shadows suggesting enlarged glands. Post Mortem: slight congestion at bases. Lungs crepitant throughout. Bronchi contain a slight amount of muco-purulent material. No tuberculosis. Glands not enlarged and not tuberculous. In this case the lower cervical glands were enlarged and caseous.

Case II. Age six years. Radiographic report: Pulmonary lymph nodes enlarged. From the very distinct markings probably a tuberculous broncho-pneumonia in the right lower lobe. Post Mortem: lungs and lymph nodes negative, show no tuberculosis. Group II. Radiographic examination: shows marked lesions. Four cases. These cases in which the above radio-
graphic diagnosis was made, all showed extensive pulmonary involvement post mortem. The plates were highly instructive and interesting.

A study of all the cases suggests that the interpretation of the radiographic shadows in the chest in children and infants when there is considerable tuberculous involvement of the lungs, can be relied upon, at any rate to diagnose the nature of the pathological process. Consequently, as there is usually considerable pulmonary involvement in tuberculous meningitis, this measure may be a distinct aid in the diagnosis of this disease; particularly in those cases in which the diagnosis is not absolutely certain owing to the failure to find the tubercle bacilli in the spinal fluid, and in which the strongly corroborative evidence of a positive Von Pirquet reaction is lacking.

It would also seem likely from a study of cases one and two that in children in whom, on clinical grounds, there is uncertainty regarding the presence of a early tuberculosi involvement in the chest the X-Ray cannot be considered a deciding factor in the diagnosis; nor can it be relied upon even in more advanced cases to furnish accurate evidence of the exact pathological lesion present.

However, these conclusions are merely suggestive, this paper is only a preliminary report, and the conclusions must of necessity be of comparatively little value until supported by much more extensive observation.

Dr. L. Emmett Holt. Tuberculosis by direct wound inoculation while not a frequent method of contracting the disease has yet occurred often enough to demonstrate the fact that this is a real danger. In 1887 Willy Meyer collected a number of such instances and added a report of a case of his own of tuberculosis acquired through ritual circumcision. Two have been reported in this country—one by Dr. Ware and one by Dr. Sara Welt-Kakels. Many cases occur which do not find their way into print.

The report herewith presented is of more than ordinary interest by reason of the virulence of the infection as shown by the wide-spread lesions and the fact that death occurred at an earlier age than any case of which I have found a record.

This case seems to complete and the evidence of infection conclusive.

An infant three months of age was admitted to the Babies' Hospital with an extensive ulceration of the penis. The par-
ents and four other living children were healthy. No evidence of syphilis or tuberculosi in the family. The infant at birth was a large child, weighing eleven pounds, and had been breast fed up to the time of admission. When eight days old the operation of ritual circumcision had been performed, the blood being sucked in the usual manner. The wound did not heal properly and at the end of a week suppuration was present and ulceration followed which began in the prepuce and gradually extended up to the time the child was brought to the hospital. Two weeks after operation glandular swellings in the groin were observed increasing in size although showing no tendency to suppuration. For the last three weeks there had been apparently a steady loss in weight refusal of food, slight fever and cough. Four or five days previously there developed a scanty maculo-vesicular eruption over the trunk and extremities.

Examination: Well-nourished, normally developed infant, weight 11 1/2 lbs., who did not appear acutely ill. About twenty lesions scattered over the body which closely resembled those of varicella. Apparently there was no itching as they had not been injured by scratching. All similar in appearance, from 3 to 4 millimeters in diameter, vesicular at the periphery and crusted at the centre giving an umbilicated appearance. The hands, feet and mucous membranes were normal. Many rales present over both lungs but no signs of consolidation were present. Heart normal, abdomen moderately distended, the spleen very much enlarged, the liver also. In the inguinal region double large nodular swelling with no signs of suppuration. The penis showed complete destruction of the skin by ulceration quite to the abdominal wall and the base of the scrotum. It was one granulating surface from which the pus was freely discharging. At the meatus a deep ulceration.

The tuberculin skin test gave a strong positive reaction. Tubercle bacilli were found in the discharge from the penis, in the sputum, and in scrapings from the cutaneous lesions described.

The child lived sixteen days after admission. During this period there was constant temperature usually varying between 99 and 100 F but occasionally going to 102° and 103. There was progressive weakness, steadily increasing cough and rales throughout the chest. The glandular swellings in the groin became larger but did not soften. No cerebral
symptoms were present, but there was considerable restlessness and lumbar puncture was made two days before death. A clear fluid under normal pressure was obtained which gave a faint globulin reaction and showed an excess of cells. Death occurred from exhaustion. Autopsy: Body—well nourished, lesions on the skin still showing.

Brain—Three or four miliary tubercles were seen over the base and a few over the convexity, but no evidences of meningitis were present.

Lungs—Both lungs were everywhere studded with miliary tubercles and small tubercular nodules. They looked much as if they had been infected by a syringeful of tuberele bacilli injected into the trachea. No part of the lungs had escaped. The bronchial and mediastinal lymph nodes were caseous but not very large, none showing softening.

Heart—A small yellow tuberele was seen upon the coronary artery. A tuberculous nodule was found in the wall of the right ventricle and another one in the wall of the right auricle. It involved the pericardium, endocardium and cardiac muscle, and was cheesy.

Abdomen—The parietal peritoneum was studded with miliary tubercles and tubercular nodules especially over the diaphragm. The substance of the spleen showed tubercular nodules of large and small size. The liver, kidneys, adrenals, and pancreas contained tubercular nodules. The stomach and duodenum were normal. But throughout the rest of the small intestine were great numbers of tubercular ulcers some of which extended quite to the peritoneal coat. The same lesions were found in the caecum, colon, and rectum. The mesenteric lymph nodes were greatly enlarged and caseous. Also the largest inguinal lymph nodes. Extending upward from these were a chain of large caseous retro-peritoneal lymph nodes which followed the iliac arteries and above the aorta. One of the iliac arteries contained a cheesy lymph node in its adventitia, the

**Heliotherapy as seen in Rollier’s Clinic.** Dr. I. S. Hirsch said Leysin, a village in the southwestern part of Switzerland at an elevation of 4,000 feet, has exceptional climatic conditions of intense sunlight, dry atmosphere, free from dust and insects, but little wind, a moderate warmth in summer and not too great a cold in winter, thus permitting insolation during the winter as well as summer and making possible uninterrupted life in the open air.
Dr. Rollier in 1903 inaugurated there the first clinic for the exclusive treatment of surgical tuberculosis by sunlight. The feature of his sanitorium treatment was the treatment of surgical tuberculosis at an altitude with the application of local and general insolation during winter as well as summer.

So successful was he, so remarkable the results of his treatment and so numerous the cases referred to him that three clinics, accommodating about 300 patients had to be built. Charges range from 7 to 10 francs per day.

One of the hospital buildings containing about 80 beds for children and adults, built in accordance with the most approved ideas of hospital construction stands on the mountain side overlooking the village of Aigle, and like the other buildings, faces south and is protected from the winds of the north and east by the hill upon which it stands. It is almost entirely surrounded by fir and ash trees, but in such a manner that it still receives the full value of the sunlight at all times of the day. Large and spacious balconies are provided on three sides of the building, so that all the beds in the interior may be wheeled out through the wide windows, constructed without ground sills. All the patients' rooms face south. By means of large folding doors the wards may be completely exposed not only to the south but also to the east and west. On sunless days and at night the airing is continued in this way—the occasional wind or storm being shut out of means of these doors. When the sun shines the beds in the early morning are pushed out upon the balconies, from whence the view is beautiful.

The treatment instituted by Rollier consists first of the general exposure of the entire naked body and second of the localized exposure of the particular site of the disease to the sunlight without any intervening lenses or glass. When the days are cloudy and there is no sun, a simple exposure of light and air is carried out, but the patients are partially clothed. Individuality is the watch word of his treatment based on the general principles stated.

When the patients have accommodated themselves to the new environment, which takes from several days to three weeks, an exposure to the sun is given, beginning with the feet and gradually extending upward, until at the end of eight days, the chest is reached. The parts are exposed a few minutes every other day, then several times a day. First feet and ankles, then ankles and knees, then thighs, and thus part by-
part until the entire body is pigmented. It is only then when the entire body is pigmented that a general exposure is given.

It is absolutely essential for the success of the treatment that no dermaitis occurs. The eyes are protected from the direct light of the sun. The period of exposure to the sun of the entire body is gradually increased, from two to four hours or twice a day, then to four to five hours once or twice daily. Even when the maximum exposure is given there are two hours during the day when the patient is removed from the sunlight.

Under this exposure the skin becomes markedly pigmented, turning to a very dark brown color. An early advent of this pigmentation is a sign prognostic of good results. Blondes do not respond, nor do they bear the sunshine as well as brunettes and require longer treatment. The pigmentation is considered to play a very important role in the treatment because it is believed that it lowers the resistance of the skin to the passage of the light rays, and modifies the heat rays so as to remove the possible harmful effects. For the heat of this intense sunlight may be exceedingly harmful. The exposure to the sun causes also an hypertrophy of the skin itself, increases its vitality and resistance and protects the organism against extremes of temperature; such conditions as acne or furunculosis are never seen in patients so exposed. In winter, when there is at least one meter of snow on the ground and sometimes two, those children lie about naked in the sun on the balconies and those that are well enough to walk wander about naked in the sunlit snow, the radiations from the snow being so intense that the temperature in the sunlight is 50 to 60° C., while at the same moment it may be 0° in the shade.

After general pigmentation has been obtained the rays are applied locally to the site of the disease whether it is hip, knee or spine. At first only for about five minutes per day then two to three times a day, then ten to fifteen minutes, then finally for a period of two to six hours. The joint is usually immobilized by means of counter-weight extension. When immobilized by a plaster jacket an opening is cut in the jacket in front and back to permit the exposure of the affected parts to the sun.

The first local effect of the sun’s rays is an analgesic one produced with remarkably rapidity and quickly permits the removal of the fixation apparatus.

In the treatment of caries of the spine, the patient receives
half the sunlight treatment on his back over the kypjos and half on the abdomen for the treatment of the abscess. When suppuration with sinus formation is present, sinuses are not treated antiseptically or surgically but exposed directly to the sunlight. Sequestra are extruded without any surgical assistance and the fungus granulations are absorbed. The wounds heal with soft pink scars. The thing that impresses one at Leysin is the excellent health of all exposed to the sunlight, and the rapidity with which, aside from the general condition, the local condition improves. The patients arrive there usually emaciated, anemic, racked with fever, with numerous joints involved and the condition frequently complicated by discharging sinuses, the cases of all being of the worst kind, those which have been practically given up as hopeless after every other method of treatment has been tried. Yet after several months' sojourn in this climate under this routine, they take on weight, the muscular atrophy disappears, the skin becomes smooth and glossy, the temperature falls, and the blood condition improves. The demonstration of his results as controlled by photograph and radiograph, is convincing even to the most skeptical. All forms of peripheral tuberculosis are thus treated also peritonitis, cystitis, adenitis and all form of intestinal tuberculosis.

Rollier applies this method to tuberculosis of the sternum and the ribs which are practically inoperable from a surgical standpoint, but which may be cured after a year's treatment.

The most wonderful result of all, perhaps, is the reformation of the joint after almost complete destruction and ankylosis. This effect upon the joint is apparent early in the treatment. The limb itself, distorted and swollen returns to its normal form. In many of these cases the radiograph upon admission shows that the entire form of the bone is completely gone, with only a vistage of the periosteum remaining, yet one year later the bone is entirely reformed and in an almost normal condition, with the joint outline distinct. The sears upon the joints in many of the cases are the tell tale marks which indicate the condition before treatment.

Rollier's results speak for themselves. About 90 per cent. of the cases are cured. In 1½ years out of 60 cases of tubercular joints 54 were healed, 5 improved and one died. Of 60 cases of tuberculosis of the bones 54 were healed, 5 improved, and one died. Of 45 cases of tubercular peritonitis, 32 were
healed, 5 improved and one remained stationary while four died. Of 88 cases of tubercular lymph nodes, 81 were cured 6 improved and one died.

The effects are undoubtedly due to the proper application of the sun’s rays and all other factors are but adjuvants to the treatment. Under the general effects of the exposure may be considered the vaso-motor excitent effect on the skin reacting on the internal circulation resulting in an increased metabolism. The pigmentation and hypertrophy affects the condition of the red blood corpuscles, raises the hemoglobin index and increases the number of the cells themselves. The local effects are the well known bactericidal effect of the sunlight on the tubercle bacilli and puscocci, etc., and the infrarred and ultra violet rays which have undoubted chemical and heat effects. It is to the ultra violet rays that Rollier ascribed the greater part of the results achieved. Rollier insists upon the importance of allowing nothing to interfere between the exposed surface of the skin and the sunlight. This is founded upon the physical principle that the thinnest sheet of glass will completely absorb the violet rays. On dark or stormy days the wounds are treated by either the X-Rays or Cooper Hewitt light both containing ultra violet rays.

**Tuberculin Skin Reactions in Infancy.** From the service of L. Emmett Holt at Babies’ Hospital, reported by Alan Brown, M.D., resident physician, Babies’ Hospital.

Local reactions have been described as long ago as 1900 by Epstein, Escherich and Schick, but no definite distinction was made between subcutaneous and puncture reactions. In 1907 van Pirquet introduced the cutaneous application. The cutaneous test is by far the best for diagnostic purposes and it is apt to be more reliable than any of the others. The test is specific as the experimental evidence on this point brought out by von Ruck, Mantoux, Lord Lawrason Brown and many others shows. Many of the criticisms of the test have been founded on faulty premises, imperfect technique, and misinterpretations.

**Technique:** The simplest method should be used; the elaborate needles and scarifiers, etc., serve only to complicate matters and in many cases produce too much local reaction which leads one to faulty conclusions. For the past three years the undiluted tuberculin has been used. A small drop is placed on
the outer side of the forearm which has been previously washed with alcohol and after making the control scratch with a sterile needle, fully two inches from the tuberculin, a similar scarification is made through the drop, each scratch being less than a quarter of an inch in length. It is best to hold the infant’s arm until it is dry. If excessive reaction occurs it is well to cover it with gauze in order to prevent infection.

The reaction consists of a red areola and slight induration. The reaction occurs in several forms.

1. The ordinary reaction which usually appears within 12 to 18 hours, and is at its maximum intensity in 24 hours, remains at its height for one or two days and then gradually disappears inside of three to four days followed by a slight local desquamation.

2. A rapid reaction which occurs within a few hours only to disappear within 10 to 12 hours. This may readily be looked and is of no diagnostic importance.

3. An intense reaction which appears about the same time as the first form but may take two or more days to reach its maximum. Rarely vesiculation may occur.

There is more or less induration of the skin. There seems to be no relation between the intensity of the reaction and the activity of the disease.

The total number of tests tabulated is 650 divided as follows: one to three months, 62 cases.

Thirteen had a positive reaction, 4 had a definite history of contact with a tuberculous individual; all these infants died and the diagnosis was confirmed by autopsy in every case. Of the 59 negative cases autopsies were performed in 10, in none of which was a tuberculous focus found.

Three to six months, 102 cases.

Seven responded to the test; six of the infants died and diagnosis was confirmed by autopsy or by the finding the bacilli in the sputum or cerebro-spinal fluid. The remaining case was in a child suffering from marasmus, who was discharged unimproved. Of the 95 cases giving a negative response, 13 came to autopsy, in none was a tuberculous focus found.

Six to twelve months, 217 cases.

In 43 cases a positive reaction was obtained, 35 or 81 per cent. of which proved to be tuberculous either by autopsy or bacilli findings. Five died before the result of the test could be determined. Of the remaining three positive cases two had
pneumonia and were discharged cured, while the third had adenitis. In the 174 giving a negative response 16 autopsies were performed. In only one case was a miliary infection disclosed. This is the solitary instance of the entire series of a want of correspondence between the results of the test and autopsy findings. Twelve to 1 months, 156 cases. Of these, 37 gave a positive reaction, 20 were proved either by autopsy or bacilli findings to be tuberculous. Ten of the remaining 17 cases were cases of clinical tuberculosis; discharged unimproved. Three improved, and three cured. Of the 119 giving a negative response to the test there were 15 autopsies performed and in none was a tuberculous focus observed. Eighteen months to two years, 112 cases. 24 gave a positive reaction and of these 15 or 62 per cent. were proved tuberculous by autopsy or bacilli findings. Of the remaining nine cases, four were moribund on admission and died within 24 hours. All were proved tuberculous by autopsy. Not one of the latter cases responded to the test. Four others were cases of active tuberculosis and were discharged unimproved. One case was cured with no evidence of tuberculosis. Out of the 88 cases giving a negative response four came to autopsy—none showed evidence of tuberculosis.

Conclusions: 1. In view of the fact that 70 per cent. of positive cutaneous reactions in hospital, infants under two years of age (which do not include moribund cases or cases with active tuberculosis that were discharged) have definitely been proved fatal, one would seem justified in stating that at least 90 per cent. of positive cutaneous reactions in hospital infants who under two years, and especially so in infants under one year, means active and fatal tuberculosis and furthermore that the lesions are, with but rare exceptions, general in distribution.

2. In suspicious cases a second and even third test should be made if the first proves negative.

3. The infant shows a high degree of susceptibility to tuberculosis as is shown by the fact that of 61 cases of definite exposure 41 or 67 per cent. responded to the test and of these 37 or 60 per cent of those exposed, died of tuberculosis.

4. A negative cutaneous reaction in infancy except in moribund cases or those suffering from measles is almost conclusive evidence against the existence of a tuberculous focus.
tubercular character of which was confirmed by microscopical examination. Three tubercles were seen on the mucous membrane of the bladder. Both middle ears contained pus.

No physical signs of disease could be discovered in the chest of the man who had performed the operation. But he looked pale, thin and almost emaciated. From his sputum two acid-fast bacilli were found which looked like tubercle bacilli.

This case seems complete and the evidence of infection through the circumcision wound conclusive. At death, which occurred before the child was three months old practically every organ in the body was involved. Specially noteworthy in the lesions are the tubercular nodules of the iliac artery and of the myocardium, the latter lesion has never before been seen by the author. Also the tuberculides of the skin.

The author here reports the findings of the 40 cases scattered throughout the literature. Sixteen are known to have died; seven partially recovered or were serofulous; in twelve the final results were not given; only five recovered. The youngest fatal case is the one here reported. In several instances death occurred as late as eleven months from tuberculous meningitis. The usual cause of death was general tuberculosis. Several children have been infected by a single operator. In all the reports the fact is stated that the families were free from tuberculosis. The earliest symptoms were usually observed a week after the operation. The wound does not heal but suppuration occurs and ulceration soon follows. The early ulcer is usually on the frenum. It remains localized or may become general. At the end of the second or third week inguinal adenitis develops. The cases in which early suppuration of the inguinal glands took place and which were operated upon gave the best results. The symptoms of a wide spread general infection rarely occurred earlier than the third or fourth month.

The diagnosis was established in many of the cases by the clinical history alone. That the infection spreads through the lymphatic system seems certain and early removal of the inguinal glands would therefore appear to be the most important measure to be employed in checking the extension of the infection. This must be done early to be successful.

In a large proportion of the cases reported the first diagnosis made was syphilis, and the patients were treated without benefit and with the loss of valuable time. It is the author's
opinion that syphilis is much less frequently acquired in this manner than is tuberculosis and the latter disease should be first suspected. There must be a large number of cases that have never found their way into the literature and it is also certain that syphilis has been often acquired in this way. The statement of the late Prof. Maas, the German surgeon must be emphasized, that "it is the duty of the physician to raise his protest against the performance of ritualistic circumcision in every case."
RETROSPECT OF CURRENT PEDIATRIC LITERATURE.

Dsseases of the Skin and Uro-Genital System
Under the Charge of
KENNETH BUCKLEY, A.B., M.D.
New York City

Rudimentary Marsupial Pouch.—Ward Brit. Journ. of Dermat. 1912—XXIV—366.—Reports of a boy normal in all respects except for an interesting congenital anomaly. In the mid-line over the lower sternum was "a circular pocket of skin, entered by a small opening placed a little to the left side, and a little below the center of the pocket. The diameter of the pocket was an inch and a half, and the opening measured one quarter by one eighth of an inch. The inside of the pocket was quite smooth and was lined by normal skin. There were hair follicles and sweat glands alike in the skin overlying the pocket and in the skin lining it. There were no sign of scar-tissue or traces of old inflammation or injury around or inside the pocket". Ward suggested its similarity to the marsupial pouch in kangaroos and opossums.

Necrotic Tuberculides.—Bunch. Brit. Journ. of Dermat. 1912—XXIV—357. Bunch describes two cases presenting necrotic tuberculides, one child and one adult. In the child, a boy of 12, the disease was progressive, new lesions appearing and the older lesions subsiding leaving in their wake, shallow atrophic scars. The chief interest in the case lies in the treatment. For six weeks the child was treated by tuberculin (form not stated) injections without benefit. Six years later injections of Rosenbach's tuberculin was given over a period of more than six months, the result being apparently favorable. The case is still under treatment.

A Clinical Note on Hyperhidrosis Circumscripta—R. L. Sutton. Journ. A. M. A. 1912—LIX—1913. Sutton reports the case of a boy of six years who had had ever since early childhood, near the inner extremity of the left eyebrow, an area in which sweat production was greatly increased. At times a teaspoonful would be secreted in 15 minutes. The sweat was normal. Pilocarpine increased general sweating and particularly the local sweating. Small doses of atropine controlled it. Galvanization, high frequency, and sudden temperature change increased it. The child was otherwise normal. The case was cured, at least temporarily, by seven x-ray exposures. Sutton thinks that later further x-ray exposures will be necessary until a considerable degree of permanent atrophy of the sweat glands is obtained. The case is of interest because of the location and slight extent of the area involved.

Syphilis of the New-born.—M. E. Jeanselme (Jour. de med. de Paris, March 8, 1913) relates a case of infection of the nipple of a healthy wet nurse by a syphilitic infant given her to nurse. The fissure infected was regarded by the attending physician as not suspicious until some time after its appearance, when the mother's own infant had already been infected. The author believes that every old-looking, wizened infant, even if not showing pemphigus at birth,
should be considered suspicious and not given to a wet nurse until observation had shown it to be healthy. Physicians should be most careful in this matter of diagnosis, and of warning the wet nurse of her danger of contagion.

Vulvovaginitis in Children.—At the Children's Hospital in Boston all cases of vaginitis are treated at a special clinic. E. R. Spaulding (Amer. Jour. Dis. Child., 1913, v. 248) presents a study of eighty-three cases, fifty-six of which showed the presence of gonococci. She is convinced that all cases of vaginitis with a persistent discharge, which at any time has been profuse, are due primarily to the gonococcus. The disease may extend over many years, during which time there may be many recurrences, and that the periods of latency may at least be as long as eighteen months. Vulvovaginitis in children, although it may remain a local disease, is liable to any of the complications seen in adults. The most efficient treatment does not insure a permanent cure. The treatment which has given the best results is local treatment plus vaccine treatment. The local treatment corresponds to the treatment given a case of specific ophthalmia and consists in a cleansing douche followed by the instillation into the vagina of some preparation of silver. The usual directions given the mother are to use a two-quart fountain syringe in which there is a saturated solution of boric acid, and to which the smallest rectal tip is attached. This is to be given three times a day for at least ten minutes, as warm as the child can stand it, and with hot water added to it, that the temperature may be kept up. Following this three times a day, either argyrol 25 per cent., or solution of another silver salt 1 to 1,000, is instilled into the vagina with a small rubber ear syringe. Gonococccic vaccine is also given, beginning with doses of 50,000,000 and increasing 25,000,000 until 400,000,000 is reached. The vaccine at present is being given once a week, but previously was given twice a week, but with less rapid increase in the dose.

Diseases of the Alimentary System.

Under the Charge of

JAMES WARREN VAN DERSLICE, M. D.
Assistant Professor of Pediatrics, Rush Medical College, Chicago, Ill.

Pancreatic Ferments in Infants in Acute Intestinal Indigestion.—In a former communication by A. F. Hess (Amer. Jour. Dis. Child., 1913, v. 268), which considered the pancreatic secretions in chronic malnutrition in infants, it was shown that the various ferments of the pancreas are normally secreted even in advanced instances of marasmus or atrophy. In the present study of an acute disease, of acute intestinal indigestion, or alimentary intoxication, which was carried out also by the direct method, by the use of the duodenal catheter, the lipase was found deficient, although the two other pancreatic ferments were present in considerable amount. The deficiency of lipase seemed to be to some degree characteristic of this disturbance; it is not a general characteristic of all febrile conditions, and was not met with in pneumonia or empyema. It is possible that the lack of lipolytic activity in this disease should be correlated with the clinical manifestation of fat intolerance, and the metabolic studies showing a deficient absorption of fat.

Appendicitis in an Infant Sixteen Days Old.—Dr. Charles M. Remsen, of Atlanta, Georgia, reports in Annals of Surgery for December the case of an infant sixteen days old who was brought to the Johns
Hopkins Hospital on account of persistent vomiting, with red-colored stools. The little patient gave evidence of being in great pain. From the right external abdominal ring a swelling protruded, filling the ring completely and extending down the lower limits of the scrotum. On incision the author found that he was dealing with a definite hernial sac which contained a markedly inflamed, indurated and reddened appendix, on the surface of which were numerous splotches of fibrin. The distal half of the appendix, which was quite long (about 8 cm.), was caught in the hernial pouch and glued in this position by an outpouring of fibrin and the presence of some early, delicate adhesions. The proximal half of the appendix was contained in the general peritoneal cavity. The hernial sac contained no bowel.

The appendix was ligated, excised and turned in, being secured with a purse-string of fine black silk. The operation was completed secundum artem and the patient made an uneventful recovery, leaving the hospital ten days later at the age of twenty-six days.

Dr. Remsen calls attention to the lack of any special tenderness or any muscular rigidity or spasm in the right iliac fossa and the presence of blood in the stools. He discusses the question of diagnosis in this case which is a very interesting one.

**Therapeutics of Uncontrollable Hemorrhages in Young Children.**—Kurt Bluhdorn (Berl. klin. Woch., Jan. 6, 1913) believes that whenever we have an uncontrollable hemorrhage in an infant we have to do with a case of changed coagulation reaction. The blood no longer coagulates in the normal manner. The author recites three cases of uncontrollable hemorrhage of three different types in infants. The first was a case of melena neonatorum; the second of purpura abdominais; the third of septic bleeding of the navel. In the treatment of these cases the author made use of the injection of serum, and as diphtheria antitoxin was at hand he employed that for the injections. Whipple has shown that coagulation is less than normal in melena neonatorum. In the author's case of abdominal purpura the coagulation was also delayed. Whipple found fibrinogen and lime salts present in melena, therefore, absence of thrombin is probable in that condition. This was probably the case in purpura. The results of the serum injection were excellent and all three of the author's cases recovered. The doses used must be large. Lime salts were used in connection with the serum injections.

**Treatment of Intestinal Parasites.**—By Dr. Emil Brunor. Symptoms of intestinal parasites are so well known, that I will not burden the reader with any lengthy description as to the etiology, and symptomology of parasites.

The most common form in children is the tape worm, tanaesolum, or tanaesaginatta. The treatment consists in giving the least toxic of all anthelmintics, which is the pumpkin seeds. The best way to administer pumpkin seeds is in the form of an emulsion. Take one ounce of pumpkin seeds, grind them with sugar 1½ oz., and orange flower water ½ oz., add enough water to make 4 ozs. Administer the mixture without straining in the morning, preferably fasting. One hour after administer a Castor Oil purge. In later years preparations of Maleferm may be used, about 7 grains for every year, mixed with calomel, one grain for every year. If the child can swallow capsules it is preferable to administer the above formula in capsule form, otherwise the following emulsion may be given: Etherial oleoresin maleferm, one dram; syrup of ether, three drams; peppermint water, three drams, emulsion of almond oil, two ozs, or it may be given in the form of a jelly. Oleoresin maleferm ½ to one dram. Calomel two to five grains, water sugar of each ½ oz. Gelatin sufficient quantity to a jelly to be given in teaspoonful doses every 10 minutes.

An hour after the last dose has been given, give the following powder in a little jam: Powdered scammony; powdered rhubarb for a
each 3 grains. Sugar and milk 10 grains. This dose is suitable for a child five to six years of age. In case of failure with maleferm, use the bark of pomegranate root. It is given in doses of 2 drams for 3 years of age; one ounce six years of age; 1½ oz. 10 years of age; or thymol may be used 5 grains divided into three doses for a child 3 years of age; 12 grains divided into three doses for a child 6 years of age.

The fluid extract of pomegranate bark is easier to administer and may be given in sugar water or the alkaloid may be given as follows:

Pelletierine tannate, one grain for every year of age followed with a saline cathartic. As far as the prophylactic treatment, the only thing to be observed is that the meat consumed by the patient is well cooked, and the vegetables, salads, etc., are well washed. The stomach worms or round worms are treated with santonin and calomel, ½ grain of each for every year of age, given fasting and followed with a saline cathartic. The fluid extract of pink root and senna is given for that condition, and is best taken in syrup of orange flower water, say 10 minims of fluid extract to a dram of syrup of orange flower water. In this case the cathartic is not necessary. The senna contained therein is sufficient. The treatment of thread worms is practically the same as the above, with the exception that the treatment will have to be supplemented with enemies of quassia chips, one oz. to the qt. of boiling water, or normal saline solution. The quassia chips have a toxic effect on the thread worms. In addition to the above, there are several anthelmintics such as Kousso and Kamala, but they are so seldom used and their strength is so variable as to have become well nigh obsolete.

A Note on a Case of Mericism.—By John D'Ewart, M.B., Lond., M.R.C.S. Eng., L.R.C.P. Long. Mericism, or ruminating—physical, not mental—is sufficiently rare to warrant the recording of the following case:

The patient, unmarried, consulted me on account of subacute arthritis. On her first visit she complained of eructations of food, and thinking this to be due to the administration of a salicylate, an alkali was added to the medicine without effect—in fact, the eructations were worse. As the result of a demand for details of the condition the following history was obtained: The eructations come on a quarter of an hour after food and last for about two hours; they are usually accompanied by the actual return of more or less food; sometimes this could be swallowed, but often the return was so much that it was spit out of the mouth. The food at the end tasted just the same as at the beginning, and there was no control over the return or over the amount. All meals gave the same result, but milk and lemonade were very bad, and liquids were worse than solids.

The patient is 22 years of age, has had no serious illness, and has been troubled with rheumatism for three years, also with her "nerves." Two years ago she consulted her medical attendant for these "risings," and he told her she had acid dyspepsia, and for some months treated her accordingly, with no effect. The condition is worse at some times than others, being particularly bad if she is worried or excited—for example, the fear of leaving home on account of her rheumatism she thinks is the cause of the condition being worse now. As regards the family history, her father, mother, and two sisters have never been troubled in this way; her father is an only child, and his father and mother never had any trouble of the kind to his knowledge. Her maternal grandparents were also free, as were also her maternal uncles, aunts, and cousins. The known family history extends to 32 persons.

Assurance that there is nothing to worry about, and that the condition is more interesting than dangerous, has already made a great improvement, though no meal has as yet gone by without some regurgitation.
The Mucus Extractor in Asphyxia Neonatorum.—H. B. Oxenham, M.B., Ch.M. (Australasian Med. Gaz., Nov. 23, p. 528).—The mucus extractor is an instrument rapidly coming into use in obstetrics in Ireland. All nurses and students during their training in the Dublin Maternity Hospitals are compelled to carry one; yet outside of Ireland its use is, except to a very few, practically unknown. Most of these few use a metal catheter or a cylindrical suction tube, with which there is the exceedingly unpleasant and dangerous possibility of sucking the mucus into the operator’s mouth.

During a difficult labour, and especially in breech cases, the child has often before birth made spasmodic efforts to breathe, and has thus blocked its respiratory passages. In a bad case of asphyxia it is often impossible to clear the trachea, and thus render breathing possible, without the aid of the mucus extractor, or its unpleasant substitute, the catheter. The amount of thick viscid mucus and liquor amnii obtained is astonishing. The usual treatment of swabbing out the throat with a piece of cloth is in many of the cases hopelessly inadequate. In all cases of asphyxia the importance of being sure that the air passages are clear cannot be over-estimated. I have seen strong babies in blue asphyxia make violent efforts to breathe with no success until the instrument has cleared the passages. Babies in blue asphyxia should never be allowed to die, and usually removal of mucus is all that is necessary.

Infant Feeding in Health and Disease

Under the Charge of

MAURICE OLIVER MACID, M. D.

Adjunct Pediatrist Beth David Hospital, New York City; Assistant Visiting Physician O. P. D. Pediatrics, Cornell University Medical College;

Formerly Physician in Charge of Infants’ Milk Depot of the New York Milk Committee, etc., etc.

Feeding in its Relation to Infant Mortality.—Dr. Joseph E. Winters before The Medical Association of the Greater City of New York Med. Record, first gave a number of statistics showing the enormous mortality now met with among infants under one year old, and went on to say that this would in large measure be prevented if mothers could universally be induced to nurse their offspring. That women could, as a rule, be brought to do this had been shown in some of the European schools for mid-wives. The fact that mothers did not more generally nurse their infants was due to a very large extent to the obstetricians and mid-wives, and the time had now come when there should be a change in this respect. The act of parturition was only half completed when the child was delivered, and it ought to be realized that it was as essential to the mother as to the infant that the latter should be nursed at the breast during the puerperium. At the end of gestation the uterus and its blood vessels were enormously enlarged, and in order that the involution should be successfully accomplished it was necessary that the organ should contract powerfully and continuously. Now this could be secured only by the stimulus afforded by the act of nursing. Every time that the infant took the breast the uterus could be felt to contract firmly, and by this nursing, post partum hemorrhage could be prevented and perfect involution effected. It should thus be seen that most of the long train of evils, such as uterine displacements, etc., which now made women chronic sufferers and brought them to the gynecologists could be avoided if nursing at the breast were more generally practised. As to the infant,
the colostrum was exactly what it required at the time, and the green stools which it often caused were entirely physiological. Such was the wonderful provision of nature for both mother and child. The vomiting not infrequently observed in the latter was really of no consequence. It was a common practice to give the newborn infant water, but this was a mistake, as it was apt to make it refuse to take the breast. It should be put to the breast just as soon as the mother had received proper attention, and during the colostrum period it should be allowed to nurse as often and as long as it would. It was not necessary that breast milk should be the exclusive food of the child for a very long period, and as early as the second month it might with advantage be allowed one bottle of properly prepared cow's milk in the twenty-four hours. In this way the mother could have an undisturbed night's repose, and the weaning could be gradually and easily accomplished. As a rule, women nursed their infants for much too long a time. The only substitute for mothers' milk was properly modified cows' milk. The young infant required a strictly animal food, and all the proprietary foods were positively injurious. Physiology, as he had long maintained, was the keynote of infant feeding. The food should be of the composition of the body, and that which he had elaborated from the top half ounce of cream was based on strictly physiological principles and was identical with mothers' milk. The proteid was flocculent, and would thus pass freely through the extremely narrow orifice of the infant's pylorus. He was convinced that if the measures he had advocated were to be adopted generally, a most gratifying reduction in infant mortality would result.

The Value of Barley Water in the Modification of Cows Milk as an Infants' Food—"Barley water" goes hand in hand with cow's milk as an artificial food for infants and young children. It is therefore a very useful demulcent, and slightly nutritive fluid, possessing to a slight extent the property of preventing ingested cow's milk from coagulating into hard curds in the child's stomach.

The sugar of human and cow's milk is chemically identical and the fats are quite similar, but there are important differences in the quality as well as the quantity of the nitrogenous material. This in both fluids is complex, being made up of casein, lactalbumin, and peptides. Casein is an acid substance and is present in combination with an alkali, chiefly as calcium, casein. The casein of cows' milk is readily precipitated by dilute acid, and is thrown down in large firm masses. That of human milk requires more acid and is precipitated in fine soft particles, which are divided by an excess of acid.

In cows' milk the casein is coagulated into large firm masses, while with human milk a light loose curd is formed. In the stomach the acid gastric juice has the same effect, producing in the first instance (cows' milk)' a coagulum that is most difficult to digest; in the other (woman's milk) one of the vastly less bulk and readily attacked and easily broken down by the gastro intestinal ferments.

To overcome these objections prominent Pediatricists, Jacob, Chapin, Smith and other authorities advocate the addition of cereals (Barley water) to cows milk as an aid in the infants digestion.

The stomach in artificially fed children is often so exceedingly delicate that it is apt to revolt against any food having the slightest unpleasantness of flavor. From the total absence of irritating properties Barley Water is peculiarly adapted to cases in which the gastric or intestinal mucous membrane is inflamed.

In feeding babies we have to take the hard-curdling casein of cows' milk, and feed it to the baby that is used to a soft-curdling milk from the mother, and this is where the great trouble arises. The hard, lumpy masses of casein that are thrown down by the rennet and acid in the stomach are difficult for a baby to digest, and it is well to bear in mind that the digestive enzymes act by contact alone. Almost all indigestion that we have in infants, as well as adults, is due-
CURRENT PEDIATRIC LITERATURE

to food getting into the stomach in hard lumps, so that the enzymes cannot get at it. The casein of cows milk clots in hard, lumpy masses, the digestive enzymes of the stomach cannot get at it, and any means by which we can break up the clot and make it more flocculent will increase the digestibility of the milk and it is this characteristic that has for generations past rendered "Barley Water" such a valuable adjunct to the modification of cow's milk as an infants food.

Through the influence of the starch in Barley Water seemingly, the curd is permitted to form only in small, soft flakes, as in mother's milk, thus allowing the infant's digestive enzymes to come almost into perfect contact with the coagulum or casein.

Theoretically the child under six months of age, because of the deficiency of salivary and pancreatic secretions, is said to be incapable of digesting starches. Practically this is not true. Nearly every fluid in the human economy has a diastatic ferment, and as a matter of fact the very young infant does digest starches. We have seen too many babies successfully fed on arrow root to deny this fact. Heubner, of Berlin, showed that diastase can be found in the parotid gland of the infant two hours old, sixteen days and two months old. An infusion of parotid gland converts starch into sugar from the beginning of life. An infusion of pancreatic gland does not convert starch into sugar, and its diastatic power even at the end of a year is but feeble.

Finkelstein, Jacobi, Keller, Heubner and other Pediatricians of wide research and clinical experience are in accord that the addition of cereals (Barley Water) is not only allowable but most warmly recommended, not only in older children but in very young infants. They are, from the standpoint of digestion and gain in weight, the advantages of the cereal decoctions are found in the finer sub-division of the casein curd in the stomach, in the relief from constipation, in the disappearance of soapy and dyspeptic stools, in the proteid-sparing power afforded by the cereals, and finally, in the general increment of growth. He believes that the cereal milk mixtures are the most valuable of all methods of infant feeding at present in vogue for healthy children, very often from birth, but certainly after the second or third week of life.

Dietetic Treatment of Convulsions and Allied Conditions Occurring in Children.—By C. Grulee (Amer. Jour. of Dis. of Children, March 1913).

Grulee in his metabolic experiments on dogs found that there was no regular variation in the formula \( \frac{Ca}{Na} \) or \( \frac{Ca}{Na} + \frac{Neg}{K} \). These dogs were animals in which a hyperirritability of the nervous system existed, as shown by the increased electrical irritability and as produced by removal of the thyroid gland. In estimating the salt content of the brains of five dogs there was regularly found to be a decrease in the calcium content in the thyroidectomized animals. It was not possible to show any variation in electrical irritability by intra peritoneal injections of normal sodium and calcium salts in the quantity of 40 to 45 cc. of sodium salts, and 2 to 4 cc. of calcium salts in 24 hours. Grulee found that under normal conditions, when carefully estimated, that the electrical irritability of dogs varies quite widely. There are physicians who will question the statement that whey is distinctly irritating to spasmodhilic infants; and Grulee himself throws some doubt upon the statement by the admission that the amount of the sodium and potassium salts which would correspond in quantity to that contained in whey does not regularly produce increased electrical irritability. The failure of sodium and potassium to produce results may be explained either by fact that the form in which the sodium and the potassium (NaCl and KCl) was given was not suitable for absorption from the gastrointestinal tract or that these salts were not in themselves irritating factors. The author believes that the latter proposition is the more probable.
Orthopedic Surgery
Under the Charge of
JAMES K. YOUNG, M.D.
Professor Orthopedic Surgery, Philadelphia Polyclinic; Clinical Professor Orthopedic Surgery, Women's Med. College, Philadelphia.

Assisted by
A. BRUCE GILL, M.D.
Assist. Surgeon to Widener Memorial Industrial Training School for Cripple Children, Philadelphia.

The "New Heel," With a Pathognomonic Sign.—High-heeled shoes that women wear throw the weight of the body upon the heads of the metatarsals. The heel is the strongest part of the foot and is designed to support the main part of the body's weight. But when the weight is thrown forward upon the anterion arch, a new heel develops there. The anterion arch becomes broken down, enlarged, rigid, prominent, and bulging. It performs the function of a heel and it looks like a heel. Every step that is taken traumatizes the heads of the metatarsals until there results an inflammation in the metatarsophalangeal joints in which are involved not only the soft parts but the periosteum and the cancellous bone as well as is demonstrated by X-ray pictures and by operations. The bones change in shape, and are rendered liable to disease, osteo-arthritis.

The author considers the following sign pathognomonic of inflammation of the anterion arch before the condition has become chronic and obvious. If the examiner suddenly fixes the toes it causes the patient severe pain which is proportional to the degree of inflammation present in the anterion arch. No pain is caused in the normal foot. Then inflammation is present in the metatarsophalangeal joints the patient holds the toes in extension as provides the largest amount of space within the joints. When the toes are suddenly fixed the joint spaces are lessened and the joint capsules are suddenly distended. This, of course, causes pain.

There is less pain in the later stages of flat-foot than in the earlier, for the bones and ligaments and muscles of the feet have then altered themselves to suit the condition. But rigidity and deformity are then the greatest.

In acute inflammation of the anterion arch the patient should be kept off his feet, if possible. If this is impossible, the arches should be supported by felt. In the chronic stage an anterion arch support may be built into the shoe, and, of course, the shoes should be changed. To have the patient immediately use a proper shoe with wide toe, broad base, and low, flat heel often occasions him a great deal of discomfort. The change to the ideal shoe should be made gradually, that the foot may slowly change itself to the original normal condition. Exercises to strengthen the feet should not be neglected. It has required years to develop anterion heels and the return to normal must be gradual and prolonged.

A Consideration of some of the Conditions Commonly Called Rheumatism—By Dr. C. C. Crain, in Cal., State Journal of Med. Dec. 1912. Many people are suffering from various forms of so-called rheumatism. The doctors have not cured or benefited them and they have resorted to all kinds of charms and "tisms" and advertised "cures". They support the Turkish baths and the medicinal springs. They even become drug-habitués and hypochondriacal faddists. There is no question that some of these cases are really incurable, but the majority of these conditions are due to the ignorance, care-
lessness, or neglect of physicians. The author presents a number of conditions that are often called rheumatism and treated as such.

"Rheumatism in the feet" is often a condition of weak feet with valgus, or promation, fallen transverse and longitudinal arches. This condition may be remedied by exercises, massages, wear of proper shoes, correct methods of standing and walking, and sometimes by the use of arch supports.

"Metatarsalgia, or Morton’s toe" is less common than flat-foot, and is probably due to faulty shoeing. It accompanies depression of the tranverse arch of the foot with arthritis of the metatarsophalangeal joints. It may be relieved by elevating the arch by supports and strengthening it by exercises. A promising operation is the transportation of the extensive tendon of the toes to the head of the offending metatarsal bone.

Spasm of the peronei produces a painful condition of valgus. It may be cured by rest, massage and corrective manipulations, or by over corrective under anesthesia, or even by a transplantation of a peroneal tendon to the opposite side of the foot.

A rare condition is intermittent limping which is produced by an obliterative enarthrosis. It usually occurs while walking. There is intense pain in the calf of the leg which is relieved by rest. The foot at such a time is cool and white or cyanotic. This condition is closely related to Raymond’s disease and to erythromelalgia. It often terminates in gangrene. But relief may be obtained by the corrective of any static error present in the foot and by careful regulation of the amount of walking that the patient does.

Tender heel, or “policeman’s heel,” is usually due to an exostosis of the os calcis. This may be removed by operation.

"Rheumatism of the bone" of the leg is nearly always due to syphilis. There is tenderness over the crest of the tibia with some unevenness of the bone, due to periostitis.

Acute traumatic hydrops of the knee joint may be confounded with rheumatism. A chronic, spontaneous hydrops in both knees is usually syphilitic. If the hydrops is in single or double and is accompanied by inflammation, it may be of gonorrheal origin. Tuberculosis of the knee must not be overlooked. The tuberculosis test and the Wasserman reaction will clear up many doubtful diagnoses. Nor should the diagnostic value of the X-ray be neglected.

Villous arthritis of the knee is common in women. It is due to faulty positions of the bo”-” by the wearing of improper corsets and of high-heeled shoes. The knee joints become unstable, the patient has probably acquired the stoutness of middle age, and fatty-fibrous-vascular fringes develop in the synovial membrane of the knee joint. Suddenly a fringe becomes pinched and there is a sudden, severe pain in the knee; but there is no locking of the joint and no falling down as occurs in displacement of the semilunar cartilage. The treatment consists in connection of all static errors from head to the feet, in the use of tight bandages about the knee, and in radical cases, in arthrotyro.

Sprain or Rheumatism of the Hip in Children is often found to be tuberculosis, and in the aged, fracture.

Another condition which is encountered in the hip more frequently than any other large joint is osteo-arthritis, which passes under a half dozen and more synonyms. This disease is very common in those who have reached middle life. It is insidious in onset and slowly progressive. It is made worse by hot weather, by strain and unusual exercise. The treatment requires the connection of all errors of metabolism, the protection of the Joint, and even its immobilization during exacerbations.

Common complaints which suggest ostiel-arthritis of the spine are occipital neuralgia, torticollis, lumbago, sciatica, and intercostal neuralgia.
Goldthwait has pointed out and emphasized the conditions of the lower spine due to Sarco-iliac relaxation, sprain, and dislocation. Crane impresses upon the reader the fact that such relaxation is very frequently a concomitant of static error.

Tuberculosis of the spine has frequently been diagnosed as rheumatism until deformity and abscess were manifest.

Subdeltoid bursitis may follow sprain or injury of the shoulder by direct violence. There is pain chiefly in abduction of the arm, with limitation of abduction. If cure does not result in six months of treatment by rest, support, massage, and exercises, it is necessary to exercise the bursa which has become fibrous and often calcareous.

Subcoracoid bursitis may also occasion considerable pain and disability. It is found in those who by occupation allow the shoulder to fall forward so that the numerous impingings upon the coracoid process. Seamstresses, students, editors, and base ball pitchers are subject to this disease.

Tuberculosis of the shoulder differs from the same disease in the hip or knee in that deformity is less, disability is not so marked, and abscess formation is rare. Cones sicca of the shoulder is not uncommon as we suppose. Cervical rib may interfere with the blood and nerve supply of the upper extremity. Suspicion of its presence is confirmed by the X-ray.

One other condition, acute osteo-myelitis, is probably more often mistaken in diagnosis is always serious and sometimes fatal. The author presents a case in point and then considers the differential diagnosis between acute osteo-myelitis and acute articular rheumatism.

The Relation of Pain Especially to Joint Strain or the Relation of Pain to Mechanics—By S. J. Hunkin, (Cal. State Med Journal, Dec. 1912.)

The author believes that 33 1-3 per cent. of all pains that people suffer are due to gross mechanical causes, and can be relieved only by mechanical procedures.

Most cases of sciatica and lumbago both due to lesions of spinal cord are caused by static errors, and often associated with changes in the bone and periosteum of the vertebrae.

Operations in women to relieve backache only too often completely fail of their purpose and should be undertaken only after a careful study of the bodily poise and balance and a correction of all static errors.

In osteo-arthritis of the spine pain is due to pressure upon the spinal nerves by bony outgrowths. The loss of normal motion in the spine is compensated for by increased range of motion in the sacro-iliac joints. This leads to relaxation and slipping of these joints. The result of this condition is well known from Goldthwait's writings. This condition is typically present in the male of middle age.

Another cause of slip of the sarco-iliac joints is the general relaxation of joints and muscles so frequently seen in young girls and in obese women and women who have borne children. It is favored by improper shoes and corsets.

In the latter type of cases in which sarco-iliac strain is due to general relaxation and faulty poise the treatment aims to correct the position and support them by proper brace or corset. In the osteo-arthritis type of cases treatment is more difficult and it is sometimes necessary to reform the spine under an anesthetic. Rest in bed, followed by massage exercise, and the application of a suitable brace may, however, be all that is required.

The Use of Corrective Plaster Jackets in the Treatment of Scoliosis—By Dr. E. S. Hatch, in New Orleans Med. and Surg. Journal, April, 1913.
The author states the importance to the general practitioner of a knowledge of scoliosis for he it is who usually sees a case of scoliosis first. He should tell the parents of the importance of the treatment.

Hatch, whenever possible, treats such cases for a month with massage and exercises to loosen the spine as far as possible. He then applies a plaster jacket with the patient in a corrected position, and cuts the jacket out over the concavities. Such a jacket is worn for five or six weeks and is then replaced with a similar one. It may be necessary to apply a third jacket to secure a good position of the spine.

A leather removable jacket is then used and the patient resumes gymnastics.


The symptoms of cervical rib are the disturbances in the nerve and blood supply of the arm, due to pressure of the rib upon the brachial plexus and the subclavian vessels.

In operation to remove the rib there should be as little trauma as possible to the plexus and the vessels which should be protected from the denuded upper surface of the first dorsal rib.

The author employs incisions in a large field of operations in order to avoid trauma to the plexus. An anterior excision extends along the posterior border of the sterno-mastoid from the middle of the muscle to the clavicle. A second posterior incision extends parallel to the first and two inches behind it. A third incision unites the first two over the clavicle, forming a flap with the pedicle above.

To meet the second condition of covering the denuded dorsal rib, he uses a small flap of the subclavus medius muscle with pedicle below to form a cushion between the rib and the plexus and vessels.

Disease in Milk: The Remedy—Pasteurization.—By Mrs. Nathan Straus, New York.

This interesting book of two hundred odd pages endeavors to record the work done by Nathan Straus in his fight against tuberculosis and death through the pasteurization of milk. Compiled by his wife, Lina Guthertz Straus, it is a valuable document of history in the making. Chronologically, it follows, step for step, the propaganda that was carried on, giving illustrations, laws, rules of procedure for pasteurization and papers that appeared in medical and lay journals, that helped in the formation of a powerful public opinion.

The beneficent results of milk pasteurization are strikingly presented. When we read them we wonder why it is that all cities have not made this form of disease prevention compulsory.
BOOK REVIEWS


Diseases of the mind and nervous system are among the most intricate and difficult of comprehension of all subjects in medicine, and yet the general practitioner, who probably has not devoted special study to this department, is almost invariably the one who first meets these cases and refers them to the allenist. A medium-sized work, short, clear, and to the point is therefore a great desideratum, and this has been shown in the demand which has brought Professor Pott's book to its third edition. In this new revision the chapter on general symptomatology and methods of examination has been amplified. A description of tic embodying the present-day view of that disorder, and short descriptions of myotonia atrophica, progressive lenticular degeneration and dysbasia lordotica deformans have been added. The importance of the examination of the cerebrospinal fluid and determination of the existence of the Wassermann reaction in the diagnosis of certain diseases of the nervous system has been realized and the latest views incorporated.

The section on mental diseases is of necessity brief, but it is believed will give the student a working knowledge of the intricate subject of which it treats. No attempt has been made to discuss either the psychology of these disorders of psychological methods of studying them, for the reason that although it is appreciated that further progress will be along these lines, the subject is still in a more or less experimental stage. Reference, however, has been made to the theories of Freud in the description of hysteria. It is also recognized that there are many so-called functional diseases. These, however, have not been described under that heading, insanity and idiocy alone being there considered. Reference, however, has been made to the fact that the functional diseases above mentioned are in reality mental diseases.

In brief, the work includes the most recent advances. It is extremely well illustrated; and a better book for the purpose of the general practitioner or for the college student would be hard to find.

Epidemic Cerebrospinal Meningitis—By Abraham Sophian, M.D., formerly with New York research laboratory, with twenty-three illustrations, $3.00, St. Louis, C. V. Mosby Company. 1913.

This work is the only monograph in the English language on Epidemic Cerebrospinal Meningitis, dealing at length with the etiology, symptomatology, laboratory diagnosis, complications, studies of blood-pressure in meningitis and the treatment of the disease. The studies leading to the production of this work were carried out in the Dallas, Texas, Meningitis Hospitals, and many of the experiences in the laboratory as well as those at the bedside are recorded in these pages. Particular attention is given to a description of methods employed in scientific municipal control of epidemics, more especially with regard to careful, scientific quarantine and the application of specific preventive measures. Blood pressure studies in meningitis are noted and the methods of administering the antimeningitis serum by the changes in blood pressure are carefully described. The purpose of the work throughout is to convey a thorough yet simple description of the clinical and laboratory findings in the disease as well
as to interpret the laboratory descriptions which will aid the reader to familiarize himself with the application of treatment and in analysis of the disease. This is a very ample monograph and one that every physician interested in the study of this subject should have.


This book is an attempt to collect into one systematic whole a large mass of literature scattered throughout many books, journals, magazines, bulletins of governmental departments, &c. It may be said at once that the author has succeeded admirably in producing a readable and useful work of reference on the subject, which while not quite exhaustive, will supply all the information required by the ordinary medical man. Where necessary, the reader is referred in a footnote to the original papers.

The first part of the book is devoted to the chemical constituents of animal and vegetable foods, and the classification and character of the proximate principles of foods. Then practically every food in common use in any part of the world is discussed. The source, place of origin, composition, and method of preparation of animal and vegetable foods are given with sufficient fulness, and in many cases the methods of cooking and some historical references are added. In addition, condiments, spices, and beverages are dealt with.

It is most interesting and easily read, and is a veritable mine of information, not only for common foods, but also for many uncommon or out of the way things. The diction is fairly concise, and there is no padding of any kind, yet the book extends to almost a thousand closely printed pages, and would be much larger if smaller print had not been used for some of the paragraphs dealing with special substances or special processes.

Every chapter is good, but those dealing with meat, milk, cheese, butter, and breadstuffs are probably the best. One is not inclined to emphasize defects where these are of minor nature, here and there one finds a few unnecessary repetitions, and the index might be improved though where such an enormous mass of material is treated it would be difficult to make an absolutely full index.

This is a very good book, and can be heartily recommended to medical men.


The demand for light upon this subject exhausted the file of the Journal in which it was printed and has led its publisher to re-issue the article in the form of a thirty-two page reprint. The directions given are explicit and make the reprint not only of great value, but practically the only set of definite directions in the treatment by exercise of conditions following paralysis.

W. B. SAUNDERS COMPANY, Publishers of Philadelphia and London, have issued another edition (17th) of their handsome illustrated catalogue.

In going through this edition we find it describes nine new books and ten new editions, not described in the previous issue. These new books are of great interest to the medical man, because they treat of subjects being daily discussed in medical circles.

Any physician can get a copy of the Saunders' catalogue by dropping a line to these publishers. A copy should have a place on the desk of every physician, because it is most valuable as a reference work of modern medical literature. Send to Saunders today for a copy.
THE PROBLEM OF MILK PRESERVATION

Not many years have passed since Behring started a discussion concerning the living qualities in milk that has served as a lever to uproot many settled notions concerning the milk problem and has introduced into medical literature a host of new questions which have been studied with no end of controversy.

We are all aware of the ingenious theory that Behring propounded: that in the milk of the human animal, in cows, and even of other animals there were present antibacterial, antitoxic, and other protecting bodies which, speaking particularly of the problem of tuberculosis, might be utilized in the struggle against this one infecting micro-organism. It is pretty widely known how he proposed to hyperimmunize young cows and thus increase the amount of these antibodies in the milk and thus eliminate entirely the scourge of infant tuberculosis which he thought was largely a matter of infection from bovine sources.

The cautious scientist has not accepted Behring's views without reserve. Bearing in mind the proven to be the untrue dictum of Koch concerning the non-infectiousness of bovine tuberculosis, many have taken a middle ground, and while recognizing the digestive tract as a possible route of infection they have devoted their energies to the study of the more direct and urgent features in tuberculosis infection.

But apart from the subject of tuberculosis and milk, the phase of the subject that regards milk in the light of a living fluid, and that interference with its physical, chemical, and zymotic characters is bound to be reflected in conditions of disturbed nutrition, this side of the problem is worthy of special attention.

Flugge, it may be remembered, contended in opposition to Behring, that there were no antibodies in milk, but even if these
be eliminated from the discussion, the question remains, does a modification of the milk brought about by boiling, by pasteurization or by antiseptics, so alter its character as to render it a different fluid, and if so, to what extent?

It is surprising to read the researches that have been undertaken and which have arrived at contradictory conclusions. The dictum that boiled milk is the cause of infantile atrophy and Barlow's disease represents the conclusions of one series of investigators, notably Huerber and Barlow himself; while such excellent observers as Budin, d'Espine and Variot, in careful series of experiments, maintained that such was not the case. Scorbatus has been the scarce line for others who would have no boiled milk (Fruitnight, Netter), while many equally competent men pronounce such views chimerical. All of which serves to accentuate the view that as yet we are not in a position to make positive statements regarding the action of boiling on the vital principles resident in milk. Naturally the grosser feature of sterilization, etc., are not under discussion in this place.

The most interesting feature of the discussion at the present time resolves itself about the use of an antiseptic in milk that will least interfere with the hypothetical antibodies of Behring and will serve the great function of keeping the milk sterile and not interfere with the digestive organs or with the physico-chemical properties of the food products. Behring maintained that formaldehyde was just such a body. Its constructural simplicity; its being a constant product in all constructive metabolism in plants, and its pronounced antiseptic action, which it undoubtedly has and exercises in living metabolic activities, all lent a certain air of plausibility to the argument and stimulates another great series of researches with customery contradictory conclusions.

It is certain that we believe that the action of the Consulting Committee of the Hygienists of France whereby they condemned the use of formaldehyde as a milk preservative, will have the sanction of the major body of hygienists who have taken up this question, but it is by no means to be assumed that the discussion is settled.

At all events we are much nearer the solution of the problem of milk preservation negatively, if not positively—today than we were a few years ago when Behring promulgated his very attractive "antibodies" as important factors in the milk problem.
EDITORIAL

SUBSTITUTION AND INFANT MEDICATION

The trend of much physiological and pharmacological research would seem to show the immense importance of minute chemical alterations in the plasma of the body fluids. Infinitesimal traces of dissociated potassium salts exert a profound influence on muscular contraction, and imperceptible amounts of other irons have marked effects on the vital biological processes of metabolism.

We do not enter into the details in this place. Those who have read the recent work of Van t’Hoff, Mann, Ostwald, Jones, Loeb and many others are aware of the growing impression that many of the fundamental secrets of biological phenomena are being revealed by the physicochemical key, and the same mode of attack is offering fruitful results in the domain of the remedial arts, pharmacology, which is the hand maiden to therapeutics.

While much has been written concerning the evils of drug substitution, these have been so lividly painted that we feel that the mark has been overshot, and that there remains in the minds of practitioners at large either those ideas that are reflected in the attitude of the one who says there’s “nothing in it”—“but a squabble between rival drug houses;” or of the other who is much overwrought and believes that “some one ought to hang.”

The medium ground recognizes that substitution is a great evil. Of this there is no doubt. Commercially the extent of the practice is beyond any mode of computation. Medically, much of this sophistication is a negligible quantity.

But of a certain part, and particularly in certain types, and of certain drugs, we believe that keen discrimination must be shown—a judgment founded, not on the attitudes already characterized as those commonly held, but a discrimination founded on a more fundamental conception of drug constituents and drug actions.

At the present time we can only speak of affections in childhood, in which we believe this evil of not getting exactly what the physician orders, is of paramount importance. We refer more particularly to the acute toxemias of the infectious diseases, during which the heart muscles suffer often irreparably.

In these affections it is by no means an isolated practice, but we believe from observation and from extensive reading that the antipyretics of the aniline, or the coal-tar series, are extensively prescribed, and it is in this one class of drugs, which
are of comparatively recent manufacture, that so much substitution is being practiced.

We do not now refer to the so-called impure phenetidines, or the one half per cent. below Pharmacopoeial strength of certain preparations, but to the gross sophistications which in certain localities are made by enterprising and unscrupulous drug vendors, or more rarely by the pharmacists themselves. It is largely to be regretted that the pharmacy has fallen from its one-time high estate to occupy the place of the department store, dealing with almost every thing to heal or destroy; but the social phase of the competitive struggle, while offering a delightful and knotty problem, is apart from our central idea.

How, with a vitiated pharmacist esprit; with physicians who have aided in their destruction by their liberal patronage of the "tablet industry" army, and have themselves deteriorated in pharmacological lore to the formless knowledge that F’s 67, or K’s R. J. Q. and X. is a splendid thing for diarrhea or bronchitis; with drug vendors who will do anything to make an extra cent on a pound; how, with all of these and many more elements, the thinking, non-penny in the-slot-physician will be able to guide his little toxic patient when the most trivial alterations from known standards of drug purity can turn the balance away from recovery, it is a problem which demands better pharmalogical training, more fundamental chemical knowledge, and a vigorous and united stand against the parasites of the legitimate and honorable drug industries.

HOW TO COMBAT INFANT MORTALITY

When one remembers that approximately one-fourth of all deaths occurs in the first year of life, and that of these about 60 per cent. are due to gastro-intestinal disturbances, he begins to realize how very important the proper nutrition of the infants becomes. There is but little question that of the other 40 per cent. of those young infants who die from other causes, many could be saved if gastro-intestinal complications could be avoided. When these appalling facts confront us, our duty as physicians spurs us to greater efforts to attain such knowledge as will help to save the little ones entrusted to our care.

As in all branches of medicine, the practice of pediatrics, in so far as it relates to infant feeding, must vary according to the materials at hand. Any hard-and-fast rules which pre-
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suppose the possession of apparatus or chemical substance which cannot be procured by any physician reduce the influence of these principles in just so much as these are attainable. In this way most simple laws are the best, provided that the end may be attained, i.e., the health of the child.

In the practice of no other branch of medicine is it so necessary that the physician in charge have the complete confidence and co-operation of the patient’s attendants, since patience and care are the two things absolutely necessary if we wish to get the best results. Attention to detail over many weeks is frequently necessary to preserve the lives of our small patients, and a clear judgment, exercised constantly, with a proper estimate of the time and trouble involved, are an invaluable aid to the physician who cares for the sick infant.

When we go from the individual to the community, here again the members of the medical profession must exert all their efforts to dispel the dense clouds of ignorance which have so closely surrounded the laity. We must cease to allow the mothers to think that diarrheas are the result of teething, and must show them that if such were true every child would have diarrhea from the sixth to the eighteenth month, if not continuously at least intermittently. We must prove to them that each child is a law unto itself, and that because Mrs. Smith’s baby, who was fed on condensed milk, is apparently well, that that in itself is no reason for believing that Mrs. Brown’s will be the same. We must let them understand that mothers, for reasons of affection, if for no other never tell of the countless numbers of little ones past recall as the result of unreasonable nutrition.

Babies’ alimentary canals vary as much as their dispositions and mental development, and most mothers are intelligent enough to understand this if the fact is only brought to their attention.

The successful combating of infant mortality can only be brought about by the education of the mothers in the essential facts of the science of the nourishment of the infant. In the future, however, there must be facts, and not unproved theories. At present the most glaring example of the harm that may be done by well-intentioned but uninformed individuals is that of public officers of health, whose continual cry has been to kill bacteria, and this without any reference whatever to the composition or amount of food to be given the individual infant
No one better than the writer knows the need and value of pure milk, and he certainly has no desire to underestimate the great good done in this crusade. This everyone sees, but how many see the poor, puny, marasmic infant brought up on condensed milk or malted milk as the result of the efforts of the mother to give it a food which contains none of the death-dealing bacteria. These and many other abuses need correction and it is the duty of the physician to see that his community is properly informed—Grulee on Infant Feeding.

THE DIAGNOSIS OF MENTAL DEFICIENCY IN CHILDHOOD

Feeble-mindedness and mental deficiency in childhood may be defined as a condition of weak mentality existing from birth or early childhood whereby the individual is unable to cope with his fellow beings in the strenuous struggle for existence. Mental defects, are not always dependent upon adenoids or other physical defects; they often have perfectly normal physical organs but are only lacking in mental capacity—and just the cause of this lack of mental capacity no one can tell. There are families with different strains of intelligence or levels of intelligence. This intelligence has been transmitted from father and mother to son and daughter. Then there are members of a family with average intelligence who have always been of just about so much intelligence. Then one may recognize precisely in the same way a group of people with a strain of intelligence that is a trifle too low to enable them to functionate as normal individuals in society, to enable them to compete with the rest in the struggle for existence and to live a normal decent life. It is this group of unfortunates we need to understand, recognize and pick out. Why? If they were not picked out, if they are not recognized, they, and all the rest of the people would insist upon placing on these people responsibilities which they could not bear and under which they would break down and they would do injury to themselves and the body politic. In other words, they would become dangerous and evil people. Every one who belongs to these strains, or the strain just below the level which marked them, are potential criminals. It is necessary to recognize and diagnose these cases. Because if diagnosed early they can be taken care of and saved from a life of criminality pauperism
EDITORIAL

or debauchery. Can they be diagnosed? Here the difficulty is very great because in the first place they obviously are of normal appearance and in the second place it is difficult for the physician to recognize these cases because perhaps they are so accustomed to seeing people improve from various physical conditions that appeared to make them dull and stupid that they become optimistic and can not help feeling that because these people looked like the rest of them their condition would pass over and the members of the family would say "the doctor will take care of it." But as to actual diagnosis of these cases, the complete and sure diagnosis can only be made by specialists or by those who have studied this problem. Dr. Henry H. Goddard says he has seen people who have this experience go into a school and look over and examine this and that child, and these people had been questioned, "who told you my dullest pupils?" That they were the dullest was proven to be true.

The highest efficiency in this respect was realized by ladies; they seem to be able to more carefully scrutinize these degenerates than men do. I have two or three ladies at Vine-land who are far ahead of myself in this particular. This was one of the essentials in making a diagnosis. Dr. Goddard in a recent address before the N. Y. State Medical Society said I came before you for the purpose of telling you things, or making suggestions to you which might be helpful. If an apparently normal child could not keep up with his fellows when he attended school, but fell backward, there was something wrong, and this should be inquired into. Take for instance a child with malnutrition; say he was a child nine years of age but with a mentality of a child of four or five; this showed that he was suffering from malnutrition and kept back in his work because of it. Perhaps he took tea and coffee for breakfast, dinner and supper, and they might think this was the cause. But no. No part of the body was more resistant to starvation than the nervous system and it was not safe to say that if they fed up the boy he would become normal and satisfactory. The point is this: when a child is brought to our attention who is two or three years behind in his work we would not let any thing switch us from the conclusion that the child was feeble-minded; we have no more right to withhold this diagnosis than if we were dealing with a suspected case of smallpox. It is a serious matter to make a wrong diagnosis in cases of feeble mindedness.
THE TREATMENT OF EPIDEMIC (SUMMER) DIARRHEA

By JOHN ALLAN, M.D., B. Ch., D.P.H.,
London, Eng.

During the hot weather of summer or autumn there occurs each year with perfect regularity, an epidemic of zymotic enteritis. This epidemic or summer diarrhea most frequently attacks young infants and is a potent factor in swelling the infantile mortality rate, that is to say the death rate among infants under one year of age. Treatment of this ailment has been much discussed, and the opinions expressed are by no means unanimous. I have been privileged on several occasions to note such epidemics, and I came to regard a certain routine as of undoubted service in this condition. I have dealt with certain phases of the treatment in the Medical Times and The Prescriber, but a brief consideration of it may not be without interest. This treatment proved successful in many hands, but it is not to be inferred that I regard it as the one and only treatment.

As soon as the infant has an attack of Zymotic enteritis, milk should be stopped. This is even applicable to the rare occasions in which breast-fed babies are attacked. There can be little doubt that the disease is due to an organism or organisms, but, though enthusiastic investigators in Britain, in America, and on the Continent are working hard at this problem, the specific bacteriology is by no means settled. The presumption of the organismal origin of the disease indicates why it is advisable to withhold milk. In bottle-fed babies the infection has most probably been conveyed through the medium of milk—an additional reason for intermittent this food. What should the baby have in place of milk? As a matter of fact it is a good thing to starve the infant for 24 hours or so, merely giving him or her frequent sips of boiled water which has been
allowed to cool. Some good people hold up their hands in amazement at what (to them) appears cruel treatment, and to avoid wounding the tender sensibilities of those who view with alarm such starvation treatment it has been my custom to prescribe albumen water at the beginning of a diarrhoeal attack. Albumen water requires no elaborate technique for making and it also has the very important advantage of being inexpensive. The whites of two fresh eggs are placed in a cup and slightly beat with a fork, then a pint of cold (previously boiled) water is added and also a little milk-sugar and a pinch of salt. The whole may be thoroughly mixed by shaking in a bottle. During the time diarrhoea is rife eggs are still plentiful, so that it should be easy to get them fresh and at a moderate price. When all is said and done the administration of albumen water is little more than semi-starvation, but it appears to satisfy those in charge of the infant seeing that they are under the impression that the babies are having some nourishment. The period of this semi-starvation treatment will of course vary with the nature of the case, but it need not be very long. In mild cases one may as a rule discontinue it after 24 hours, but in the severer types it is often necessary to persist with it for some days. Except in the case of breast-fed babies the return to milk should not be direct. In those who suckled at the breast it is quite permissible to put them straight back to the breast as soon as the albumen water has been stopped. In those artificially reared greater caution is necessary and one must interpose several steps before the infant returns to the diet of diluted milk. It has been my custom to make two graduations in this connection, namely, (1) veal or chicken broth and (2) whey. This has appeared to minimize the risk of a relapse and in practice it works excellently.

But dietetic treatment is not every thing and numerous drugs have been recommended. Here again I have found one or two especially serviceable. The first indication is to give a purgative to get rid of the fermenting and decomposing matter which has accumulated in the bowels. Surely it is not a rational procedure to at once attempt to check the diarrhea by opium or analagous preparations and allow such matter to remain. Is not that likely to increase the toxaemia and jeopardize the infant’s chances of recovery? I have found calomel and castor oil the best drugs for this purpose. One grain of calomel may be given at once or, what I consider better is, to
administer small doses of calomel repeated frequently. I generally prescribe a sixth of a grain of calomel repeated at hourly intervals until one grain has been taken, and this drug may be conveniently combined with sodium bicarbonate. If preferred, an initial dose of one teaspoonful of castor oil may be ordered. are called for, and the one I have found most satisfactory is acetyl-tanin. There is one practical point to note in the exhibition of this drug and that is, that it should only be administered when no milk is being taken. The following prescription which I employ in this disease appeared in The Prescriber, of August, 1909:

\[
\begin{align*}
\text{acetyl-tanin} & \quad \text{gr. xvi} \\
\text{ol. Ricini} & \quad 5 \text{ ss.} \\
\text{Tinct. Chloroform Co.} & \quad \text{m xvi} \\
\text{Muclag Acaciae} & \quad 5\text{i} \\
\text{Syrupi} & \quad 5\text{i} \\
\text{Aq. Anethie} & \quad \text{ad } 5\text{i} \\
\text{M. sig.} & \quad "A teaspoonful every four hours for a child one year old." \\
\end{align*}
\]

It is often of advantage to order the mixture to be given in teaspoonful doses every two hours for the first day, four-hourly the second day, and three times a day during the third day, after which in the majority of cases its administration is unnecessary. In many cases, when the diarrhea has become more chronic, the alvine discharges are very offensive, and it is customary to prescribe a mixture with bismuth and salol:

\[
\begin{align*}
\text{Salol} & \quad \text{gr. iv} \\
\text{Bismuth Carb.} & \quad \text{gr. xvi} \\
\text{Tinct. Chloroform Co.} & \quad \text{m viii} \\
\text{Cucilag} & \quad 5\text{l.} \\
\text{Agua anethie} & \quad \text{ad} \\
\text{M. Sig.} & \quad "A teaspoonful three or four times a day for a child one year old." \\
\end{align*}
\]

Another useful mixture for cases in which the feces are offensive is as follows:

\[
\begin{align*}
\text{Zinc. Oxid.} & \quad \text{aa gr. viii} \\
\text{Sod. Bicarb.} & \quad \text{ad } 5\text{l} \\
\text{Aq. Anethie} & \quad \text{ad } 5\text{l} \\
\text{M. Sig.} & \quad "A teaspoonful three or four times a day for a child one year old." \\
\end{align*}
\]
TREATMENT OF EPIDEMIC DIARRHOEA

In numerous children suffering from enteritis the stools are very offensive and the above prescriptions are good, but the administration of bismuth subgallate is often better. One or two grains three times a day may be given to a child of three or four and it may be with benefit combined with mistura-cretae. Tuberculous enteritis may be secondary to an acute attack of what is apparently simple diarrhœa and it occurs in rather older children. Bismuth subgallate is frequently prescribed as dermatol and when that is the case the practitioner often forgets that it is a bismuth salt. It is wise precaution to warn the person in charge that the feces will probably become black during the administration of the dermatol otherwise a good deal of unnecessary alarm may be caused.

With regard to stimulation it will be found that this is necessary in many cases. It must not however, be practised as a routine measure. Brandy is a suitable stimulant and it can be given with the albumen water. The quantity given will vary from five to fifteen minims every two or three hours according to the age of the child. Strychnine is also useful and if it can be tolerated by the stomach the following is a good combination for children.

\[
\text{Liq strich.} \quad \text{m. xii}
\]
\[
\text{Tinct. Strophanthi} \quad \text{m. xxiv}
\]
\[
\text{Spts. atheris} \quad \text{m. xl}
\]
\[
\text{Syrup auranti} \quad 5 \text{ iii}
\]
\[
\text{aqua Chloroformi} \quad \text{add 5 iii}
\]

M Sig. "A teaspoonful four or six times a day for a child one year old."

In some cases it may be necessary to give strychnine or ether by hypodermic injection, but care should be taken not to overdo stimulation.

A noteworthy feature of many of the severer cases of zymotic enteritis is the extreme collapse following the excessive diarrhœa. The great drain of fluids from the tissues is generally very apparent, and one notes the sunken eyes, the wrinkled, shrunken skin, etc. To counteract this, there is nothing better than the administration of normal saline either subcutaneously or per rectum. It is sometimes useful at the commencement of an attack to irrigate the large bowel with sterile water or normal saline. The vomiting is frequently most troublesome and if the withholding of food by the mouth does not check it gastric lavage may be called for. This should not be repeated more than once
because in young infants it may occasion considerable collapse.

Good hygiene is essential. The infant should be in a well ventilated room with free access of fresh air, and should, if possible, be taken out in the open air every day. When circumstances permit, the cot may be placed in the garden during the day time. Diapers should be frequently changed, and soiled ones should be placed immediately in some disinfectant solution and should be thoroughly cleansed in boiling water, then aired and dried before being used again; much might be done to prevent the spread of infection. During the convalescence, I have found the judicious exhibition of virol of undoubted service. Many recommended virol during the acute attacks, but my own experience has not been favourable to this. I have seen several cases where the condition appears to be aggravated by virol.

Much might be done to prevent epidemic diarrhea, and it is up to the public health officials to strenuously labor for this purpose. I discussed this aspect of the question at some length in the British Journal of Children’s Diseases (March and April 1910). At that time I drew up a sample leaflet which I suggested should be freely distributed during the summer months. If I quote it some idea may be gained of certain of the preventive measures which appeal to me.

“Each year during the hot weather in Summer and Autumn a large number of infants are attacked by a serious disease called summer diarrhea, and many of them die from this disease. The disease, though dangerous, can to a very large extent be prevented, and it is earnestly hoped that mothers will take precaution to save their babies’ lives.

“‘There is good reason to believe that the common house-fly is a very important agent in spreading the disease, and you are requested to make every effort to keep the fly out of your house. Remember that the fly feeds on, and breeds in all sorts of decomposing filth, such as stable manure, decaying garbage, etc.; that it may carry away some of this filth on its legs and body and may be covered with millions of death-providing germs; and it afterwards settles on food, end especially milk, which it will contaminate, and it is very dangerous to give such polluted milk, to your infants. Therefore, use fly-papers in the warm weather. Keep your windows closed and do not allow your door to stand open all day. Store milk in clean covered dishes in some place to which flies do not have access, and do not keep your food in any room near a privy, drain etc. Burn all animal and vege-
table refuse, such as fish-heads, bones, tea-leaves, potato-parings etc. Do not throw refuse in your back yard or place in uncovered ash-tins. Keep your house and out door premises clean, and especially do not permit dust to collect in the department where your food is stored. Dust in every form is dangerous to health, and for removing it, wet cleansing is preferable to dry. Do not allow sinks, drains, etc. to become choked. Report at once to a public health official any nuisance such as choked drain, and any manure-heap in the neighborhood which is attracting large numbers of flies. Bear in mind that the fly season is the diarrhoea season, and remember that absence of filth and dust means absence of flies.

"Very few babies who are fed entirely from the breast, die of this disease, and therefore, you are strongly urged to suckle your infants at the breast. If you cannot give your child sufficient nourishment by this means do not take it off the breast. It is far better to feed from the breast and by bottle alternately than to feed by bottle only.

"On no account wean your infant during the hot months of July, August and September. If your breast-milk has become scanty, continue to give your infant this as much as possible and make good any deficiency by using cow's milk. Avoid giving condensed milk (especially the cheaper brands) and patent foods, and never feed your baby on anything that is souring.

When cow's milk is employed, the milk should be boiled when it comes to the house and kept in the coolest place. Keep the baby's bottle scrupulously clean, and reject at once any milk which smells sour. Use only boat-shaped bottles. Never employ bottles with long tubes, which are always dangerous. Thoroughly wash the feeding-bottle after each meal, and see that the nipple is turned inside out and well scalded.

"Do not give your infant a "dummy teat" to suck. Never neglect any case of diarrhoea, but obtain medical advice at once. Always stop giving milk, and until the doctor arrives give nothing but boiled water or white-of-egg water.

Try to prevent any spread of the disease, never leave soiled napkins etc. lying out, but place them in boiling water or disinfectant, and always carefully cleanse your hands before preparing any food. Take the infant daily for an outing in the open air and be careful not to overclothe the child.''

The above shortly indicates some of the lines on which
measures of prevention might be based. Broadly speaking, one might say that the three principal factors in prevention are (1) a clean milk supply, (2) education of the public and (3) compulsory notification of the disease to the Health Authorities. I firmly believe that prevention is of far greater importance than medical treatment and that it is by means of the former that many reduction of the mortality rate and attack rate will be accomplished.

31 Prince of Wales Rd., Battersea Lond, S. W.

SCHOOL HYGIENE OR THE HEALTH AND PROGRESS OF THE SCHOOL CHILD*

BY FRANK ALLPORT, M. D.

Chicago, Ill.

I wish to express my thanks to the Tennessee State Medical Society for honoring me with a request to come to Nashville and address this body. It is an honor that I deeply appreciate, and will never forget.

I was requested to read a paper on some eye or ear subject, but I felt that this society would be more interested in some general topic, and therefore requested the privilege of presenting to you a subject that is very near my heart, viz., "School Hygiene, or The Health and Progress of the School Child".

This is a topic of vast importance, and one which should enlist the interest and sympathy of every medical man in the State of Tennessee. You will, of course, understand that in a brief paper, such as I am presenting today, it is quite impossible to do more than to briefly sketch this subject to you, and to merely touch upon its almost endless phases, stopping to dwell here and there for a few moments upon some of its most salient features.

The question in a nutshell is this, are we going to give our children a "square deal" in our public schools? Are we going to invite or compel them to attend school and then fail to deliver to them what the citizens of this country pay for and have a right to expect? Are we going to diminish crime and poverty by educating the children under the best possible auspices? Are we going to materially lessen epidemics, sickness and bodily defects by the universal standardization and adoption of a proper search for diseases and defects in our public

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schools? Are we going to strengthen our Nation intellectually, physically and morally by improving and increasing our educational facilities and possibilities through the avenue of placing the children of our country in a better physical condition? These are questions for us as citizens and doctors to decide, and these questions embody the text upon which I wish to talk to you today.

Let us start with the school houses of the United States, and endeavor to frankly and truthfully view the situation as it really is. We have some beautiful school buildings in this country, but we also have some buildings where, as Governor Ferris of Michigan recently said in his inaugural address, it would be unfit and unsanitary to stable horses and cows. We have some school houses without windows, where all the light and ventilation comes from the door. We have some school buildings that apparently do not shock the sensibilities of the health and educational authorities, nor those of parents and other citizens, where children are being blinded (or nearly so) by insufficient and improper illumination, bad text books, and from contagion. In other schools adenoids, enlarged tonsils, deafness, discharging ears and death are being encouraged by bad air and unsanitary conditions. In other schools tuberculosis, pneumonia, measles and the other contagious diseases of childhood, originate and prosper through unhealthy surroundings. Some schools are so cold and draughty that children are constantly chilled, while others are so hot and poorly ventilated that mental activity is almost impossible.

The best heating and ventilating systems should be in all schools, and the windows should be systematically observed, and it should be remembered that mental work can be best accomplished and good health secured and retained at a temperature about 68 degrees.

Some schools encourage crooked backs by bad desks and chairs, while others spread contagion by unsanitary water-closets, roller-towels and the common drinking-cup. In many schools children are penned in like cattle with totally unsufficient means of escape, and could easily be burned to death as fire attacks the tinder-box, called by courtesy a school house. In some schools the physical well-being of the pupils seems to have been deplorably neglected, and but little (if any) attention is paid to in-door and out-door exercising, gymnasiums, play-grounds, bathing facilities, proper food, etc., etc. And so
I might go on almost indefinitely disclosing the truthful conditions of many school houses; but time passes and I will only add that bad school buildings should be torn down, and new ones built, and that school buildings should be erected in healthy, quiet locations, with ample surrounding spaces for air, light and play, and that they should be built by architects who know this special line of work, and that they should contain every modern and well-tried device that encourages health and easy intellectual and useful progress. These views should be especially emphasized, as in thirty-six of our forty-eight states school attendance is compulsory.

I wish to protest against the prevalent custom of almost invariably building our best buildings for High Schools, and leaving the youngest children to occupy the poorest buildings. The best buildings should be given to the very young, for it is during the earliest period of school life that children's bodies and characters are most susceptible to surrounding influences. I wish that all children might go to school in proper buildings, but if a choice MUST be made, by all means give the best to the youngest children.

It is indeed surprising that, notwithstanding the fact that the proper building and equipping of school houses is a public affair of vital importance to individuals and to the Nation, Ohio is the only state that has seen fit to pass laws calculated to regulate such matters.

The child is the greatest asset of the State. We are educating and rearing a Nation that shall be useful in times of peace, and in times of war. Our men and women should be big and strong physically, intellectually and morally. It rests with each mature generation to mould and shape the coming generation. The most important place for this essential work is in the great pot of the Nation—the Public School. Here the children come together and mingle, here they secure, at least, temporary relief from homes of squalor, destitution and crime. Here we have the opportunity to shape, educate and direct their minds, bodies and souls. Let us not neglect the golden opportunities, these solemn privileges, but let us make of our public schools the means whereby we can produce the highest types of manhood and womanhood. I herewith desire to endorse the attitude taken by many of our Boards of Education, and recently emphasized by Mayor Harrison of Chicago, that our schools should be the social centers of their neighborhood, for those who desire to so.
utilize them. Meetings, social gatherings, entertainments, etc., should be encouraged to go to the public schools, and the people of the various neighborhoods should be made to understand that these buildings belong to them, and can be utilized for all proper and legitimate functions.

I have gathered together some figures and statistics on the subject of our public schools, that I hope may serve to impress upon you the importance of our schools, and the intimate relationship existing between them and the health and welfare of our Nation.

In the first place, there are in this country 20,000,000 school children, or 20 percent of the entire population. Seventy-five percent of these children are suffering from some partially, or completely remediable defect, which is more or less interfering with their physical, mental and moral advancement.

500,000 have organic heart disease,
1,000,000 have spinal curvature, etc.,
1,000,000 have tuberculosis,
1,000,000 have defective hearing,
5,000,000 have defective vision,
5,000,000 have malnutrition,
6,000,000 have operable tonsils and adenoids,
10,000,000 have defective teeth.

Seventy per cent. of the deaths in the United States are due to contagious and epidemic disease, that could in most instances be controlled and suppressed by proper medical school inspection.

There are 260,000 schools in this country valued at $850,000,000; they cost about $500,000,000 a year to maintain. No other investment pays so well. More money spent for schools means better schools, and teachers and scholars, and this means better citizens, less crime and more money.

$44,000,000 are invested in the public schools of New Jersey alone, costing $13,000,000, a year to run. There are 500,000 pupils in the state, with a possible attendance of 71,000,000 days, and yet owing to absence only 9,000,000 of these days were utilized. Seventy-five per cent of these absences was due to sickness, representing a loss to the state of about $3,750,000. Unquestionably, proper medical school inspection would have largely obliterated such an intellectual, moral, and financial loss to the state. In searching for a remedy for this and other ills connected with the health and learning capacity of children, Dr. Ayers points to the confusion existing in this country. Some
states and cities have laws that are probably not carried out, while other states and cities have none. Scarcely any two laws concerning medical school inspection are the same. There should be a universal adoption and standardization of such matters in every state in the union. Dr. Ayers has a bill before his state legislature, and hopes to create the office of State Supervisor of Medical Inspection of Schools. The entire cost of this organization will not exceed $15,000 per annum. It will be this officer's duty to create and enforce uniform rules concerning the health and well-being of the children of the State, including the plan of medical school inspection. He will instruct and encourage all those who are assisting in carrying out this work throughout the State. This plan should be adopted in every state in the Union, and the benefits that would thereby be produced would be simply incredible.

About one school house burns down for every school day in the year. What an opportunity for better buildings!

We have about 500,000 teachers, seventy-eight per cent of whom are women. They are practically all underpaid, considering the high character of the work required, and considering that they are rearing the coming generation. Their pay averages $40.00 per month, or less than the average day laborer. In some states teachers earn less than $150.00 a year. They pay the highest average salaries in California, ($918.00) and the lowest in North Carolina (200.00).

There are about 300,000 blind people in the United States, costing about $15,000,000 to support and most of this blindness could have been prevented by proper medical school inspection and subsequent medical care. About seventy-five per cent of American children have some eye, ear, nose or throat disease or defect which is seriously interfering with their progress. Most of these children can be relieved by proper treatment. It Costs in England about £23 per annum to educate a deaf child, while a normal child can be educated for £14 per annum. In New York City with a school population of 650,000, thirty per cent of the children are two years behind their grades, and ninety per cent of this is due to abnormal eyes, ears, noses and throats. Dr. Crovin found in one New York school 150 defectives who were backward in their studies and incorrigible in their characters. 137 had bad tonsils and adenoids and 13 had defective vision. After these conditions were removed all of their characters and school standing rapidly improved. 40,000 Minnesota children
are retarded one year in their studies by adenoids. This costs the state, $1,000,000 which could all be saved by 40,000 simple operations.

Ninety per cent of school children have decayed teeth and deformed mouths. Decayed teeth produce pain, diseased mouths, germ saturated food, poor mastication and digestion, intestinal toxemia and impaired nourishment and bodily resistance. Dr. Osler declares that bad teeth are a greater misfortune to the world than alcohol, and I believe this statement can be substantiated. In Vienna they have formed a society for the care of Childrens’ teeth, with buildings in all parts of the city. They preach the gospel of good teeth and clean mouths to children and their parents. The Forsythe Brothers have erected a $1,500,000 building in Boston for the same purpose. Free dental infirmaries are at work all over this country; but I would recommend that dentists who work in such institutions receive a reasonable remuneration for their arduous labors, as free service is too much to ask of dentists, and it has been shown in many places that the work languishes where no compensation is forthcoming. Children should not only have their diseased mouths regenerated, but they should be taught how to take care of their teeth, by personal demonstrations and leaflets distributed to them and to their parents, as is done in Denver and other places. One of the large packing houses of Chicago, realizing that good teeth are an important factor in the maintenance of physical equilibrium, and that bad teeth induce poor health, pain, absence from business, the use of liquor, etc., has lately established at the Yards a dental infirmary, where their employees may be cared for at practically no expense. The Company pays the bills, and consider it is saving money by so doing.

Dental infirmaries may be separate institutions, or they may be connected with other free dispensaries accessible to school children, either connected directly with the schools, or situated so as to accommodate an extensive neighborhood and a number of schools.

I have for years been interested in the examination of school childrens’ eyes, ears, noses and throats by school teachers, and for this purpose have devised a series of nine questions, the answers to which will disclose the existence of at least ninety per cent. of serious diseases, or defects of these organs. Teachers are perfectly competent to make these tests and a child can be readily examined in five minutes. If a defect is found a "Card
of Warning" is sent to the parents, urging action in the matter. A vast majority of children (over seventy-five per cent.) suffer from such defects, that are more or less preventing satisfactory school progress. A child whose eyes prevent comfortable study, or whose deaf ears render easy communication with those around him impossible, because retarded in school, discouraged and careless, truant and idle, and ultimately very likely leaves school, forms habits of idleness and vice, and not infrequently joins the criminal classes and becomes an expense and a charge to the state, in reformatories or prisons. To permit such children to follow such a programme is neither economical, philanthropical nor wise. Such defects should be systematically discovered and relieved (especially as the expense is almost nothing), after which the dull student may become bright and the hardship of study transformed into a pleasure. Even in cities having medical school inspection, I believe it much better to have these eye, ear, nose and throat tests made by either the teacher or the school nurses. Any intelligent teacher can make them. The doctor to whom the child goes will diagnose and treat the disease or defect. A day in the early fall should be annually devoted to these tests, and by so doing, and by a subdivision of the work so that each teacher makes the tests in her own room, an entire city can easily be examined in one day. Or, if this idea be deemed inadvisable, a few children can be kept after school during a certain week in each early fall, and at the expiration of the week all the children will have been examined.

If in the State of Tennessee you are not fully prepared to go into the matter of general medical school inspection, you can at least have these simple, cheap, and efficient tests made, for by so doing you will accomplish a vast amount of good at practically no expense and no trouble. No teacher should feel that these tests are an additional labor, for they are but little trouble, and in the end will repay the teacher a thousand fold in reducing her work, by changing stupid, exasperating children into bright and agreeable scholars, after their eye, ear, nose, or throat defects have been relieved.

Dr. Hoag of California, now working with the Minnesota State Board of Health, at the suggestion of that best of Secretaries, Dr. H. M. Bracken, has devised a series of questions which enlarges upon my method. I proposed years ago that an annual systematic examination of school childrens' eyes, ears, noses and throats should be made by teachers. Dr. Hoag goes
further, for he proposes by similar simple questions and observations made by the teachers, to include practically the entire body.

His questions are subdivided off into groups, such as "Eye," "Ear," "Skin," "Nervous System," "General Condition," etc., etc. The teacher fills out the answer to all the questions, after which a very good idea of the child's health and condition can be formed. If the child is defective or diseased, the parent is then urged to seek the advice of a reputable physician. Dr. Hoag has his headquarters at the Capitol building in St. Paul, and holds himself in readiness to go wherever called to make health observations and to give instruction to school authorities, how they can best accomplish medical school inspection in the various towns. He is kept constantly busy, and is doing the best and most systematic work I know of in this country. He allows each town to select one of three methods of doing the work. They are as follows:

1. Organization with a Medical officer and nurse or nurses.
2. Organization with school nurse only.
3. Organization by the employment of a simple non-medical health survey, on the part of the teacher only, such as I have just briefly described.

I sincerely wish that all other states would follow the example of Minnesota.

Professor Heck of the University of Virginia is doing field work similar to Dr. Hoag's.

The question of defectives and schools for defectives is one of the most interesting phases of the subject under discussion. About one and one-half per cent. of the school population is defective mentally. Many children appear to be mentally defective, who become normal in appearance, when certain physical defects, such as adenoids, deafness, poor eyes, etc., are relieved; but about one and one-half of the school population remains mentally defective. What are we to do with them?

There are in all schools four classes of pupils, viz.,

1. Those who keep up with their grades.
2. Those who do not keep up with their grades, but who eventually do, after certain physical diseases and defects are corrected.
3. Those who do not keep up with their grades on account of actual stupidity, laziness, viciousness, etc.
4. Those who do not keep up with their grades on account of mental defectiveness.
Children who do not keep up with their grades are called "repeaters". They stay in one grade or room, term after term and hardly advance in their studies. There are about 3,000,000 such children in the United States, and it costs about $1,000,000 to educate, or try to educate them. A very large majority of these 3,000,000 repeating children can be kept from repeating by relieving them of their physical disease or defects. By taking advantage of this great economical and humanitarian measure, the repeaters would be practically reduced to those who do not progress, owing to real stupidity, laziness, etc., and to those who are actually defective mentally. Concerning the first, we shall have to get along as best we may, but concerning the mentally defective, I am sure they should be taken out of the general schools, and placed in schools especially prepared for their benefit. All repeating children are a detriment to everybody in the school room, and they should either be cured of repeating or else placed in separate schools. They frequently hold back an entire class, for the teacher either has to neglect the balance of the class for their benefit, or the progressive scholars are taught at the expense of the laggard. Mentally defective children should therefore attend small schools, where under the influence of special teachers, environments and methods, they may be educated according to their mental qualifications. Epileptics may, if necessary, be taught in these same schools.

It is getting to be pretty well understood, that badly crippled and deformed children should receive special instruction in separate schools provided by the Boards of Education. Children only slightly deformed may be educated in the ordinary schools, but there are many children extraordinarily deformed, such as those who are armless, or legless, etc., etc., who need special education, both from humanitarian motives, and to keep them from becoming charges upon the Commonwealth. They should be gratuitously transported both to and from school.

Blind and deaf children should have access to public schools of special character. Many such children are educated in State Institutions; and where their homes and parents are of a poor quality, such places are best for them. But where children have good homes and parents, they should be educated in their own cities, where they can receive the benefits of home surroundings.

Open air schools, especially for the benefit of sickly and tuberculous children, such as are in existence in Providence, Mont Clair, Chicago, New York, Philadelphia, etc., are doing a
grand work, and are becoming more popular every year. There are over 200 of such schools in the United States at the present time. The school is usually a commodious tent, or it may be on the roof of a school building, or in rooms well supplied with many open windows. Children are frequently gratuitously transported to and from school, and are given free, or nearly free, hot and nourishing food from time to time. They are well wrapped up in warm clothing, and are properly exercised at certain intervals, and are encouraged to take naps in the afternoon. These schools are doing an enormous amount of good. To reduce the subject of tuberculosis to the sordid level of figures and money, I will remind you that 7,000 children die annually in this country each year of tuberculosis. The average age of these children who die is 12½ years, and inasmuch as the average age of children when they begin school is 6 years, these children have been receiving free education by the state for over six years before they die. It costs $30.00 a year for the public school education of a child. These children have therefore, each cost the state for their education over $180.00. When we consider that 7,000 children die each year of this disease in this country, it means that the nation spends over $1,000,000 each year of useless money for their education, it is evidently cheaper by far to keep children well than it is to allow them to remain sick or defective.

The question of vocational education in our public schools for children is one of great importance, and it is to be hoped that it will not be long before all children may be trained for some useful vocation in life in the public schools.

The subject of free, or almost free, lunches of a good and nourishing character, is believed by many to be an economic measure, as children who are well nourished can make better school progress than those who are not.

Free, or almost free glasses, is considered in about the same light, as children who need glasses but cannot afford them are much handicapped in school. This need not be a great expense, as in Cleveland, where this work is being done quite thoroughly, they only give away a little over 500 pairs of glasses in a year, which when purchased at practically wholesale rates amounts to but little. Twelve of our states distribute free text books, and in Massachusetts, immediately after this law was in execution, the school attendance increased ten per cent. In Newark, N. J. they have recently established an "Infants Consultation Sta-
journeys 21,930 able fortunately, 362 choma ent etc., and bathe, feed, and care for their babies. Healthier babies will be produced by this process, who, when they arrive at the school age, will be much better equipped to receive and profit by a public school education.

Some people imagine that while trachoma exists in India, Egypt etc., there is little or none of it in this country. Unfortunately, however, trachoma exists in less or great degrees all over the country. Dr. John Green, Jr. found 223 cases in 21,930 school children is St. Louis. Dr. J. A. Stucky's wonderful journeys into the mountains of Kentucky, disclosed a most pitiable trachomatous condition. Trachoma is, of course, contagious and may be communicated by handkerchiefs, towels, wash rags, etc., and is fostered and encouraged by bad air, filth, malnutrition, crowded rooms etc. The necessity is therefore apparent for clean, hygienic and proper school houses, decent homes, sufficient and proper food etc. London has established "Trachoma Schools," where only trachomatous children are taught, where their eyes are not over strained, where they are suitably fed, and where they receive proper medical attention and nursing.

Camping schools, where children are kept out doors all the time, and taught manliness, botany, woodcraft, boating etc., and where a healthy moral tone is maintained, are very useful, and are becoming more and more popular.

City summer schools are maintained now in most large cities. In these schools the air is cooled and the children are much more comfortable than on the crowded streets, or in the hot and badly ventilated and cleaned tenement blocks and houses. In these schools the studies are easy, and consist chiefly in lessons on cleanliness, hygiene, morals, good citizenship, travel, light-literature etc., the idea being chiefly to keep the children from the streets, bad associations, bad health, dirt etc., and to retain the beneficial influences and discipline of school life. Cleanliness, health laws and good hygiene should be amongst the most important things taught in our public schools, not only during the summer vacation schools, but all the year around. These should become a habit with the children. Cleanliness begets self-respect, and self-respect begets most of the good things of life. Clean habits inspire people not to expectorate under unwise conditions, to
keep water-closets clean, to dislike dirty towels and clothes and bodies etc. Not only should hygiene be taught in our public schools, but Normal Schools should teach this subject to those people who expect to become teachers, so that they may thoroughly understand its practical laws when they come into contact with public school children. Teachers themselves should be compelled to present suitable medical certificates of health, before being allowed to follow the teaching profession, and a renewal of such certificates should be required from time to time, as occasion requires. Ailing individuals are not qualified to be teachers of our children.

In small towns, one medical inspector will be sufficient, but in large cities many inspectors will be required, who will be under the supervision of the chief inspector, to whom all reports shall be made. Each inspector should give certain definite hours each day to his district, but the chief inspector should give all his time to the work. Each child should be thoroughly examined once or twice each year, and from time to time as occasion requires.

Diseased or defective children should be sent home, and the parents urged to consult a physician of their own choosing. These notifications should be followed up by the inspector, teacher or nurse, and every effort made to see that diseased or defective children are placed in proper medical hands. I am firmly of the opinion that sex hygiene should be taught in our schools. Male physicians should teach the boys and female physicians the girls. This knowledge is usually acquired in an undesirable manner, and it is best that children should be taught the truth gently, scientifically and tactfully, after the manner described by Dr. Phillip Zenner of Cincinnati.

I am convinced that great care should be taken that children are not over-crowded with school work at the age of puberty.

I also believe that the subject of medical school inspection should be thoroughly taught in all our Medical Schools.

The medical inspector's chief assistant should be the school nurse. She has only been in existence a few years, but has amply proven her indispensability. Her salary is always entirely inadequate. Everybody loves and honors her and I have never heard a complaint of her work. In Boston in one year the school nurses visited about 23,000 homes of school children, they took 2500 children to dentists, 9000 to hospitals and 7500 to family physicians. They made 36,000 surgical dressings, looked after
3400 cases of defective vision and 350 cases of deafness. Each nurse cares for a certain district and its children and parents and homes. She assists the inspector each day in his work, to whom she reports all suspicious cases. She cares for emergency cases, and treats many cases of itch, eczema, lice etc. She takes children to dispensaries, doctors and hospitals. She cares for them at home under the doctor's orders, and makes it possible for the doctor to get good results. Medical inspection without school nurses would lose much of its usefulness. In Philadelphia in 1910, it was found that without school nurses, 80 per cent. of diseased and defective children were uncared for, whereas with school nurses only 20 per cent were uncared for. The school nurse also greatly benefits the home life of her district. She teaches them decency, sobriety, cleanliness, cooking, bathing, hygiene, infant care and feeding, plumbing and drainage etc. She is an angel of mercy in the household and renders the world better for her presence, and those communities who have once experienced the benefits of her ministrations are never willing to give her up. In many small communities, in conjunction with her other work, she takes the place of the medical inspector, and does it well. She inspects the children systematically from time to time and observes them daily. She recommends medical care whenever it seems advisable, but does not treat cases herself, and must never recommend any doctor in particular; this must always be left to the family.

There is a difference of opinion as to whether medical school inspection should be accomplished under the authority of the Board of Health or the Board of Education. Such diverging views, unfortunately, frequently result in nothing being done at all. For instance in Chicago, I have been endeavoring for years to secure an annual and systematic examination of the scholars' eyes, ears, noses and throats, but this beneficial movement has been prevented because the Superintendent of Schools and the Commissioner of Health could not get together as to whose shoulders the burden should fall upon. The former feels that the Board of Health should pay the bills and do the work, and declares it would be unjust to ask the teachers to make the examinations, ignoring the fact which is attested by thousands of doctors, teachers etc., who are familiar with the work, that this little bit of time and trouble, subsequently repays them many times over, by revolutionizing the characters and teachability of many of their pupils. I have too much respect for the intelligence
of our Superintendent of Schools to believe that this is the real reason for not giving the order that these examinations shall be made by the teachers. The Commissioner of Health, on the other hand, claims that tests of this kind be made under the auspices of the Board of Education, and that this department has not the money to have either the medical inspectors or school nurses make the tests. And thus between this conflict of opinion the poor children suffer, and one of the greatest cities in the world refuses to dispense justice to its school children. It is really too bad, the teachers could easily and quickly make the tests if properly instructed; the expense would be almost nothing and the benefit to the children would be almost incalculable. It is quite well recognized by our leading authorities that the Boards of Health should care for all diseases of school children that menace the public health, such as measles, diphtheria and other contagious diseases, while those defects of the children, such as eye, ear, nose and throat defects should be looked after by the Board of Education.

And now, as I bring this paper to a close, with much to be said that time forbids, I wish to say that one great reason for lack of progress along the lines indicated in my address, is politics—selfishness, narrow-minded politics. Starting with bad appointments to Health and Educational bodies, and ending in an entire misconception of duties, the building up of political machines, and the yielding to graft, petty and otherwise, the unfortunate children of our country are continually suffering from conditions that seem incurable. I know of Boards of Education in which can be found saloon-keepers, gamblers, quack doctors, ignoramuses, corrupt politicians etc. How much of progress can be expected of a board in whose rank can be found men of this description? They are placed there for political reasons only, to pay a political debt perhaps, or to cater to some political influence. How much uplift and advancement can be expected of Boards influenced by such members? Such men do not believe in high ideals, they believe in graft and politics, they call high ideals "fads," and while saturated themselves with cupidity and avarice, believe that all men are built upon similar lines and are as incapable of pure motives and benevolent inspirations as they are themselves. Such progress as I advocate is, therefore, hard to make, because those having such movements in charge are compelled too frequently to plead their cause before an unsympathetic tribunal, incapable or unwilling
to believe that there are men and women in this world willing and eager to work for the good of the cause and without hope of reward save in the consciousness of having performed their duty in that sphere of life in which it has pleased God to call them. Do not forget that if no higher motive inspires those having such matters in charge, it is financially cheaper to educate children properly in suitable buildings, and to produce and maintain a high health standard, than it is to educate them under reversed conditions, and to pay the money out supporting criminal courts, reformatories, jails, hospitals, institutions for the deaf, blind, dumb, crippled, mental defective, paupers etc., even if we have no ambition to produce a strong race, as one generation succeeds the other. It must not be forgotten that a strong virile intellectual people is one of the greatest assets a nation can possess, not only in times of war, but also in times of peace, and each individual community should be willing to do its individual share in the general uplifting and improving and strengthening of the Fatherland as a whole.

My message, as I close, to the State of Tennessee is, to get busy and take good care of its children. Build up a strong state, by building up strong children. Start systematic State Medical School Inspection, with plenty of good school nurses. It is the best investment you can make. Do it—and do it now!

7 West Madison Street

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PEDIATRIC PRACTICE IN THE SMALL TOWNS AND COUNTRY

By W. NICHOLAS LACKEY, City Health Officer.
Gallatin, Tennessee.

My reasons for presenting a paper of this kind are two: First: The crying need for Pediatric work in many rural communities, and the opportunity thus afforded for men in general practice who will fit themselves to do reasonably up-to-date work in this line.

Second: That during the last few years a great crusade has been waged against infant mortality. The Child’s Welfare Movement has attained great proportions in the cities, but in spite of this agitation, as yet, only a faint ripple has disturbed the placid calm of indifference in many of the small towns and country districts. In the country, marriage usually means pregnancy within a few months, for there is no race suicide
there. The corn crop may fail but the baby crop is nearly always a bumper one. Owing to this fact every physician in the country sees many sick children. That he should be as capable a pediatrician as he often is an obstetrician, no one will deny. That his knowledge of this branch is frequently in adequate, he himself will often admit. In many medical schools the instructions on this subject are far from what its importance demands, and the average student does not avail himself of what is offered, as his time is so taken up in watching major operations, which it is only remotely possible that he will ever be qualified or have the opportunity to perform. Every student hopes to be a surgeon and few have ambition to become simply good general practitioners. To his youthful imagination the drooling infant has no appeal, till on that never-to-be forgotten day, with the friendly assistance of his most trusted associate he becomes the proud but frightened father of one of those little lumps of clinging humanity. It is only then, that this branch of medicine will assume in his mind an importance never before dreamed of. For the young man beginning his professional career a knowledge of pediatric work will create a reputation and give a foothold in establishing a practice as soon as anything I know. For one woman whose baby’s life he has saved will give him more advertisement in the community than a full page ad in his county paper.

I have long contended that every physician in addition to his regular work should have some branch that he has especially perfected himself in by post-graduate work, backed by an up-to-date set of books and several journals devoted to the subject. I will add that he cannot find one in more demand or more lucrative than that of diseases of children.

If the country doctor takes his proper place in his community to do good, he must enlist beneath the battle-scarred but already laurel draped banner of preventative medicine and become a Pedotrophist as well, to use a word coined by “Hoag” which means care of children. For this prophylactic work is of great importance as most children are free from disease at birth. It is also the most difficult to beat into the heads of the mothers. Wood’s Hutchinson has said! “The first doctor was a woman,” and I might add that the first pediatrician, through necessity, must also have been a woman. You will find her loath to render up her title when you first attempt to instill into her mind modern methods of caring for her children.
Of course the half-done pediatrician such as I have described cannot claim the knowledge of the subject that the highly trained children specialist of the city possess, still, to say the least, he will be a great improvement over the superstitious befogged, catnip tea, gutstuffing school of infant slaughter, with a militant grandmother officiating as dean, ably and vociferously assisted by a faculty of negro mammies and meddlesome female busybodies. Certainly he is far superior to the old foggy practitioner who believes the only difference between treating a baby and adult is the difference in the dose of some nauseating shotgun mixture that he pours into the child’s already revolting stomach. 2. (Kerr) Such a one fails to realize the great contrast between the adult and the infant, and the marked difference which relates particularly to etiology, pathology, symptomatology, diagnoses, and treatment”. 3. (Kerley) The various therapeutic measures other than drugs that play such an important part at the present time in the treatment of children, such as diet, fresh air, cold, heat, massage, electricity, climate, etc., seemingly are a sealed book to men of this kind. “Really successful therapy when applied to the child, demands a knowledge of detail greater than in any other kind of work.” Right here let me say that the harm done sick children, owing to the struggle to give them medicine with a taste that would produce emesis in a healthy crawfish has never been estimated.

4. Fantus has succeeded with the aid of sugar and cocoa butter, pressed into tablets and afterwards sprayed with the flavor desired in perfecting the candy form for about twenty remedies. The use of these and others on the market, and a little care in improving the taste of your mixtures, will do much to avoid this fault in drug therapy, and to improve your standing as a physician with both mother and child.

Inspite of the more favorable environment of the country on the child, pediatric practice is more difficult in some respects than it is in the City. The city mother through the influence of her better trained obstetrician and the educational effect of mother’s clubs, child welfare leagues etc., is in a position to be better educated as to the proper care of her children. Even the women of the slums have the benefit of the persistently applied educational methods of the City Board of Health, free clinics, milk depots, and the most important of all the visiting city nurses. The country woman as a general thing has not
evinced (at least in my locality) much enthusiasm. "In raising the baby by book," as she disparagingly calls it. She usually skips even the excellent articles on the subject that have appeared so frequently during the last few years in the several woman's magazines in her eagerness to find the latest embroidery pattern or to see the newest thing in hats. The physician who attends the country woman during her confinement frequently leaves without giving any instructions about the baby at all, so that its care falls in the south to an ignorant and superstitious black mammy, or worse still, a grandmother of the old school whose list of diseases while only embracing worms, teething, croop, summer complaint, bold hives, and tight prepuces, has a pharmacopeia of mixtures that in comparison would make some of the famous brews of remote antiquity taste like ice cream sodas. She believes because the baby cannot talk and tell the story of its life that doctors can't find out what ails them anyhow, forgetting that the mother and herself can usually supply a superabundance of conversation as well as many other subjects not always necessary to the elucidation of the child's history. Her usual dietetic rule is to give the baby a taste of everything you eat after cautioning you first to chew it for the child. She firmly believes sweet potatoes are a panacea for summer diarrhoea; that pot-liquor improves the child's digestion; that sheep-nanny tea will break out the measles. She sees no danger in strawberries, bananas, and at times even cabbage, as the violent and oft times fatal digestive disturbances thus produced, she attributes to teething, she knows for she has raised several of her own in spite of this dangerous menu. The Lord is credited with having taken the rest. While she will pooh pooh your new-fangled notions on baby raising as she calls them she will fall over herself to read a government bulletin or any other article on the scientific way to raise her own fancy breed of chickens.

In justice it must be admitted that some of my brother practitioners do give instructions to the mother as to the care of her new born infant, yet it is often done in an unimpressive and half-hearted manner, as he is saying to himself, "what's the use of me wearing out my mouth, you won't do what I tell you to do." His remarks fail to make the impression desired on her mind, so when the occasion arises she turns to the only other source for her information. It is not strange then that the baby is drenched with teas, or that a piece of fat meat
tied to a string is placed in its mouth to cut the phlegm out of its throat; or that breast milk is dropped into its eyes to cure conjunctivitis; or that the blood of the betsybug is dropped into its ear for earache; or that many other equally as barbarous, disgusting, and nearly unbelievable remedies are administered to the helpless little sufferer. I, myself, when an infant, fell a victim to the betsybug method of treatment administered by my black mammy during the absence of my mother. This is why I speak with so much feeling on the subject.

The agricultural department has at last succeeded in teaching many of the farmers that the application of practical scientific methods in the breeding and care of domestic animals not only protect them against disease but greatly enhance their value. As yet it is difficult for people in the country to realize that if it takes some intelligent care to raise a fine pig, how much more scientific care is required to raise the most helpless and delicate of animals, the baby. Thirty babies die out of every one hundred born during the first year. With a mortality as high as this among farm animals, the farmer would ultimately drift into bankruptcy; but as the successful raising of these animals concern the pocketbook, they receive the care and attention of highly trained government experts, while the helpless baby, supposedly the darling of the home, if providently inheriting a strong constitution, survives in a certain percentage of cases in spite of the lack of the simplest rules of hygiene, and usually on a diet that would convert, in a month, an ostrich into a sour visaged dyspeptic.

Even the milk on the average farm, that the city people so fondly imagine to be pure, contains as many, if not more, bacteria per cubic centimeter than does many of the inferior grades sold in the city. The reason for this is easily explained, as the milk and its handling is given over to the dirty and usually ignorant negro farm hand who milks the uncurried cow in a dirty stable or dusty barn lot, often with unwashed hands, paying no attention to the cows unwiped udder, using an old fashioned wide mouth pail admirably adopted to catch the dropping particles of dirt and manure, the milk being totally unprotected from the swarm of flies that always abound, the milkman’s attention being distracted by his vain efforts to keep off the sucking calf by hitting it on the nose with a club.

While the fool mother is no more indigenous to the country than the city, she has more opportunity to kill her
baby during the doctors absence, as the trained nurse for many reasons is not available. It devolves upon you to train her, especially during attacks of severe illness in her baby, to turn a deaf ear to meddlesome advice, and obey your orders unhesitatingly like the soldier on the firing line. For there is no truer saying than ‘she holds your reputation and her baby’s life in the hollow of her hand’. Always write your directions when giving the mother instructions for treatment. A printed diet list of the more frequently used foods and their preparation suitable for the feeding of sick children, will save the doctor much time, as he can check off the foods to be administered.

After the birth of the baby considerable time should be spent in explaining in the most interesting and enthusiastic manner possible how it should be cared for. As the mother is prone to forget your instructions on account of their number, place in her hands for future reference one of the several excellent little books written for this purpose. Every mother in the country should have a thermometer so she may dispense with all guess work on her part as to the child’s temperature before the physician is called, or during its subsequent illness. Explain the importance of a prompt examination of every sore throat for fear that it might be a case of diphtheria; dwell also on the fact that when in doubt we always give antitoxine; that a persistent pain in the belly is not always due to colic; that it might possibly be appendicitis; that referred pain from pneumonia is frequently felt in the same region; that the so-called growing pains are frequently a manifestation of rheumatism which is prone to involve the heart in children.

Teach her to stop feeding and give oil and a carbohydrate diet on the first appearance especially during the summer, of abnormal stools or diarrhoea, and in older children to restrict the child’s diet on the appearance of fever from any cause as the temperature may provoke an attack of indigestion on top of any disease the child may be contracting.

In the country, diseases of the respiratory tract seemingly are more prevalent during the winter than are gastro-intestinal disorders during the summer, and for this reason, teach the mother that colds are nearly as contagious as smallpox, and to isolate the baby from other members of the family suffering from colds or influenza. Impress upon her the dangers from the barbarous custom of kissing, and the importance of baby hav-
ing its own individual handkerchief, and not the one used indiscriminately by the mother on the running noses of the other youthful members of the family; that the dust free, well ventilated and clean nursery, with as much time spent in open air as the weather will permit are among the best preventatives against the curse of civilization-colds.

Earache, in the country is usually looked upon with unconcern and treated as a disease rather than a symptom of otitis media, or inflammation of the external auditory canal. This practice has resulted in several instances in attacks of mastoiditis, which terminated fatally. While every physician is not expected to be an otologist, he can with a little practice learn in most instances to recognize a bulging ear drum in time to have it incised before serious damage has resulted.

Not only does scarlet fever, measles, pharyngitis, etc., give rise to dangerous ear complications, but in my experience they follow influenza more frequently than any of these diseases named.

Don’t be mislead by the absence of pain in the diagnosis of middle ear disease, for it occasionally occurs with fever as the only symptom.

Educate your patient to the importance of prophylactic doses of antitetanic serum for nail wounds and other wounds about the feet, these are especially frequent in the country child on account of his disinclination to wear sandals. The neglect of this harmless procedure has cost many lives in my community.

It has been said, that there are probably two thousand children in Tennessee being nursed by negro women who have consumption, and I might add, though I would not venture to say, how many are being nursed by negro girls who are consciously or unconsciously the victims of gonorrhoea. In my practice, I have had three girl children and a boy of two years infected with this disease from this source. This disease is known among negroes as “the running range,” and in the women, is practically, never treated.

The urine of babies is not examined as frequently in the country and even in the city as it should be, on account of the difficulty of securing a sample. When the catheter is not used I employ a method suggested by (5) Kilmer of placing a wad of cotton in female children over the vulva, held in place by the diaper. When this becomes wet it can be squeezed into a
vessel. The same method can be applied to male children but the better way is to use a condrum or finger cot over penis and scrotum which may be held in place by a tape around the child's waist.

The examination of the urine of every child having chills or rigors, the child becoming cold and pinched and running a continued fever of remitting type will once in a while, as happened to me, change the diagnosis of malaria, or typhoid fever, to pyritis, which is according to (6) Hatch more frequently responsible for these symptoms, especially in girl children, than any other condition in infancy.

On account of the distance and resulting expense of calling a physician, the people of the country are more prone to resort to patent medicines than are people in the city. This is further encouraged in Tennessee by that blot on our civilization the traveling patent medicine vendor who goes from house to house in the country with his wagon load of linaments and often dangerous nostrums. Much can be done to fight this practice by education and by supplying the mothers with a few harmless remedies to be kept in her medicine cabinet to be used as home remedies for the more simple ailments.

This is far better and safer than having your little patient dosed with cascarots, syrup of pepsin, castoria, doped with the so-called teething powders or the numerous varieties of baby-killing soothing syrups.

The necessity for artificial feeding is much rarer in the country than the city. When it comes to an appreciation of the importance of maternal nursing, here, at least, is one point on which grandmothers, old-lady neighbors, and negro mammys all heartily and enthusiastically agree with the doctor. The only trouble is to ever get them to wean their children at all. I have often seen children two years old surreptitiously leading a too fond parent to some secluded spot, in order to perform in private, this maternal function. I have seen anemia and rickets in children that were nursed too long, without other proper additions to their diet.

When from failure of maternal feeding, the question of wet nursing the child arises, the country doctor is indeed in a quandary for it is rarely ever possible in the South to obtain any but a negro wet nurse, and in all but a few instances, the negro wet nurse has been on account of disease or racial traits of character, an absolute failure in this role.
In giving instruction for artificial feeding a printed prescription blank to facilitate the mother in preparing the milk mixtures and administering them to her child will be found most useful. Her interests can also be much stimulated on the subject by furnishing her with and showing her how to keep a weight chart.

While any extended discussion of artificial feeding, probably the most difficult problem is pediatrics today would be out of place in a paper of this general character, it will suffice to say, that since the publication of the study's of Czerny and Keller carried toward their logical conclusion by Finkelstein and his school, I have to a certain extent abandoned the difficult percentage system of feeding which has done so much to drive doctors and mothers to the use of the numerous preparatory foods on the market in favor of the simpler feeding methods of fitting the food to the baby and not trying to make the baby fit the food, as each infants, nutritional requirements is a law unto itself. (7 Levy.)

For determining its requirements we have the age of the patient, its weight, the weight of the average normal child, and the principal of coloric feeding. This procedure renders this work simpler for the doctors and the mothers, and exceedingly important point for the work in the country.

Gastro intestinal disorders during the summer are much more frequent in the country in proportion to the infant population than people in the city would imagine. The reason for this is the average mother's nearly total lack of knowledge of the proper diet for her child; the improper care and handling of milk; the swarms of flies from the near-by stable yard, the farm houses frequently being unscreened. These and other unsanitary conditions, combined with the high temperature which is only slightly less oppressive than that of the city, tends to produce the usual rise in death rate familiar to the city physician during the summer.

(88) Morse gives voice to the hope much desired by us all, when he says: "That with increasing knowledge of the bacteriology of the intestinal tract in infancy some simple method will be evolved which will make it possible to readily differentiate between diarrheas due primarily to chemical changes in the intestinal contents and the disturbances of the digestive functions depend on them, and those due primarily to bacteria. At present it is extremely difficult to distinguish be-
tween them, and correspondingly hard to know how to treat them.

In Conclusion, allow me to say by way of recapitulation, that the indifference and lack of interest on the part of many members of the profession in the country to pediatric practice and the modern care of children, the ignorance and prejudice of most country people against any change in their long established unscientific methods of raising their children. The deplorable lack of sanitation on the average farm, which has so frequently, and so forcibly been brought to your attention by Dr. Stiles and Dr. Olin West in the course of their work for the eradication of the hookworm, all combine to do much toward giving us an infant mortality in the country, that will come as a surprise to many of you who are engaged in the practice of medicine in the cities.

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SEVEN SEX TALKS TO BOYS

BY IRVING D. STEINHART, M.D.

New York City.

Tonight let us talk over some things which I think will help you avoid assisting in the degradation of the sex of your mothers and sisters. You notice that I keep constantly reminding you of the fact that those whom you might think of injuring morally and physically are just the same as your mother and sisters. I have a reason for this. I believe that if this one fact alone was sufficiently impressed upon your mind so that it would instantly re-occur to you when your thoughts were running towards the commission of an act of immorality, it would cause you to hesitate and think it over again—and on thinking it over you would probably decide not to make a beast of yourself. Why would this be so? Because all of you I hope have respect for your mothers and sisters and would have no wish to see them led into or assisted in leading an immoral life. The very thought of such a thing as considered in connection with your mothers and sisters is probably sickening and disgusting to you. Your mental picture of such an event is most unpleasant. In fact you do not even want to imagine such a thing as being possible. Well, no other brother does, either, so if you all had such thoughts at the proper time what a glorious falling off in immorality there would be. One factor that helps towards morality is cleanliness of the sexual
parts. If these parts are kept thoroughly clean by a daily wash all sources of irritation are removed and there is nothing then to call the constant attention of the mind to these parts. This helps a whole lot for very often the irritation caused by dirt, the residue of dried urine, or other substances is misinterpreted by the male as a real sexual desire—a very grievous and costly misunderstanding with the possibility of gonorrheal infection, syphilis and insanity as penalties for the error. Circumcision makes for cleanliness, a fact that was early recognized by the founders of the Jewish race and is now universally practiced by every intelligent race regardless of creed or color. The reason circumcision makes for cleanliness is the fact that the removal of the foreskin covering the head of the penis does away with a place where it would be easy for urine to get into and dry. When urine evaporates the solid matter that was dissolved in it is left behind. Such solid matter remaining between the foreskin and the head of the penis would not only by its presence cause constant irritation to these parts but this resultant irritation causes an inflammation to be set up which becomes chronic and in time is very likely to cause the growth of several small masses in these parts. These masses are not unlike a cauliflower in looks. They are commonly known as "venereal warts." When they appear they should be promptly removed by operation for they have a tendency to undergo certain changes in their make-up which brings them into the class of deadly tumors. To my mind every male child should be circumcised at birth and every male who is not circumcised should be. Lack of circumcision even makes the course of venereal disease worse. So all in all circumcision is a good thing in a medical sense as well as in a moral preventive sense. Of course even non-circumcised males can keep themselves clean by drawing back the foreskin every day and washing the parts, but it means handling of these parts, a thing we always advise against. Another factor in making for morality is the company you keep. I am a firm believer in the early commingling of the opposite sexes. I believe that boys and girls should play together and be companions from very early age. I think it does them both good, teaching the boy love and respect for the weaker sex and making him more manly in his actions towards them then and in the future. It likewise benefits the girl, teaching her as it does the real value of and in male characters and developing
in her those valuable womanly traits that make her like the real wife and mother. When boys and girls are companions each boy will find there is just one of the girls that he likes better than the others. He will want that girl to feel the same way towards him as he does towards her, and he will work to bring about that result. Little girls of the proper kind do not take much to rough, bad-mannered, ill-spoken boys, and knowing this our little boy trains himself to be a little gentleman in every way. And being a little gentleman as a little boy is very likely to become such a fixed habit with him that he will grow up into a big gentleman when he is a man. His bringing up will have been such that immorality will have no place in his thoughts, but a desire to avoid evil company, male or female, who are prone to indulge in it.

A woman of the kind we speak of as "fallen" will have no charm for him but will excite in him a feeling of pity for her condition, and arouse in him a disgust if she attempts to persuade him to lower himself by helping her continue her degrading calling. Cultivate the companionship and friendship of refined, respectable girls and you will never desire to know the other kind. Being in the company of the right kind of girl will improve your mind, strengthen your ambitions and preserve your health from the possible ravages of venereal diseases. You can have all the right kind of pleasures and amusement in the company of the kind of girl you want your sister to be and you will not be in danger of spending part of your life in an asylum for the insane. Good books like good girls are good company for you. They are instructive, mind broadening and interesting. Trashy books written especially for the idea of pandering to or exciting sexual instincts are not good company for you, and your time consumed in reading such "stuff," for that is the name for it, is wasted time. Life is too short and time too valuable to be wasted this way. By avoiding such books you will be doing a double service to humanity. You will be developing your mind in the proper channels and you will also be helping to make the printing of such unfit reading matter unprofitable, and if we could do away with the printing of such "no good" books the cause of morality would be very much assisted. In fact the commercial spirit has a good deal to do with the question of morality. For the sake of gain in mere money many oppose the attempts that have been, and are being made to save our boys and girls from
morally dishonest lives. I trust that these "lower than brutes" persons will reap the reward they deserve, both here and in the hereafter. One can certainly think of no punishment for them that fits the crime of these despicable vultures who would fatten on human misery and disgrace. Another thing that will help you to be moral is the avoidance of alcoholic drinks at any time but especially outside of your home. Alcohol is both heating and stimulating. It befuddles your normal good judgment and causes you to do and say things that you never thought of. The public drinking saloon is a double menace for it contains several elements that threaten both your health and morals. In the first place many of these saloons are well named dens of vice because the owners or them permit their places to be the gathering places of fallen women and pay them a commission on all the drinks they persuade you to buy for them and yourself, while the women are trying to get you to risk your health and degrade your manhood by holding relations with them. Some of them even go further and have rooms to rent for immoral purposes and pay these poor degraded women for getting you to use these rooms. You see I don't tell you not to drink at all, although you will be better off if you don't. I only advise you to avoid hanging around or in these saloons with the back room annex for women to tempt you to do worse things than drinking. Such places are not worthy of the patronage of any decent person. In the second place in none of these places is much care given to the cleanliness of the glasses and you are liable to contract any of several serious diseases including syphilis, while you are having your refreshment. There may be saloons run on a clean moral basis as far as not permitting fast women to congregate in them but I am afraid they are all careless of the cleaning of their glassware. In fact this latter fault is not confined to the saloon. Do not listen to nor repeat so called "funny" stories in which the joke has for its point some reference to the sexual relation. It is not humorous to make jokes about sacred things and certainly the marriage relation should be so considered. Under ordinary circumstances there is no necessity for mentioning it at all in the course of ordinary conversation. When it is spoken of it should be treated with the respect it deserves. Strict attention to your business or studies with the determination to go ahead leaves no time for unprofitable, debasing sexual thoughts or desires. Likewise an interest in athletic sports...
helps good morals, for the prospective athlete has no energy to waste and feels that time spent in training benefits his health and strength whereas dissipation of sex etc., is harmful. In fact, no trainers would permit it and, with a mind full of clean sports, one's thoughts will not run to dirty actions. Overeating of meat and rich foods may be mentioned in passing as being conductive to sexual stimulation. Likewise anything within or without that irritates pleasantly or unpleasantly serves to awaken a desire for sexual contact. Included in this latter is the chronic inflammation set up by masturbation, wounds or diseases of the sexual tract, abnormal urine etc.

Do not handle these parts any more than is absolutely necessary at any time, whether directly or indirectly. Again, exercise a good deal of care in the choosing of your male companions. Don't be a member of a gang of corner loafers or barroom loungers. Consider your time too valuable to be spent uselessly in pool and billiard rooms day after day, night after night in the company of no account persons. Don't misunderstand me; pool, billiards and bowling are delightful pastimes in the right kind of company, but harmful when indulged in to the exclusion of the real things of life. I am a most firm believer in the old saying, "All work and no play makes Jack a dull boy", but likewise there is lots of truth in the one that says, "The Devil finds lots of evil for idle hands to do." In choosing your male friends, choose for your companions and friends those who are worthy of being in your company. You want to be improved by your company not put down to a lower level. Do not be led into doing wrong because you are afraid to say "No" when something is proposed to you which you feel is wrong. Remember in the slaughter houses the newly arrived sheep are led to the killing block by an older sheep who is trained to sacrifice his kind. They follow blindly the lead of this so-called bell sheep because they have no minds of their own. Allowing this bell sheep to do their thinking for them costs them their lives. Don't be like the simple sheep that allow themselves to be led unquestioningly and trustingly to slaughter. Use your brains. That was what God gave them to you for. In life there are many bell sheep and lots of silly unthinking lambs who allow others to do their thinking for them and suffer accordingly in health and reputation. It is just as easy to be a bell sheep as an insignificant member of the flock. Therefore in your company seek to be
the leader and a power for good—and good includes the pro-
tection of the sex of your mothers and sisters, in other words
morality. Not only practice it but preach it, not only preach
it but practice it. Don’t be like the minister who, the story
goes, said to his congregation, “Do as I say and not as I do.”

The force of a good example is a very great one. Be a
gentleman at all times in word, action and deed and whether
among strangers or people who know you. It is just as im-
portant to be well behaved on trains, boats, trolleys and other
public conveyances as it is in your own home or anywhere el-
s. It is just as necessary that your conduct be proper at
beaches, parks and other outing places as any place else. Just
act always with a proper regard for the feelings, rights and
privileges of others, with extra consideration for the old, feeble,
weak, sick or maimed, and you will be surprised at the result
it will make in you for the better. Don’t be a double person-
age, with one set of beautiful manners, words and actions for
use outside of your home and another, just the reverse of the
former of use at home. In other words, be honest in every-
thing at all times. Don’t be a hypocrite. Don’t be the monkey
who sticks his paw into the fire to pull out roasted chestnuts
for someone else to eat. Listen to the voice of your conscience.
It will not alway agree with your thoughts and desires but it
will tell you the difference between right and wrong. It will
be a very good friend of yours if you will permit it to be so.
The sort of a friend you should appreciate for his opinion can-
not be improperly influenced one way or the other. It is al-
ways on the side of right and always wants you to be—and
with it “might does not make right.” One of your compan-
ions said to me the other day that when you don’t do like the
rest of the crowd they look upon you as “queer.” Well you
can stand being “queer” if it means that you are the only real
man in that crowd. You can stand being called “queer” if
that means you refuse to degrade a woman, because your
honor tells you that the meanest, lowest and most despicable
thief of all is the one who steals from a woman her honor.
Other thieves can give back what they take or the money value
thereof, but he who ruins a woman, a member of the same sex
as his mother or sisters, can never replace or make amends for
his thefts. If being “queer” means you have a most holy love
for your mother and sisters and the proper respect and venerate-
tion for their sex, by all means be “queer.” If being “queer”
SEVEN SEX TALKS TO BOYS

means you have a proper regard for your own health and happiness and the health and happiness of your wife and children be "queer" and glory in that brand of queerness. It will be a better and a brighter world as this brand of queerness increases and infects more and more young men, and in fact all ages of men. It will mean increased health and happiness for all sexes and all ages. It will decrease the profits of asylums for the insane, it will lessen the practices of physicians and surgeons, and make drug store keeping less profitable. But it will add years and years to human life and there will be strong, vigorous persons, instead of old young men and broken down wrecks of what once were human beings. That's the brand of queerness we indorse most heartily and sincerely. With it in vogue immorality will be put in its deserved place. Those who indulge in illicit sexual contact, whether male or female, will find themselves not received in respectable society. No longer will womanhood be debased and the most sacred and intimate of human relations be made a toy and a sport without penalty accruing to both violators of human decency and morality. The world punishes the fallen woman, and her male partner in crime and shame is allowed to go away unscathed. Will you, each and every one of you, help change this, not only by being moral yourselves, wherever you are or go? There is no such thing as a double standard of morals, that of the female different from the male. There is only a single standard of morality the same for both the male and female and that says there shall be no indulgence in the sexual relations until a marriage ceremony, based on a deep mutual love, shall have been gone through. Now, I say, mutual love should be the basis for all marriages.
Whooping Cough. A Plea For More Efficient Public Regulations Relative to the Control of This Most Serious and Fatal Disease. Doctor John Lovett Morse (Boston): According to the statistics of mortality compiled by the United States Census Bureau in 1906 from a registration area comprising slightly less than one-half of the population of the United States, there were 6,324 deaths from whooping-cough among children under five years of age. The United States Public Health reports showed that in 1910 the death rates per 100,000 was as follows: Whooping-cough 11.4 per cent.; scarlet fever 11.6 per cent.; measles 12.3 per cent.; diphtheria 3.4 per cent.

I have communicated with the Boards of Health of a considerable number of cities scattered all over the United States relative to the incidental control of whooping-cough, and have received replies from 61. The death rate from whooping-cough was, on the whole, greater in the large cities than in the small. All the statistics show that whooping-cough is a serious and fatal disease. I have inquired as to what was being done in this country to limit the spread and diminish the death rate from this dread disease, and have found that surprisingly little effort is being made in this direction. Whooping-cough is a notifiable disease in only 29 of the 43 states that have answered my inquiry. Isolation is required by law in seven states, and "modified isolation" in two others. I found that there is almost no provision for the hospital treatment of whooping-cough in this country. In New York there is a special ward for children with whooping-cough at Bellevue; but only those having complications are admitted. There are also two isolation cottages at Randall's Island. With these exceptions there are practically no hospital accommodations for cases of whooping-cough. The recent investigation of Mallory has proved conclusively that the Bordet-Gengou bacillus is the
cause of whooping-cough and that the organism is present between the cilia of the epithelial lining of the trachea and bronchi. It has been found in the sputum as late as the eighth week of the spasmodic stage. It is fair to assume, therefore, that the disease is transmitted by the secretions of the respiratory tract and that it is contagious throughout the whole of the spasmodic stage.

The isolation and recognition of the organism by cultures is, however, too complicated a procedure for practical every day use. An agglutination reaction is present in many cases, but is not constant and is usually not very high. Its presence is proof of the existence of whooping-cough; its absence does not count much against it. The frequency of the reaction increases with the duration of the disease. The complement fixation reaction should be of great service in the recognition of abortive and typical cases in exceptional circumstances, when such recognition is of great importance. There is an increase in the total number of white corpuscles with an absolute and relative increase in the number of lymphocytes in the catarrhal stage of whooping-cough. This blood formula is a fairly constant one in whooping-cough and is, therefore, of considerable diagnostic importance. In the immediate future and probably for many years to come, it is reasonable to suppose that, because of the indefiniteness of the early symptoms and the frequency of mild types of the disease, almost everyone will sooner or later have whooping-cough. The important thing is to prevent babies and young children from having the disease. To prevent this we must convince physicians and the public in general of the seriousness of whooping-cough in young infants and young children and the importance of protecting them from it.

Whooping-cough must be made everywhere a reportable disease. The house should be placarded, and the inmates instructed by the health authorities as to the seriousness of this disease in infancy. The sputum and vomitus should be treated in the same way as in tuberculosis. The patient should be separated from the other children in the family, if the latter are under five years of age. There is no reason why children should be isolated and not allowed to go out of doors, provided they are kept away from other children. They should be required to wear an arm band of some prescribed color and labelled "whooping-cough" in large letters. The vitality of
the Bordet-Gengou bacillus outside of the body being slight, 
formal disinfection is not necessary. The other children 
should not be allowed to attend school unless they have al-
ready had the disease or until two weeks have elapsed since 
the last exposure, provided they are free from catarrhal symp-
toms. The community should be required to establish hos-
pitals for children not properly isolated at home and for those 
who cannot be properly treated in their homes. When these 
recommendations are carried out, whooping-cough will cease 
to be the scourge that it now is.

The Diagnosis and Treatment of Pyelitis in Infancy. By 
Doctor Rowland G. Freeman (New York). The Pyelitis in in-
fancy which is a fairly common disease, is generally under-
stood by Pediatricians to be a disease characterized by active 
remitting temperature, which is treated most successfully by 
the use of alkalies, while some cases may be cured by 
urotropin in doses of one-half to two grains three times a day 
or every three hours. Recent experiences have led me to be-
lieve that such statements should be materially modified, and 
that the pyelitis of infancy is a disease which is usually char-
acterized by a high remitting temperature, but may give rise 
to no temperature, and that while some cases may be cured 
safely by neutralization of the urine with alkalies, and other 
cases by doses of urotropin, the most efficient treatment in 
difficult cases is by the use of very large doses of urotropin 
aided by vaccines, either commercial or autogenous.

Pyelitis in infancy is due to the invasion of the pelvis of 
the kidney with colon bacteria, resulting in a purulent inflam-
mation, which can apparently occur with no perceptible rise of 
temperature at any time. Vaccines, either autogenous or com-
mmercial, are useful in controlling the constitutional symptoms 
of pyelitis. Hexamethylenamin, while sometimes effective in 
doses of one-half to two grains several times a day, does not in 
these doses cure certain cases which could be controlled by 
very large doses. Hexamethylenamin should always be ad-
ministered in small doses at first, but the dose should be rapid-
ly run up, the child and its urine being carefully watched for 
symptoms of irritation of the kidneys. Large doses of hex-
amethylenamin should not usually be continued for more than 
a week at a time, and then there should be several days with-
out any treatment or with alkaline treatment. It should be
started at the maximum dose given before, and the amount increased daily until an influence on the urine is obtained. Doses of 25 grains in a child of six months, and from 35 to 45 grains a day in a child of 9 to 12 months, may be safely given in this way to some infants.

Discussion of Doctor Freeman's Paper. Dr. Walter Lester Carr, New York: The principal fact in connection with this subject is the resort to the use of urotropin. We find its effect in small doses remarkable for the amount of irritation it causes, but if it is discontinued for a short time and then begun again, it can be run up gradually into larger doses, even though the first has irritated the kidneys. Last week, I saw in consultation with another physician, a child of six years of age in which the treatment was not started early. Upon examination of the urine, it showed the presence of colon bacillus, and a high intestinal irritation was given. The temperature dropped. Now if vaccines had been given, the drop in temperature would have been attributed to the vaccines. The rises in the temperature in this condition were intermittent. Now, what I want to bring out here is that if we had given vaccine in this case, we would never have obtained the same results as that which we have attained without its use.

Discussion of Dr. Freeman's Paper. Doctor Thomas S. Southworth, New York City: I am glad that Dr. Freeman brought out the fact that some of the cases of pyelitis run along without temperature. I am pleased to have been brought into touch with these cases which have had a definite amount of pus in the urine, but no rise in temperature. It was my privilege to see a case of pyelitis which occurred here in the city of Washington, and which I saw in the north afterwards during extremely warm weather. This case, despite the hot weather, had absolutely no temperature. I am glad Dr. Freeman has also brought out the point that we can have these cases without high temperature. There are, however, some cases that run high temperatures, and some cases that run remittent temperatures. In the administration of potash it is possible to have a fresh salt by using citrates which a drug-store produces fresh.

Dr. Henry I. Bowditch, Boston: I would like to ask Dr. Freeman one or two questions. One is as to whether he tested the urine for reaction of the urotropin during the course of
treatment with it? The other that I want to ask him is whether the urotropin is only active when it sets free formaldehyde in the urine? It does so to a very slight, if any, extent in alkaline urine. In Dr. Talbot's work, they have concluded that urotropin and hexamethylenamin act only when broken up in the form of formaldehyde, and this happens in acid urine, and to a very slight degree in alkaline. I would like him to tell us of his experience in that line during this course of treatment of this case. I think his treatment is extremely interesting and I am surprised to see how high he went up in giving urotropin. The treatment of this disease by culture is, I think, also interesting, especially the small increase in doses and the periodicity of the treatments. I think we are all much indebted to Dr. Freeman for this very interesting paper.

Dr. Rowland G. Freeman, New York City: (Closing discussion): I have been very much afraid of urotropin. A child I was treating did get cyanosis twice, and I want to impress upon you gentlemen right here that that child was cured by alkaline treatment. I started in by giving it small doses and gradually increased it. The urine was almost always acid. We got such good results from commercial vaccines that we rarely used the autogenous vaccines.

Cases of Pancreatic Insufficiency In Children. Dr. Langley Porter of San Francisco, Cal.: This condition is characterized by indigestion of acute onset and protracted course, with marked wasting, occurring in the second half of infancy and in early childhood. The indigestion is revealed by frequent, bulky, pale gray, greasy evacuations, which contain a great deal of wasted fat which is found as free fat or fatty acids, or as a combination of the two. The diarrheal discharges are usually not frequent; the loss in weight is not rapid; there is usually considerable flatulence; there is a moderate or marked fall in hemoglobin; the temperature is normal or sub-normal, and the appetite is unimpaired. There is a general consensus of opinion that if more than one-third of the fat ingested appears in the stools unsplit, or even if such a proportion carries material quantities of fatty acids, the steapsin of the pancreas might be considered to be either insufficient or inefficient. The few cases that show deficiency of fat splitting can be explained on the ground that there is a
partial or complete blocking of the pancreatic duct by that group of glands which lies about the head of the pancreas, where inflammation or enlargement would affect the duct. It seems also clearly to be demonstrated that the pancreatic lipase, amylase or alkali protease might be diminished in quantity or power, while the other two secretions are doing their work in a normal manner.

The autopsy in one of my cases and the evidences that I brought forth made it reasonable to assume that in the cases of patients whose stools showed marked increase in free fat waste, definite depression of those digestive powers usually attributed to the pancreas and the predominence of abnormal bacteria, such as are described by Herter, in the ducts of Vater, and through them the pancreatic tissue is invaded by these abnormal organisms, and that there has been an answering protective inflammatory reaction in the gland, which has damaged its secretory power, and impaired the digestive quality of its juice. The fact that many of these cases automatically recover is not an argument against this contention. The material presented in the paper is too scanty to expect conclusions drawn from it to be accepted as final; the paper is prepared in the hope that others might consider it worth while to investigate the condition from this point of view. The question of the value of vaccines in such a condition is brought up because in one case the results following the use of a vaccine were so striking that it seemed impossible that mere coincidence would explain them. It is not suggested that one certain organism is specific for this condition; it seems quite reasonable however that any pathogenic bacterium or even the colon bacillus, under abnormal intestinal conditions might become the incitor of a pancreatitis leading to a suppression or deficiency in one or other of the pancreatic ferments.

Undoubtedly a large number of cases in this group are mild and transitory, and will respond to such dietetic measures as made the intestines an ungrateful field for the growth of the pathogenic organism for the particular case.

In conclusion, I wish to say that finally after several ameliorations one patient died. The pancreas was about as large as my little finger and very hard. The other case was that of a smaller child who went down to a weight of eleven pounds. As the child was constantly losing weight, he was kept alive by maltose administered in the way of malt soup.
We made a vaccine from the pancreas bacillus merely in the hope of doing something for the child, although we had no scientific basis for doing so. The laboratory reports show an entire absence of diastase, low trypsin, and practically no fat digestion. Diastase was also absent from the urine. Whether or not this was a coincidence, I cannot say, but the bowel movements began to decrease. The child was wasting a large quantity of fats and fatty acids. The vaccine was given in doses of ten millions, and was increased to fifty millions, given three times in injections. The patient today has improved in health and seems to be a perfectly normal child, weighing 22 pounds.

Is Diphtheria Frequently a Bacteremia? Doctor Matthias Nicoll, Jr., (New York): Condari and Bierast have called attention to the fact that while diphtheria had been regarded chiefly as a local disease, yet the Klebs-Loeffler bacillus has frequently been isolated from the blood and organs during life. On account of the technical and other difficulties of obtaining a sufficiently large quantity of blood from diphtheria patients, the writer of this paper sought to solve the problem of diphtheria bacteremia by an examination of the urine of those actively ill, and of convalescents. In all, 155 patients were examined, of which 54 showed a positive urine. In six cases only were virulence tests made, all of which proved positive. Of the 54 positive cases, 32 were female and 22 male; 36 were children and 18 adults. Thirty-one urines were taken in the first week of the illness, ten in the second, five in the third and two in the fourth. One was found positive in the ninth week of convalescence. The urine, 20 to 30 c.c. in amount, was taken by means of a catheter with every precaution to insure sterility and the centrifugalized sediment spread over one or two Loeffler plates and plates of Conradi and Troch. Both Loeffler’s and Neisser’s stain were used for identification. The bacteria were found in normal as well as albuminous urine, showing that they passed through healthy as well as diseased kidneys. In most cases they were very few in number. On the strength of our finding, we made a plea for the disinfection of the urine of convalescents, until, by three negative cultures, it was shown to be free from the diphtheria bacillus. We concluded that diphtheria of the skin and mucous membrane, which showed such a predilection for the genital and anal re-
gions, was due to direct infection from the urine. We reviewed the results of similar investigations by Dr. R. Koch of Frankfort who examined ill urines from 26 patients. We also reviewed the work of Walter Beyer whose results were little short of startling. We examined 19 cases of diphtheria daily or every second day from the active stage to the late convalescence. Practically every urine examined showed diphtheria bacilli at each examination; their number being greatest during the active stage of the disease and gradually diminishing. In the case of eight convalescents, four of whom had recovered from their illness, three and one-quarter to three and one-half months previously, and the others eight, six, five and four weeks respectively, the urine showed the continued presence of diphtheria bacilli, six stains of which were said to have been virulent for guinea pigs, the other two avirulent. After analyzing our findings, we concluded that diphtheria bacilli might occasionally gain access to the blood and be excreted in the urine in very severe cases of diphtheria with marked ulceration of the mucous membrane of the pharynx and tonsils. This fact is of theoretic interest, but of little practical importance to the physician. We believe that the identification of diphtheria bacilli in the urine should not rest on morphological characteristics, but be confirmed by isolation and animal inoculation controlled by the use of diphtheria antitoxin.

The Ammoniacal Diaper and Its Correction. Dr. Thomas S. Southworth, (New York): The occurrence and persistence of a strong ammoniacal odor upon an infant’s diaper is noted with sufficient frequency to remove it from the category of great rarities. It has usually been ascribed to decomposition of the urine after its passage. Not one of the American textbooks offers suggestions for its correction and it is probable that the condition has not received any general attention. The five cases which I am reporting permit the deduction that in infancy a noticeable ammoniacal odor to the diapers might yield either to the administration of alkalies, or to a reduction of the fat in the milk mixture, or to a combination of both measures. The conclusion in regard to the etiology of the presence of ammonia in the urine in excessive quantities is, according to Keller and Czerny, that ammonia does not appear in the urine in normal infants in sufficient quantities to make its presence known by the odor. Such an odor is a concomit-
tant of digestive disturbance, although it by no means appears in all such cases. Under normal conditions a considerable portion of the nitrogenous constituents of the food is transformed in the organism into ammonia compounds, and then converted into urea and excreted as the latter in the urine. A large part of the urea is found in the liver. Changes in that organ are commonly found in gastro-intestinal cases, and these changes may interfere with urea formation and lead to the excretion of large quantities of ammonia in the urine. The increase in the ammonia excretion may have another explanation, which depends upon the chemical properties of ammonia to combine with acids having an alkaline base. The ammonia takes the place of fixed alkalies and forms with the ammonia salts, which will be excreted in the urine. As the ammonia salts in the urine increases, the urea is correspondingly decreased and vice versa. Therefore, an increased excretion of ammonia could be caused by an increased production and excretions of acids, except that the abnormal presence of acids might arise from two sources: either from an increased production during the product of metabolism, or from an increased formation or decreased absorption in the intestinal tract. This complicates the problem, if the acids are present in excess; for if they are not oxidized, they are neutralized either by calling upon the fixed alkalies or by calling the ammonia into requisition. Therefore, the condition of the infant and the type of food are important in determining the amount of ammonia excretion. It has been found that the fats are the element in the food to increase ammonia excretion through the formation of fatty acids. The amount of ammonia excretion may be increased or decreased by a variation in the amount of fats. Where there is enough ammonia in the urine to reveal its presence by its odor, there is also a loss of the fixed alkalies. The less available alkalies taken into the body the greater the necessary abstraction of alkali from the tissues. The therapy of excessive ammonia excretion must therefore be directed toward two ends: First, to prevent the improper formation of acids; and, second, to prevent undue loss of alkalinity. The latter could be partially effected through the administration of alkalies by the mouth. A rather limited experience leads me to believe that calcium magnesium and perhaps potassium have a better base for this alkaline treatment than sodium. The second and more fundamental measure is to promote a bet-
ter metabolism of the fats by reducing the amount with which the organism is called upon to cope. The food should be such as to be fully digested and oxidized with the least formation of acid products. In persistent and long standing cases in which a completely fat free milk does not effect a cure, we have found it advisable to use a malt soup mixture of readily absorbable carbohydrates. More attention should be paid than has been in the past to the ammoniaecal diaper as a clinical sign. It directs attention to a disturbance of metabolism, presumably traceable to an actual or relative over-feeding with the fat of cow's milk.

Discussion On Dr. Southworth's Paper. Dr. David Murray Cowie, Ann Arbor, Mich.: I would like to mention in reference to the occurrence, recurrence and persistence of strong ammoniaecal odors upon an infant's diaper, that we have made a routine examination for acetone or the so-called ammoniaecal stools. I think it will be noticed that the ammoniaecal odor does not come immediately after the stools, but after the composition has been exposed to the air. Sodium chloride and acetic acid were the final tests we used to ascertain the amount of ammonia present. By these tests we can in a way control and see to what degree the acetone bodies are present. The setting up of an ammoniaecal outfit in a room by the nurse, and the placing of the stools in this room for an hour will give you the quantity of ammonia in the urine. I think we will find that some of our children die from acid intoxication unrecognized, and I should like to emphasize the fact that we should make very specific examinations for albumin, casts, and sugars, and also for these so-called acid bodies.

Dr. Thomas Southworth, New York City. Closing discussion: I only wish to emphasize the importance of tests for noticing the ammonia present in infants' stools and urine, but do not consider it necessary to make the tests according to the very elaborate methods. I do, however, think that we all should take particular pains to watch the odor of the diapers of infants for a clinical sign.

Duodenal Ulcer In Infancy. Dr. Emmett Holt of New York: I will give you a brief abstract of my paper based on the observation of four cases of duodenal ulcer which have recently come under my observation at the Babies' Hospital. After getting a history of the cases, they were all examined
at autopsy and found in the same situation; that was, just below the pyloric ring and in the posterior wall. In size they averaged about one centimeter in diameter. They were all round punched out ulcers in appearance; there was no inflammatory reaction; there were no signs of repair, and the base was necrotic. Duodenal ulcers until recently have been supposed to be exceedingly rare in infancy and childhood. Since 1903, groups of cases have been published by several writers, and during the past two years the increasing number of reports indicate that the condition is not at all uncommon, but that it has been heretofore overlooked. As compared with gastric ulcers duodenal ulcers are relatively common. In 1908 Entz of Budapest in 364 autopsies in infants found 10 cases of duodenal ulcer and only one of gastric ulcer. Helmholz while working in various European hospitals found 16 cases in six months. Schmidt reported in 1109 autopsies in infants in the first year 20 cases of duodenal ulcer. The sites of the ulcers is quite uniform, being in the great majority of cases just below the pyloric ring. In about one-third of the cases multiple ulcers are present, usually only two or three. The ulcers vary from two to three millimeters in diameter, are usually circular with sharply defined edges and have the characteristic punched-out appearance. In about one-fifth of the cases reported perforation had taken place. The cause of the ulcers has been generally assumed to be a thrombosis, then necrosis and subsequently a self-digestion of the intestine by the acid gastric juice as it has been noted that practically all the ulcers are above the papilla. Duodenal ulcers have been found associated with melena in the first few days of life. In such cases the ulcers are usually small and multiple. The cause here is assumed to be septic thrombosis. Again a casual connection has been assumed between duodenal ulcers and marasmus and infantile atrophy. Helmholz attached much importance to this view but I regard this connection as an accidental one in common with a number of other writers. Probably the lowered vitality of the intestinal mucosa of such children is a strong predisposing factor. It is rather interesting to note that in not a single one of the reported cases in infants has duodenal ulcer been associated with burns, although Perry and Shaw in 149 autopsies upon cases of burns in adults and older children found five with duodenal ulcers. Collins reported a frequent association of duodenal ulcer with nephritis. The various
views indicate how diverse are the opinions which have been held regarding the pathological association of this condition. The probabilities are that none of these has a very close connection. The diagnosis during life is extremely difficult and is made in but very small proportion of the cases. In Schmidt's twenty cases it was made only twice. In many instances the only symptom of peritonitis is acute collapse followed in a few hours by death. The vomiting of blood, either clear or coffee ground material, is seen in a small proportion of cases. It is a noteworthy fact that both hemorrhage and perforation may be the cause of an acute collapse; the hemorrhage being in many cases internal and a diagnosis under these conditions is impossible. The sudden development of acute perforative peritonitis in an infant should lead one to think of duodenal ulcer. In one of my cases the passing of the duodenal catheter led to a diagnosis of the existence of duodenal ulcer, which was confirmed by autopsy. There could have been no reason for suspecting that the passage of the catheter was the cause of the ulcer. This means of diagnosis would be a valuable addition to a means of recognizing these cases. Spontaneous recovery occurs in a small number of cases, how often this occurs it is impossible to say, for only the most careful examination of the intestines will reveal the cicatrix of an ulcer. It may fairly be assumed that this condition is fatal in the great majority of cases. There is little to be said regarding the treatment. With the uncertainty of diagnosis which exists at the present surgical treatment is practically out of the question. It should be urged upon those who see autopsies on infants to make a careful and systematic search of the duodenum with a view of determining the presence of ulcers which might readily be overlooked in a superficial examination of this part of the intestine.

Dr. F. S. Churchill, Chicago, Ill.: Dr. Holt, you spoke of passing a duodenal catheter without apparent injury to the duodenal ulcer. There has been, of course, no injury or perforation in the case where you used the catheter? I would like to ask if you would consider it safe to pass the duodenal catheter in any other cases except in cases of duodenal ulcer? In gastric ulcers it is considered extremely risky, is it not?

Dr. J. P. Crozer Griffith, Philadelphia, Pa.: You may perhaps recall that two years ago I reported before this society
two cases of duodenal ulcer in children. One of the cases did not die but the other died in five and one-half months. An autopsy was performed and I found it had died from perforation and hemorrhage.

Many of the points that Dr. Holt has brought out in his paper bring to my mind the fact that in all probability this disease is much more frequent in the new born infant than we may have heretofore believed. I doubt very much, however, whether it is at all a frequent disease in children past that stage, and if you have found it in older infants, you have found it more often than I have.

The common autopsy at hospitals is an examination of the intestines throughout, but in the new born infant I have no doubt but that this ulcer has been sometimes overlooked. Two years ago I could not find any reference to this ulcer in any of the text books except Fischer, who said that "gastric ulcer is extremely rare and duodenal ulcer more so."

Dr. Godfrey R. Pisek, New York City: From my own observation gastric ulcer has been exceedingly rare. In regard to the condition being the result of thrombosis, I should like to cite the case of an infant that came under my notice. The infant was a healthy nursing baby. I was called into consultation in the case, but by the time I arrived the child had died. I had an opportunity to make an autopsy on the body a few hours after death. The case had been diagnosed as duodenal ulcer because there had been blood vomited and there had been blood in the stool. From the autopsy the child showed the characteristic signs of duodenal ulcer, which in a healthy child we concluded was caused by thrombosis, but in a marasmus infant one might ascribe to other causes.

Dr. Maynard Ladd, Boston, Mass.: The Roentgenograms have been used successfully in adults and I do not see why it could not be used just as successfully with children. I would suggest the use of the bismuth meal and the X-ray as a diagnostic aid since it has been successfully used in adults.

Dr. E. E. Graham, Philadelphia, Pa.: In Philadelphia I had a case of an infant of six or seven months old, which was suddenly taken violently ill and went into collapse, and died soon afterwards. The illness had been of such a short duration that the case was a coroner's one, and I freely confess that before the autopsy I was entirely in doubt as to the cause of death. The autopsy showed a perforating gastric ulcer.
Dr. H. M. McClanahan, Omaha, Neb.: I merely want to mention one case of duodenal ulcer in an infant aged six weeks, and add a case to the literature on gastric or duodenal ulcer. I am free to confess that diagnosis was made on the post mortem. The infant was not thriving very well, and finally died very suddenly from profuse hemorrhage from the bowels. The post mortem revealed such an ulcer as here described. The child died from a state of collapse, and I am very glad indeed to have heard this paper here today.

Dr. Matthias Nicoll, New York City: It is a sad commentary on the work of the pathologists who have made so many autopsies in a routine way, and who have seen so few cases of duodenal ulcers. I should like to ask Dr. Holt whether they have failed to look for the duodenal ulcers, or whether they have passed over a great many cases in autopsies because of the difficulty in recognizing these ulcers?

Dr. L. Emmett Holt, New York City: To begin with the last question first, I will say that large ulcers are seldom overlooked by any one. The kind of cases that might be overlooked by an ordinary autopsy are due to the wide distribution of the degeneration of the mucous membrane, and not to a perforating hemorrhage.

Regarding the risks of passing a duodenal catheter, I would say that the risk is considerable; but if the ulcer is close under the pyloric ring, it is well protected, and I am inclined to think that the risk of perforation by the use of the catheter is very small.

Casein In Infant Feeding; Experiments In Exact Percentages. Dr. Henry L. Bowditch (Boston): Up to this time, the percentage of proteins, especially casein, in milks and formulae has not been emphasized as much as would seem to be right. It has been taken for granted that they are fairly exact and constant. One has merely to examine for casein and albumin in creams and milks, to find that the quantity of casein varies considerably, as does the albumin. If this be true it is natural to expect a considerable discrepancy in casein formulae or mixtures made from creams in milks. Milks made up according to the Finkelstein formula were examined on the Boston Floating Hospital during the summer of 1912, and we were surprised to find that the supposedly same formula of three consecutive days gave a variation of from two and one-half to
four and one-half per cent. proteid. In making the tests for
the amount of casein, the method used was that developed by
Van Slyke and A. W. Bosworth of the New York Agricultural
Experiment Station in Geneva. Its operation required only
from ten to fifteen minutes, and the results were reasonably ac-
curate, usually coming within .1 to 2. per cent. of the correct
amount. This method offered the simplest and most inexpen-
sive equipment and, furthermore, was eminently practical in
the hands of the medical student. The total proteid was de-
termined by Kjeldahl's method and Phoul's modification as a
control. The difference between the casein percentage de-
termined and the total proteid has been accepted as the per-
centage of albumins other than casein. Specimens of 32 per
cent. cream, 16 per cent. cream, four per cent. cream, whole
milk, fat free milk and wheys were examined to test their uni-
formity. These products were taken from the same herd and
handled by the same men so that the results were uniform. The
casein showed the greatest variation in the creams from 1.2
per cent to 1.5 in 32 per cent. cream; from 1.5 to 1 in the 16
per cent. cream; while four per cent. milk and fat, free milk
gave only .1 per cent variation. In looking at the soluble al-
bumins, it was found that the higher creams had still wider
variations. The question arose as to whether this discrepancy
in the daily percentage strength of proteids in 32 per cent.
cream and 16 per cent. cream affected their formulae. A chart
exhibited showed that the total proteid determined in every
instance varied from the proteid in the formula, the total pro-
etid determined being lower than were supposedly ordered.
The greater variations were seen in the high fat formulae. In
other words, in twenty formulae taken at random, ordered
by various physicians, the total proteid was barely what was
ordered by .1 to 0.5 per cent. These errors in the percentage
of casein in formulae could be met in one of two ways. 1. The
casein in the cream and milk, as well as other ingredients
necessary for the formulae could be determined and proper al-
lowance made so that the percentage of proteid was accurate.
2. The casein percentage might be estimated in creams neces-
sary for the formulae, and dried casein might be added to the
desired amount. They took a given case and tried the two ex-
periments. 1. They used casein estimated volumetrically, and
to this added any excess required in the dry form. They fur-
ther endeavored to ascertain whether there was any difference
between the nitrogen intake and output, and further, whether the dried casein was digested or not. They found that the above methods of accuracy tallied about evenly as far as intake, retention and excretion were concerned, whether the casein was taken wet or dry and powdered, and that the dried precipitate casein could be taken without harm and was practically digested by the organism. This procedure for the accurate determination of proteids may or may not be of service; this is yet to be determined. The precipitated casein was prepared in the following way: The curds of the milk were saved from the Walker Gordon Laboratory before they were thrown away. These were derived from making whey from the necessary formulae. The curd was dissolved in alkali and precipitated with diluted acetic acid. Large volumes of water were used in diluting the acid alkali so that the acid added was very weak. The precipitate was collected, washed thoroughly, filtered, squeezed in a cheese press, washed with alcohol to extract the water, and the alcohol evaporated. The dry mass was then powdered and passed through a fine sieve. Analysis of this casein gave 98 per cent. casein and 0.2 per cent. salts.

**The Influence of Variations of Diet Upon Gastric Motility In Infants.** Dr. Maynard Ladd, Boston, Mass.: Radiographs of an infant’s stomach, taken at regular intervals after a bismuth meal, offer a new and interesting method of studying gastric motility. By means of serial views, one may obtain exact data not only of the time required for complete emptying of the stomach, but of the rate at which the food is expelled. By varying the composition of the food, an opinion may be formed of the effect of the different milk elements upon gastric motility. Moreover if the same conditions of the experiment are maintained, one may determine differences in the effects of certain formulae in several babies of approximately the same age. In a paper which I recently read before the Tri-State Medical Association at Norfolk, Va., I gave the results of my observations of gastric motility based upon a series of fourteen infants, making a series of twenty-four experiments, in which about one hundred and twenty-four radiographs were taken. Since that time I have increased the number of observations by about one hundred, so that the ideas embodied in this paper are based upon approximately two hundred and twenty-five radiographs of infants’ stomachs, showing various
stages of digestion. Factors taken into account in making these observations were the age of the child, the quantity of food administered, the composition of the food as shown by variations in the percentages of its elements, by alteration in its reaction, by the addition of such ingredients as whey, barley water etc., by the use of precipitated caseins instead of the natural proteins of milk—all these may be factors influencing gastric motility. Then, again, there are the individual peculiarities of the child. One of the first points observed in these radiographs is the curious lack of peristalsis to be seen in the normal infant's stomach, as compared with that of adults, the stomach appears to squeeze out its food by contracting as a whole upon its contents, seldom showing the marked indentations so characteristic of the peristaltic wave in the adult. In the normal case, some of the food appeared in the small intestine as soon after feeding as the plate could be taken. The emptying process goes on rapidly at first, the major part of the contents being expelled in from one and one-half to two and one-half hours, both in breast fed and bottle fed babies. After two hours the emptying process is relatively slow in the majority of cases, often requiring from four and one-half to five and one-half hours before all traces of bismuth have disappeared. In one case, that of a normal baby, there was a considerable residue of food after seven and one-half hours. This relative inactivity of the stomach after two hours appeared to be due in part to the character of the food, and in part to the lack of sufficient distention of the stomach, which seemed to be a factor in stimulating peristalsis. If an infant is given a second bismuth feeding three hours after the first, the new feeding does not mix intimately with the bismuth residue of the earlier feeding, but appears to stimulate the contraction of the stomach as a whole, and the expulsion of the bismuth residue is accelerated by the new feeding. If the new feeding is given so soon that the stomach has not had time to get rid of a large part of the first feeding, the over-distension which results produces a condition of inactivity, of stasis; and the emptying time of the stomach is prolonged. This interesting action of the stomach is an important factor in explaining why the results of feeding infants at short intervals, such as two and one-half hours, may in some babies be successful, and in others not. The normal emptying time even in breast-
fed infants taking the same quantity of food, varies within
while limits.

It is an exceptional case when the stomach is emptied be-
fore three and one-half hours. The statement that the stomach
of a breast-fed infant is emptied in two, and of a bottle fed
infant in three hours, is not even approximately exact. The
advocates of four hour feedings, on the other hand, are mis-
taken in assuming that such an interval allows the stomach one
hour of complete rest between feedings. In many cases there
is nearly as much residue after four, as after three hours.
Th’is is particularly true if the formulae contains high percent-
ages of casein. That the bismuth alone may account for the
apparent residue in these cases, is disproved by careful obser-
vation. Experiments show that in the case of the proteins, it
is quite evident that the amount of casein, when it is in a
coagulable form, is the most important factor in delaying the
emptying time of the stomach. The suggestion is strong that
the casein of cow’s milk, when given in a high percentage, has
a decided action in delaying the emptying of the stomach. If
this casein is precipitated outside the body, the emptying time
is greatly accelerated. The presence of fat has no retarding
action, and, in some cases seems to favor the exit of the
stomach contents. There is every reason to believe that barley
starch renders the food more easy of exit. (Dr. Ladd gave a
lantern slide exhibition illustrating his paper.)

Dr. E. E. Graham, Philadelphia, Pa.: I think that the sub-
ject of gastric motility is one that interests all of us; and I be-
lieve that we all agree that sugar and salt are first, proteids
next, and fat last.

Personally, I have done some work analogous to Dr.
Ladd’s, but I am not satisfied with the X-ray photographs. It
seems to me that one must be very careful about the conclu-
sions one draws, for serial radiographs are very apt to show
the bismuth meal remaining in the stomach a very much longer
time than does the ordinary meal.

I was very much interested in some of his bismuth radio-
graphs showing that the meal left the stomach entirely at the
end of 2½ hours. In the large majority of children to which
I have subjected this test, I have found that the tendency has
been for the bismuth to remain in the stomach a considerably
longer time than 2½ hours; and I doubt whether it is possible
for us to draw any conclusion as to the definite time which
should elapse when working on these subjects. If an infant is given a second bismuth feeding three hours after the first, it rushes the previous meal out of the stomach, so that the tendency should be to give a single meal so that the bismuth could remain a considerably longer time than the subsequent feeding.

**Dr. Godfrey R. Pisek, New York City**: I would like to ask Dr. Ladd in what position the children were when the pictures were taken? Whether lying up against the plate or lying on the stomach?

I was very much interested in a number of points brought out by the authors of the papers. I agreed with some of them, but do not agree with all of them. I do not think, however, I will take up the time now to speak of those points not agreed upon.

The work of Dr. Bowditch and Dr. Ladd has been very illuminating and beneficial, I am sure, to all of us; and the possibility of error is so small that it could be easily checked up.

One point that I wish to concur in with Dr. Graham is the possibility of choking up the area with bismuth, and the degree of this choking. On the other hand, it does show the positive condition better than the laboratory work; for here is a baby untouched, and we have the natural condition to deal with.

**Dr. F. S. Churchill, Chicago, Ill.**: Dr. Ladd has given us the quality of the food, but he has not given us the quantity. I should like to ask him how many tests of the breast milk were made in the cases where the breast milk were taken? What is the quantity of the test meal, and how long does it remain in the cases where breast milk is tested?

**Dr. J. P. Crozer Griffith, Philadelphia, Pa.**: What is the average ratio of the casein to the proteid?

**Dr. Bowditch, Closing Discussion**: I think the average amount of casein in creams and milks, as we tested them, was quite consistent with what we have generally believed: about 2.3 or 3.4, the albumen being 0.9, with the whey about .9 or .10 per cent.

The reason the heavy creams have a greater variation has possibly two explanations: One is that we didn’t get the heaviest centrifulized cream. If you should get 54 per cent centrif-
ulized cream, you would get little or no albumin, and under these conditions, the other cream would be more exact.

The second explanation is that in the process of centrifugalization, the proteids in the 50 per cent. cream are thrown backward and squeeze the fats out. The proteids squeeze the cream out. We thought it would be interesting to show the different samples as we made them. It happened that in making milk for the infants in the laboratory, the dietician was wasting a lot of material; and it occurred to me that it would be economical to utilize one or the other of the wasted materials, so I had her save the curds and dry them. Now if you could save the curds, and dry and grind them in a laboratory like the Walker-Gordon, you could save something like $600 to $1,000 a year. We got two or three pounds of dry casein from 48 to 50 quarts of milk per day, and that would be worth about $1.00 per pound.

I have found that children with gastric symptoms, like vomiting, etc., have done very well when fed on dry casein; and these symptoms have cleared up almost instantly, and just as easily as though the casein were dissolved in water. I was afraid to try this at first, but certainly I have found that the dry casein is much better than the other. Casein like that is soluble in an alkali; as, for instance, lime water.

**Dr. Maynard Ladd, Boston, Mass.** Closing discussion: In regard to the question as to whether the radiographs were taken with the children lying on their stomach, I will state that they were taken with the children lying on their stomachs, and that in the intervals between the exposures, they were lying on their backs in their natural position.

In regard to Dr. Churchill’s question about the quantity of food that was given, I will say that it was five ounces of bismuth at a feeding, with the exception of that last child; that child, being heavier than the others, received six ounces.

You will notice that it was not the child that had the largest amount of food at the feeding in whom the food remained the longest in the stomach.

**A Case of Diagnosis—Dr. Samuel S. Adams of Washington, D. C.** Case presented: I wish to present this case to the society: Here is a child three years of age. She had been in good health until February of this year, when a painful rash appeared and persisted for a week. The child continued to re-
main mopy, however, and about March 1, the lassitude increased. She complained of pain in her head and in her hands and feet, which were swollen and inflamed. Calomel and bromides were given, but the latter only seemed to increase her restlessness. A number of physicians have seen the case and have suggested various diagnoses, among which are anemia and tuberculous meningitis. The temperature has been normal with a tendency to being subnormal. She has cried out when her hands were touched, and for a time kept them elevated over her head. Her hands became red to the wrists when exposed to the cold, and the same was true of her feet, upon which there were deep red spots, looking like threatened gangrene. I have thought it might be angioneurotic edema or erythromalgia. Phenic acid has been given. I am now of the opinion that the ease is one of pellagra. I have a ease now in the Georgetown hospital with pellagra, but the symptoms are not at all similar. The petechial spots still remain,—as you can see,—but the child has improved.

The following is a letter that I received from the child's father:

"Edinburg, Va., April 15, 1913.

Dear Dr. Adams:

Our little girl was born August 2, 1910 and until February, 1913, her health was well night perfect. Early in February she developed a painful rash that persisted for perhaps a week. It covered her entire anatomy and was very red. Two physicians named it 'small hives.' Thereafter she continued more or less mopy and showed a failing appetite.

About March 1st, there appeared a pouring lassitude; she ate little and slept fitfully. In a few days she complained that her "head hurt," and began to sleep with her hands clasped under her head.

March 5, Dr. F. C. Downey called and prescribed calomel and bromides (two prescriptions). The liver responded duly to the first and the second seemed only to make her more restless. She grew worse gradually until Dr. D. confessed that the disease baffled him and advised calling in another physician. By then she had ceased complaining of her head and was requiring the continual massaging of her feet—also her hands were slightly swollen and inflamed.

March 17th, Dr. Ford, of Woodstock, appeared. After a thorough examination he declared all the organs sound and
regular. He said she showed a "run down" or anaemic condition and the effort must be to "build her up." We then began on a tonic. He saw her on Sunday following, without changing his opinion, and the tonic continued.

On March 26th, I called in Dr. J. W. Koontz, of Mt. Jackson. He strongly suspected "tubercular meningitis." By this time Dr. Downey was confident that the disease was pellagra, of which he had only read. In all this time her temperature was never above normal. Dr. Downey declared that the tendency seemed to be subnormal.

She never complained of her hands—though she cried out when we touched them. These she kept elevated and isolated. Of her feet she complained continually—and asked to have them rubbed or "scratched."

April 1st, I took her to Washington, and on the 2nd you saw her. Perhaps I should record that on the evening of April 1st I called in Dr. Fowler of the District Health Board. Confessing himself at sea, he advised me to see you or Dr. Acker. Your name having been given me by my brother, Rev. W. P. C. Coe, the mention of "Dr. Adams" by Dr. Fowler decided me. So you came into the case and, judging by immediate and succeeding results, you seem to have hit the mark. The redness is disappearing from hands and feet, and the hands are throwing off the old cuticle—forming new; her appetite is growing, and her body is filling out gratifyingly. If she continues to improve as now—I hardly think it will be necessary to repeat the trip to Washington. Indeed by May 5th there will hardly be an outward symptom to give a cue to your distinguished visitors."

(Signed) H. S. COE.

Dr. Samuel S. Adams: This child appeared as I saw her, with that history. The people had been walking the floor all night with her. Her temperature had been normal, with a tendency to being subnormal. Her hands became red to the wrists. She cried out when her hands were touched and for a time would keep them elevated above her head. The moment her hands were exposed to the cold air, the pain ceased. Her feet were similarly affected, and looked as if gangrenous spots would take place, and they also, when exposed to the cold, seemed to be relieved. My first diagnosis was angioneurotic edema, or erythromelalgia, but am now of the opinion the case
is one of pellagra. I placed the child on a diet and gave her acetic acid, and sent her to Virginia, where the case was diagnosed as pellagra. I have a case now in the Georgetown hospital, but the symptoms are not at all similar. I have asked the parents to bring her here today, and as she is here now I would like to present the case to the society. (Exhibits the case). You see the petechial spots still remain—but the child has improved.

Dr. J. D. Love, Jacksonville, Fla.: (After examining the child) I can add nothing to what Dr. Adams has said on the subject. I should say, however, that the dermatitis is almost typical of pellagra, and if this case had happened in Florida, I would have called it pellagra. I have a case there almost identical with this case. The nervousness referred to by the father is characteristic in a case of pellagra, but, of course, in a child, it is very difficult to judge of the mental depression. I think it is a case that may be diagnosed as a mild case of pellagra.

Dr. William Weston, Columbia, S. C.: I do not think I can add anything, excepting that I believe Dr. Love is right in his diagnosis, I will add this, however: that if the father of the child does not make a change in the child's diet, he will have the same condition appearing again next year at about the same time as it appeared this year.

In the cases of pellagra that I have seen in young children, diarrhea is not at all constant, for constipation may also exist. We know that if a person is fed almost constantly on corn flour, it will cause pellagra. Do you think that corn flour has been the cause of this condition in this child?

Dr. L. R. DeBuys, New Orleans, La.: I think that the diarrheal symptoms constitute one of the diagnostic points of pellagra, but it seems that the diarrhea is lacking in this case, also the discoloration that we frequently find. However, this case looks more like a mild case of pellagra than anything else I know of. The child has probably passed the crisis of the case.

Dr. Samuel S. Adams, Washington, D. C.: I admitted to the father that I had never seen a case of pellagra in a child, but that I had seen it in an adult. I thought you gentlemen from the south were better able to teach us in regard to this disease than anyone else. The erythromelalgia was complete,
when I first saw the child, and I diagnosed it is that, because of the intense redness of the skin, the pain, the crying of the child, and the restlessness at night, as well as all the other symptoms of pain that the child had in the feet and hands, and the relief by the cold air. These points guided me in making this diagnosis. I am informed that the child has not been fed on any corn flour, and she is undoubtedly better than when she came under my attention.

Dr. George N. Acker, Washington, D. C.: When does the parchment condition occur?

Dr. L. R. De Buys, New Orleans, La.: When it has reached its height.

Dr. Samuel S. Adams: Assuming that this attack has not passed over, it has passed its crisis, has it not?

Dr. L. R. De Buys: Yes. We have someone in Washington attending this American Congress who has done more with this disease than any other person I know of, and I will make it a point to see him and have him here present at one of your future meetings.

Acute Infectious Jaundice in Children, by Dr. Charles Herrman, of New York: This form of jaundice in children has all the characteristics of an acute infectious disease. Many text-books speak of it as gastric duodenitis due principally to indiscretions in diet. The infectious material, as yet unknown, seems to have affinity for the bile passages in the sense that the typhoid bacillus has for follicular structures. The present report is based on 98 cases seen during a period of six years, chiefly at the Vanderbilt Clinic and Lebanon Hospital Dispensary. As to age incidence, no cases have been reported under one year of age; between one and two years of age, the disease is uncommon; between three and six years of age, it is most common. After that, the disease gradually diminishes in frequency as the age advances. Acute infectious jaundice has a seasonal incidence, being more prevalent during October, November and December. One-half of the cases occur during these months. This is a strong argument in favor of the infectious nature of the disease. None of the cases showed gross indiscretions in diet immediately previous to the onset, but they were usually histories of a few acute attacks of indigestion. If the condition is dependent on digestive disturbances
it ought to be more frequent in summer; especially is this true, as most of the indigestion of children occurs in the summer. In some of the cases, there is no digestive disturbance apparent and no change in the digestive function. The initial vomiting is probably toxic. After a consideration of the bacteriology of the condition, I believe the possibilities of the examination of blood cultures and duodenal contents might give us light on the etiology. Infection occurs most likely through the digestive tract, but this is not conclusive from the fact of its seasonal incidence. Infection might take place through the nasopharynx. The symptoms are headache, lassitude, anorexia with vomiting, and a rise in temperature. In only three cases was there no fever at the time of the onset. In none of the cases was the pulse slow. A high fever was usually associated with a rapid pulse. There was pain in the abdomen in ten of the twenty-five cases; in three cases there was pain in the legs. In two of the cases, the urine became darker on the first day, and in others, on the following early days of the disease. It returned to its normal color in one, two or three weeks. In three cases there were traces of albumin, but no casts. The color of the urine was the most convenient method of determining the improvements of the jaundice. The stools were too disagreeable in odor for the parents to wish to bring them for analysis. The conjunctive remained yellow long after the improvement of the jaundice had begun. I tested the color of the urine by having five vials—one containing the normal yellow urine, and the others containing variations, both paler and deeper yellow, and by means of comparisons with these. I could measure the degree of improvement in the color of the urine of the patient. The clay-colored stools were characteristic, and were observed on the second to the sixth day of the disease. In twelve of the cases, the bowels were regular; in four, there was diarrhea; and in eight, constipation. The appetite was poor in almost all of the cases, but after the initial stage, it improved. There was itching in those in whom the jaundice was most pronounced. The liver was palpable in 21 of the cases, and normal in four. With an improvement in the condition, there was a gradual return to the normal size. In three or four months the liver and spleen were no longer palpable. The spleen was palpable in ten, and not palpable in fifteen of the cases, and returned more rapidly than the liver to the normal.
All but one of the patients recovered. There were no points of difference between the fatal case and those that recovered except a difference in the severity of the condition. As to the treatment, in many cases it was only necessary to restrict the fat and to give soup, lean meat, vegetables, skimmed milk and bread. Chologogues had little or no chologogic effect—any apparent effect of that nature was due to increased peristalsis. In prescribing the diet, one should not increase the secretion of bile, and small frequent meals are a means toward this end.

Dr. F. Forchheimer: I should like to know what the blood analysis gave him, before going on. Did you find any bacteria in the blood?

Dr. Charles Herman: No blood tests were made, doctor.

Dr. F. Forchheimer: I want to say something about Gerhardt's method. It is one of the best methods for emptying the gall bladder; but it should be used rarely, for it sometimes ruptures the gall bladder. It is a serious and dangerous operation. There is no difficulty in palpating the gall bladder empty, especially in children, but there is possible danger of an inflammatory condition in the gall bladder walls, and you might have the same result as a number of us have had. I say advisedly that this method of Gerhardt's should never be used for such work in the dark as it is liable to be followed by rupture of the gall bladder, and it is not a pleasant sensation to hear something squash, and see a child go into collapse and possibly have death follow. I have seen it once and that is enough for me.

Dr. Charles Herrman, New York City: I do not advise the Gerhart method, as it is a very dangerous method. I only say that it is difficult to carry out.

(Continued in July Issue).

PEDiatrics OWNERS

Acting in accordance with the recent law passed by Congress demanding that the names of owners and editors of all publications be printed in the May issues, we give herewith a complete list of the stockholders of the Pediatric Publishing Co. W. E. Fitch, President and Treasurer. A. H. Parr, Sec'ry. M. C. Fitch, Editor William Edward Fitch, M.D., Business Manager, A. H. Parr. Business and Editorial Office 355 West 145th St., New York City. Publication office, Elmira, New York.
RETROSPECT OF CURRENT PEDIATRIC LITERATURE.

Diseases of the Alimentary System.

Under the Charge of

JAMES WARREN VAN DERSLICE, M. D.
Assistant Professor of Pediatrics, Rush Medical College, Chicago, Ill.


The method of cure of four cases is described. It consists in the main of ascertaining the psychic train of happenings which may be postulated as most important aetiological agent of psychasthenia. In no case was there revealed, however, the physical sexual basis which Freud has so emphasized. Readjustment is simple when the fault has been revealed.

In children great complexity is not to be looked for; hence little time is required as compared with psychoanalysis of some adults. Thus two children 8-11 were seen only once each, a boy of 13 four times, a boy, a stammerer, 6 times. In only the first interview in each case were over thirty minutes required in the elder boy. The cases are preceded by a short description of psychasthenia as remarked by Janet, and they are followed by distinctions between Janet's syndrome and other neurotic states.

Enuresis and Chronic Digestive Disturbances.—Dr. Frank Vander Bogert of Schenectady in a paper read before the N. Y. State Medical Society Medical Record said that it was no doubt true that involuntary passage of urine was due either to increased irritability of the bladder or to a diminished tone of the sphincter, influenced by increased excitability of the lumbar center or interference with normal brain control. It was to the underlying cause of this excitability that he wished to direct their attention. Reflex irritation was of importance in the production of enuresis since not infrequently cures followed the removal of these sources of irritation. The same local conditions, however, occurred with even more frequency in children who were not bed-wetters and the frequent failures following treatment directed toward these lesions made one exceedingly skeptical as to their very etiological importance. According to the opinion of Leonard Williams, adenoids and enuresis were associated only because they were due to an underlying cause which he considered to be thyroid insufficiency. The writer said that in his personal experience thyroid had failed more frequently than it had succeeded and a search of the literature had failed to reveal any startling results from its use. If hypertrophied tonsils were considered as a part of a general catarrh of the intestinal tract, the relief afforded by their removal might fairly be considered to be due to the effect upon the gastro-intestinal catarrh and the subsequent improvement in the general health. The instances in which changes in the urine were responsible for the production of enuresis were so rare that this factor might be excluded in considering the etiology of the condition. So many functional and nervous disorders of childhood had been found to be dependent upon chronic digestive disturbances that the question had arisen in the author's mind as to whether urinary incontinence might not be traced to the same source as an underlying cause. With this object in view he had studied the ristories and symptomatology of fifty children, who were the subjects of incontinence. The dietetic histories invariably gave ample
reason for suspecting the alimentary tract. Practically without exception gross errors in feeding were noted, and often dated from early infancy. Prolonged nursing certainly predisposed to poor development and consequently to digestive disturbances in later childhood; and the more frequent dietetic errors seemed to be in the direction of sweets and starches. A few were possibly excessive milk drinkers. Possibly it would be more fair to include only those cases in which a large amount of indican was present in the urine and justified the diagnosis of a toxemia of this nature. Meat excesses were not so frequent. Irregular feeding between meals apparently played a most important part. Practically all the patients showed symptoms common to gastroenteric disturbances. In discussing the association of enuresis and rheumatism in children, till said that he had observed that rheumatism occurred sufficiently frequently in children with enuresis to make him watchful for it. He also said that the rheumatic child was apt to be a nervous child. It seemed just to assume that both rheumatism and the nervousness were manifestations of an intestinal toxemia. Other arguments in favor of the intestinal tract as the seat of the underlying cause of enuresis were the frequent occurrence of enuresis after acute catarrhal diseases and the relapses noted during acute digestive derangements. Writers of textbooks had given comparatively little attention to the part played by the digestive tract in causing enuresis and of the possibilities of treatment directed toward the improvement of the digestive process. The dietetic treatment advised had apparently been with the object of changing the composition of the urine rather than of increasing general muscular and nerve tone, and of preventing toxemia. The improvement of enuresis during warm weather argued in favor of the catarrhal condition as a causative factor. Reflex irritation arising from the fecal masses of chronic constipation or parasites might be factors in the production of incontinence as they were also factors in the causation of intestinal catarrh. If they accepted this theory as to the causation of enuresis, treatment must be directed to the gastrointestinal condition. The dietetic treatment consisted in a definite number of meals given at regular intervals sufficiently long to insure complete digestion and the establishment of an appetite, absolute abstinence from food during the intervals, a mixed diet containing vegetables to stimulate peristalsis, and to secure regularity of the bowels. The diet should be based on the history of the particular excess and upon a study of bowel movements in order to determine what particular food stuffs were at fault. Mastication should be thorough and good hygiene should be maintained. Medical treatment was practically limited to the use of laxatives temporarily and to intestinal antiseptics.

The Value of Massage in the Treatment of Various Disorders of Children.—John Phillips N. Y. Medical Journal calls attention to the value of massage in the treatment of malnutrition, rickets, and various other disorders of children, a method which has been largely neglected, but which yields better results in the majority of instances than in the adult. Patience and skill should be possessed by the operator, who should also have had considerable experience in the nursing care of children. Massage mechanically excites the vessels to action, quickening the circulation and emptying the lymph vessels. The nourishment of the muscle cells is improved by forcing out the waste products and keeping them bathed in a constantly renewed stream of arterial blood. The rate of the heart beat and respiration are slightly increased, and all the bodily functions are stimulated. The acceptability of this treatment to the children depends largely upon the personality of the masseuse, but after the first treatment the manipulation is apparently a pleasure to the child. The sitting should not be longer than twenty or thirty minutes, given daily during the first two weeks, and then three times a week. The best results are noticed in cases of malnutrition, with anorexia, weak, flabby muscles, and distinct pallor, and is
illustrated by a case reported by the writer. Excellent results are obtained also in rickets, where we have flabby muscles, sluggish circulation, and emaciated extremities. Because of this weakened condition the child takes no exercise. Massage replaces the latter effectively. The writer has seen excellent results from massage in many deformities, such as bowing of the legs. The paralyzed muscles of the later stages of acute poliomyelitis and the spastic contractures in cases of poliencephalitis or upper neuron destruction are markedly benefited by massage. In the constipation of children and in nervous children we may expect much from massage. In the latter cases, rest in bed, a carefully supervised diet, and massage cause great improvement. In cardiac lesions and the sequelae of acute rheumatism, rest in bed is imperative for weeks or months. Massage, with first passive and then resisted movements, is advised after the febrile period.

The Value of Discipline in the Care of the Sick Child.—Dr. T. Wood Clarke of Utica read this paper. After pointing out that upon the control of naughtiness depended the success or failure of one’s efforts toward a diagnosis and cure in the sick child, and calling attention to the fact that too frequently when there was a prospect of a long illness the endeavor was made to make the little one as happy as possible by endeavoring to gratify every wish, which was a very wrong course, he described a method he had used in suppressing howling which consisted in placing the palm of the hand over the child’s mouth and nose every time he began to scream. The writer concluded that the lack of discipline might be responsible for actual illness and that whatever method of disciplining was adopted, and to whatever extent circumstances made it possible in the individual families to carry out any measures, one should always remember three facts: A healthy child needed discipline, an ill child needed it more, and a nervous, spoiled one needed it most of all. By being strict with a child one increased his chances of recovery from an acute illness, made the household more habitable, the child far happier, and, most important of all, one destroyed the cocoons which if allowed to develop would, in later years, hatch out into the devastating blights of neurasthenia, hysteria, and even insanity.

The Functions of the Pineal Gland, with Report of Feeding Experiments.—Preliminary researches on the functions of the pineal gland have been made by Charles L. Dane and William N. Berkeley, pub., which seem to prove that this gland is the vestium of a special sense organ of vision in invertebrates and certain low vertebrates, while in man it has practically lost all the structural characters of a sense organ and has those of a glandular body undergoing some involution at about the seventh year. The writers believe that in the early period of life it influences bodily nutrition, including the development of the genital organs, the deposit of subcutaneous fat, general growth, and mental progress. Extracts of the pineal gland of bullocks, when injected into the veins of dogs, do not affect the blood pressure. The same extracts when fed to babies cause an increase of metabolic activity, as shown by an increase in nitrogen elimination by the urine. A case of tumor of the pineal gland reported by the writers would seem to show that in adult life entire destruction of the gland does not affect metabolism. Feeding experiments with the use of bullock’s pineals, perfectly fresh and rubbed up with milk sugar till extinuished, have been made by H. H. Goddard and W. S. Cornell in the cases of about fifty children, divided into twenty-four groups. They found that in certain cases of retarded development in children pineal gland was a remedy of value. Their explanation of its action, although entirely hypothetical and on account of the minute amount of it in a normal individual, is that the secretion of the gland acts as a ferment, or catalytic, facilitatate the exchange of nutrient material in the brain cells. Where total idiocy and gross physical defect presented, the gland was
without effect; in proportion as the patient is less characterized by physical stigmata, the greater benefit is reaped from pineal medication.

**Rigidity of the Arteries in Childhood.—**W. Rittenhouse (Wein. Klin. Woch., June 13, 1912, p 920).—Hamburger has lately shown that appreciable rigidity of the radial and temporal arteries is not uncommon in childhood. He found this condition rare under the age of 6, but frequently from that age till, at puberty, it is fairly common. This phenomenon is probably due to an increase in the muscular tone of the arteries, and it is frequently associated with nervous and vasomotor symptoms. The subjects of arterial rigidity are often troubled by such symptoms as palpitation, pain or a sense of oppression in the heart, which may be severe enough to be called vasomotor angina pectoris. Headaches, attacks of fainting, coldness of the hands and feet, and so-called "school anaemia" are also common accompaniments. All these symptoms are traceable to unstable innervation of the vascular system in certain areas.

The writer has examined 250 children between the ages 2 and 14 to ascertain the frequency with which rigidity of the arteries occurs. Only afebrile children with no serious illness were examined. Children one year old or less were not included, for rigidity of the arteries at this age is invariably associated with cachexia, or malnutrition. Four degrees of rigidity were distinguished, ranging from just perceptible to pipe-stem-like rigidity. Normally, only the movements of the arteries, not the arteries themselves, can be felt. In several cases the blood pressure was also measured by Hertz's apparatus to ascertain whether a relation existed between the blood pressure and the rigidity. Often a high blood pressure coincided with a high degree of arterial rigidity, but the exceptions were so numerous that no relation between the two can be assumed. None of 29 children at the age of 2 showed any rigidity of the arteries. Rigidity of the third degree was not observed below the age of 7, and rigidity of the fourth or greatest degree was not found below the age of 10. It is a curious fact that while rigidity of the temporal arteries was commonest under the age of 6, the radial arteries were more often affected from the age of 7 onwards. Below the age of 7, rigidity of the arteries was exceedingly rare, but it was found in 50 per cent. of the 79 children between the ages 7 and 10, and at the age of puberty it was found in 80 per cent. of the 66 children examined. All the children in whom a high degree of arterial rigidity was detected, exhibited symptoms which, with one exception, were nervous. That psychic influences may cause rigidity of the arteries is shown by the fact that it frequently passes off during the examination of the child. Such transitory rigidity was frequently observed to last only a few minutes in the temporal arteries of 2-year-old children. Hamburger has also shown that the degree of arterial rigidity varies frequently in the same child.

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**Infant Feeding in Health and Disease**

**Under the Charge of**

MAURICE OLIVER MACID, M. D.

Adjunct Pediatric Beth David Hospital, New York City; Assistant Visiting Physician O. P. D. Pediatrics, Cornell University Medical College;

Formerly Physician in Charge of Infants' Milk Depot of the New York Milk Committee, etc., etc.

The Use and Abuse of Sugar in the Diet of Children.—Dr. Elias H. Bartley of Brooklyn presented this paper before the N. Y. State Medical Society Medical Record. He said that although sugars were among the most valuable articles of human diet, yielding their
heat and energy on the least energy of the organs of digestion and assimilation, yet this very characteristic made them harmful if taken in large quantities. Twenty years ago he had called attention to the clinical evidence of the harmful and far-reaching effects of the excessive use of sugar upon the digestive organs, the mucous membrane, and the general health of growing children. The many years of observation since that time had only served to strengthen the convictions expressed at that time. The injurious effects to which he referred were, irritation of the gastric mucosa, gastric catarrh, interference with the digestion and absorption of fats and proteins, the production of excessive fermentation with the formation of irritating organic acids, attacks of so-called "biliary vomiting," acid intoxication, anemia, and general malnutrition. He attributed these results chiefly to the fermentative changes, especially of the hexoses as invert sugar, and of glucose taken as such. He now believed that sugars when taken into the empty stomach acted as direct irritant organic acids. Sugar incapacity soon developed in certain older children as well as in infants. Invert sugar and glucose were more injurious than cane malt or sugar. Cane sugar was partially inverted or converted into glucose and levulose by heating with organic acids. The fruit jellies, jams, etc., contained sugar that was partially inverted. Modern confectionery contained from 10 to 25 per cent. of glucose or corn sugar, made from starch by boiling with sulphuric acid. The early symptoms from sugar eating might begin a half hour after eating and seemed to be due to the local disturbance and not to a disturbed metabolism. There were six ways in which excessive sugar ingestion could be harmful: (1) by direct local irritation of the gastric mucous membrane; (2) by the production of excess of acids; (3) by interfering with the digestion and absorption of fats, because of the excess of solids in the bowel and consequent malnutrition and anemia; (4) the disturbance of carbohydrate metabolism; (5) the production of a condition of a form of acid intoxication, differing however from the better known acidosis of diabetes, cyclic vomiting, etc.; (6) by the remote effects in the nervous system and on the mucous membranes. The attention of the public should be called to the harmful effects of the excessive use in sweets in such a way as to check it.

Some Observations on Infant Feeding.—Dr. Harry Rulison of Albany presented this paper before the N. Y. State Medical Society Medical Record. He stated that the normal healthy child had a tolerance for a wide variety of foods. In the feeding of the normal healthy child complicated formulae and complex methods were not necessary. What was necessary was a knowledge of the nutritional requirements of the child to be fed and a correct interpretation of the various signs of nutritional disturbance, together with the ability to refer them to the particular element in the food that was causing the disturbance. The failure to make a correct interpretation was the cause of most failures in infant feeding. The food should have sufficient caloric value to meet the needs of the child and should be well balanced in respect to its various constituents. It need not approximate breast milk nor even resemble it. Both the percentage and the caloric methods had their value but should not permit either to hamper him in the treatment of the individual case. The problem as to whether it was better to feed by age or by weight was still with them. He was in favor of large quantities at longer intervals. One feeding in four hours was frequent enough. There should be plenty of water between feedings. The early elimination of night feeding was desirable but not always possible. It was now the consensus of opinion that the proteins gave little trouble, even if they formed 8 or 10 per cent. of the total amount of food. He usually began by feeding from 1½ to 2 per cent. protein and increased the quantity to 3 or 4 per cent. by the end of the first year. Protein resulted in no harm provided a certain amount of whey salts were present. He took issue with Cowie and
Lyon on the statement that little or no protein was split up in the stomach on account of the normal absence of hydrochloric acid. He had found that the protein in the stomach was completely dissolved during incubation when no hydrochloric acid was present. It had been discovered that the fats were split up by the pancreatic lipase to a greater extent than was formerly believed. While fat would seem easy of digestion theoretically it was a different thing in practice. There were many children who could not metabolize even a small quantity. The average requirement was 2 per cent. or less. Of the carbohydrates maltose was the most easily digested and assimilated and the least liable to fermentation, but it had not given him any better results than cane sugar. The use of lactose was based on theoretical considerations rather than on direct results. Starch digestion in infancy was not as difficult as was formerly believed. Many edemas were supposed to be dependent upon sodium chloride; some occurred without renal or cardiac lesions and were dependent upon faulty metabolism; these a salt free diet would sometimes clear up over night. Proprietary foods had their place but should not be used “hit or miss.” The directions accompanying them should be disregarded. Whey feeding should be condemned in dyspepsia, intestinal intoxication, atrophy, and spasmophilia. The administration of lime water was to be avoided as a routine measure as it delayed digestion.

**Infant Feeding With Undiluted Cow’s Milk.**—Dr. William B. Hanbidge of Ogdensburg read this paper before the N. Y. State Medical Society, Medical Record. He said that twenty years ago his attention had been called to the advantages of whole milk by a sister who had charge of a number of babies in an institution. In November, 1912, he had reported a series of 39 cases collected from various sources, in 35 of which the results had been very satisfactory. He now had a more recent series of 50 cases, 15 of which were from his own practice. Of ten of these children who were healthy there was one that could not take whole milk. Dr. Hanbidge related a number of cases sent to him by other physicians in which the babies were fed successfully with whole milk after other methods had failed. He believed that children on a concentrated food like whole milk should be fed only when hungry. If they slept and got a little behind in their nourishment, they could easily make it up. It was nature’s way to feed both children and young animals only when they were hungry. In feeding experiments the important thing was to arrive at the truth irrespective of theory. It was possible that in trying to obtain a food that chemically resembled mother’s milk they had been led astray. The process of digestion was too complicated for chemistry to be the final judge. They had learned that the stomach did not hold the dominant place in the processes of digestion that they formerly had thought it did. The muscles of the new-born babe were poorly developed and it was possible that in giving a highly diluted food dilatation and atrophy were caused which interfered with the proper emptying of the stomach. Possibly they were diluting the gastric juice so that the process of digestion was retarded. Might not the distention and muscle weakness in the bowels result in colic? Experiments had convinced him that from 1 1/2 to 2 ounces or possibly 2 1/2 ounces of whole milk for each pound of body weight provided sufficient nourishment for twenty-four hours. A popular work on pediatrics considered 32 ounces about the proper amount of modified milk for an infant eight weeks of age; the same child on whole milk would require only from one-half to two-thirds that amount.

**A Practical Study of Goat’s Milk in Infant Feeding as Compared with Cow’s Milk.**—Dr. DeWitt H. Sherman and Dr. Harry R. Lohnes of Buffalo presented this communication before N. Y. State Medical Society, Medical Record. Dr. Sherman said their object was to learn if possible, the reason why goat’s milk agreed better with some infants than cow’s milk. The babies were selected at random from the
inmates of St. Mary's Infant Asylum and Maternity Hospital of Buffalo. The goat's milk used averaged from 1 1/2 to 2 per cent. richer in fats than the cow's milk used in the institution. A series of experiments in which test meals were given and withdrawn one hour from the middle of the feeding showed that the digestion of the cow's milk was slower. The curds of the goat's milk were smaller and more flocculent, corresponding to the appearance in test tube digestion. Dr. Sherman presented a table showing the greater stimulating effect on the stomach of goat's milk over that of cow's milk, and the greater stimulating effect of both as compared with proprietary foods prepared without milk, and finally the greater stimulating effect of all three as compared with barley water. So far as absorption and gain in weight were concerned their statistics were indefinite because the babies being institution babies were apt to gain slowly, owing to an epidemic of streptococcus infection which had swept through the infants' ward at the time these experiments were in progress, and because a certain number who were doing well were removed from the institution before the experiments were finished. There were 16 cases tested, on similar formulae. Of these 12 gained more rapidly on cow's milk and four on goat's milk. The gain in the former group was in the ratio of three to one and in the latter group in the ratio of nine to one. The more thorough emulsification of the fat in goat's milk prevented the separation of cream upon standing as occurred in cow's milk. This fact might be an element in reducing the tendency to regurgitation in goat's milk as compared with cow's milk, and further might be a very important factor in lessening the liability to sour vomiting due to fatty acid fermentation, so common in high fat mixtures. On account of the small size of the fat globules, there was probably present in the goat's milk a smaller amount of the lower or volatile acids. The babies as a whole tolerated equally well similar amounts of goat's or cow's milk with the same diluents, but as the goat's milk contained higher fat percentage than the cow's milk, the children actually received more fat per feeding and hence a higher calorie value. It was consequently strange that more babies gained on cow's milk than on goat's milk modification. The stools of the infants on goat's milk were smaller and of a more vivid yellow color. The age did not influence materially the ratio of gain on goat's milk versus cow's milk, but the younger the baby the more evidence pointed toward a greater gain on goat's milk. The only conclusions that could be drawn were that in the child whose resistance was below par, goat's milk agreed better because it was less stimulating, because it contained fewer volatile acids, and because of its more flocculent curds which made it more easy of absorption by some children.

Infant Feeding from a New Standpoint.—Dr. Godfrey R. Pisek of New York presented this paper before N. Y. State Medical Society, Medical Record. He said that the history of infant feeding embraced many methods which had succeeded one another in popularity. They had had raw milk, pasteurized milk, whole milk, the percentage method, the caloric method, etc. They pasteurized the milk to eliminate bacteria and then added millions of bacteria in order to aid digestion. When one method was in vogue and every one followed that the situation was not so difficult, but when all of these methods were the fashion at one time matters became very complicated. Specialists denounced proprietary foods and then prescribed those same foods to their patients. A case had recently been reported to the writer of a physician who had the care of an infant whose nutrition was not progressing properly. The mother wanted to feed the infant condensed milk but the attending physician objected and adduced evidence for his stand from a textbook. The mother asked a consultation with the author of the textbook and that authority, much to the chagrin of the attending physician, prescribed condensed milk. What wonder was it with pediatricians preaching one thing and practising
another that the laymen were bewildered and the general practitioner was in a hopeless predicament. Scientific feeding of infants was bound to fall into disrepute unless pediatricians restored harmony in their own ranks. Unless they got together and agreed upon fundamentals they must not be surprised to see the manufacturers of proprietary foods flood the market with literature which would carry weight with the lay public in the absence of any authority upon which they could rely. Students went from one clinic to another and heard their teachers make contradictory statements and the question arose "How was the general practitioner to know what to do when authorities flatly contradicted one another in what were supposed to be the fundamentals of infant feeding?" Scientific infant feeding consisted in doing what was right at the time for the particular infant. It was impossible to state in a book what was to be done under all conditions. Each procedure had its place and in that place was scientific feeding; out of its place it was unscientific. A statement made years ago might have been correct at that time and yet be incorrect today. The average student in an agricultural college or domestic science school had a better knowledge of the fundamentals of nutrition than the average medical practitioner. Fundamentals of physics, chemistry, bacteriology, and surgery were uniformly taught. In infant feeding it was different. Infant feeding must be approached from a new standpoint and they would do this when they concentrated their teaching on the broad general principles of the science of nutrition of which infant feeding was only a branch.

Social Pediatrics.—Dr. Ira S. Wile of New York read this paper before the N. Y. State Medical Society, Medical Record, in which he called attention to the weak spots in the present method of teaching pediatrics. He stated that the purpose of the medical school was to supply the community with men who were trained in caring for the public health. If they failed to teach their students the methods of preserving health and life they fell short of their ideal purpose. The position of the physician had altered in the community in that he was no longer regarded merely as an individual capable of curing individual cases of disease, but as a specially gifted man, capable of guiding the public in matters pertaining to health. The problems of infancy and childhood should not be given a subordinate place in the category of medical problems. When one considered that one of every five in the population was a child whose welfare might be considered as belonging to the department of the pediatrician, that practically one out of every three deaths within the registration area fell upon a child under fourteen years of age, and that practically one-fourth of the total mortality in the registration area occurred under the age of 2.68 years, the immense importance of the field of pediatrics was accentuated. Recognizing the social and economic forces which interfered with medical progress, it was important to train the medical student so that he would appreciate the difficulties with which he would have to contend. It was impossible to give a complete course in sociology to the medical student with the present distribution of time, but a physician with a knowledge of sociology was far better prepared to cope with social problems in the manner that the future generations would demand. Physicians were urging more careful instruction in hygiene in the elementary schools, and yet the practical social aspects of hygiene were neglected in the great majority of medical colleges in the United States. The teaching of pediatrics must be strengthened. Medical colleges should have specially trained teachers for this subject. The value of midwives, the importance of health registration, the value of milk depots, and infant consultations were certainly pediatric themes. The relation of day nurseries, boarding-out and convalescent homes, and babies' hospitals were intimately bound up in the mortality rate. The value of school nurses, medical inspectors, school clinics, child labor laws, and district nursing were
not foreign material in a broad-visioned course in pediatrics. The necessity of open air schools, the problem of the prevention of blindness, the detection and care of defectives formed topics in social pediatrics which were at present holding the attention of welfare workers, while the physicians were not fully acquainted with their relation to pediatric medicine. Students were not made to appreciate the full social and hygienic value of breast milk. The fundamental causes of infant mortality were poverty and ignorance. The physician might not be able to relieve the poverty, but he could correct the ignorance and discipline its stepchild, neglect. Pediatric medicine should be taught in relation to community life. This was the only way in which the preventive phases could be presented to the student in their true relative importance. To adequately teach the conservation and protection of infancy and childhood, medical schools must be socialized in spirit. If pediatricians were to be leaders in the preventive medical work that was the present ideal of medicine, the pediatric teachers must be aroused to their responsibility.

Certain Neglected Aspects of the Problem of Infant Mortality.—Dr. Philip Van Ingen of New York said before the N. Y. State Medical Society, Medical Record, that efforts toward the reduction of infant mortality had been chiefly directed toward deaths due to diarrheal diseases, which constituted from 20 to 30 per cent. of the total mortality during the first year of life. The very marked reduction in the death rate among babies in the Borough of Manhattan, New York, had been chiefly among this group of cases. From 25 to 40 per cent. of the deaths under one year were due to congenital debility, prematurity, etc. The figures for these deaths had not changed to any extent during the past seven years. An analysis of the deaths under one week and under one month showed a practically constant infant mortality rate for the group under one week, and a very small reduction in the rate for under one month, while from one month to one year, the reduction in 1911 was nearly 14 per cent., and in 1912 over 21 per cent., from the average for 1906-10. The problem presented by this portion of infant mortality was an all-the-year-round one, as the figures showed that a greater proportion of the deaths occurred during the winter months than during the hot months, although the variation was very slight as compared with from one month to one year. The New York Milk Committee had conducted a campaign of prenatal instruction and hygiene among the tenement mothers in the worst district of Manhattan. It was a campaign of prevention through instruction during pregnancy, carried on by visiting nurses in the homes. The results of the first 1,375 cases show two deaths among the mothers, one from toxemia of pregnancy, one from acute hemorrhage due to placenta previa; 95.3 per cent. gave birth to living babies at term; 1.2 per cent. to premature living babies; and 3.5 per cent. to stillborn babies. Of the babies born alive 97.3 per cent. were alive at the end of one month. In the Borough of Manhattan, as a whole, the death rate under one month per thousand births during the same period was 40.2 per cent. as against 27.5 per cent. for the supervised cases. The still birth rate was 34.3 per cent. as against 47.9 per cent. for the Borough as a whole. At the end of the first month 92.2 per cent. of the babies were being nursed entirely, 4.1 per cent. partially, and only 3.7 per cent. were being artificially fed entirely.

Surgical Diseases of Childhood.

WILLIAM A. EDWARDS, M. D.

Professor of Pediatrics, University of California, Los Angeles, Cal.

A Case of Polymyositis with Multiple Lime Deposits in a Boy Five Years of Age.—Dr. Sara Welt-Karkels presented this patient before New York Academy of Medicine, Med Record. His family history was
negative, giving no indication of lues or of any hereditary nervous disposition, and no one in the family had suffered from a similar disease. The parents had been married eight years and had one other child, who was in good health. The patient was born at full term and there was nothing abnormal in connection with his birth or early childhood until his present illness, with the exception of ophthalmia neonatorum from which he recovered after a few weeks. In April, 1911, he became indisposed, lost his appetite, and suffered difficulty in walking. He could not go upstairs and walked on his toes. About three weeks after the onset of the prodromes, an exanthema appeared which was taken to be scarlatin and which lasted about eight days. The face became edematous, mainly in the palpebral region. He could not move his limbs, as both active and passive motion were very painful, especially in the joints of the back. The senorium remained clear during his entire illness. He was entirely helpless for two weeks and confined to his bed for eight weeks. The eruption was followed by a distinct desquamation; there was, however, no exudate on the tonsils and the urine was free from albumin. He did not make a good recovery and his condition was variously diagnosed by different physicians as encephalitis, spastic paralysis, muscular dystrophy, poliomyelitis anterium, acute muscular rheumatism, toxic arthritis, and spondylitis. After treatment by a masseur the boy began to improve and the swelling in the extremities receded. During this period the boy suffered repeatedly with an itching eruption like urticaria. The patient improved for a time but in January, 1912, he again complained of pain and the former condition recurred. In September, 1912, he was brought to the children's department of Mount Sinai Hospital. At present he was poorly nourished and there was slight elevation of the temperature. The face appeared bloated and tense and there was slight edema of the cheeks and eyelids. The pupils were equal and reacted to light; the fundi were normal. The buccal and pharyngeal mucosa were reddened; the anterior and posterior cervical gland considerably enlarged; the axillary, cubital, and inguinal glands slightly enlarged. The viscera of the abdomen and thorax were normal; the spleen was somewhat enlarged, its anterior margin being palpable. There was a urticaria-like eruption on the skin of the trunk and lower extremities. Similar eruptions repeatedly appeared and disappeared. The skeletal muscles were thin and flabby, especially on the left arm. There was motion in all joints except those of the hands, mainly the left hand. The motion of the ankle joint was slightly limited. The superficial and deep reflexes were normal, but the tendon reflexes of both upper extremities were slightly diminished. There were no facial phenomena. Electrical irritability was normal, as were also the sphincters. The left hand was considerably swollen, painful on pressure, edematous, and purplish in color. There was no pitting. The infiltration extended beyond the phalanx of the middle finger. A similar but less marked condition involved the right hand. There were three indurations in the right gluteal region which were not painful on pressure and a somewhat larger induration in the left gluteal region.

Transfusion for Persistent Hemorrhage Following Sepsis.—Dr. A. L. Soresi reported this case, Med. Record. The child was transfused last November, at which time there was running from both ears and the fingers and eyelids were purulent. The gums were soft and bleeding, and the child was found to be suffering from empyema. On account of the poor condition of the patient and a persistent cough general anesthetics could not be administered. An incision was made under local anesthesia (cocaine, 1 to 500) and pus was evacuated from the left pleural cavity. Forty-eight hours afterward the wound was still bleeding. The bleeding from the gums had increased and the child was in a desperate condition. The hemoglobin had gone down to 25 per cent. Transfusion was advised and accepted. A maternal cousin was the donor. The external jugular vein was used, as could
be seen by the scar. The transfusion was stopped after six minutes when the hemoglobin had gone up to 70 per cent. The child began to improve, the bleeding stopped, and recovery followed. It was Dr. Soresi's opinion that the child's life had been saved by the prompt employment of direct transfusion.

Remarks on the Etiology and Pathology of Hemorrhagic Disease in the Newborn.—Dr. Oscar M. Schloss read this paper. (Medical Record). He recalled that among the earlier writers hemophilia was considered a frequent cause of hemorrhage in the newborn, but that more recent studies had shown that most cases had no relation to true hemophilia. However, in a small group of cases, hemophilia unquestionably played an important part. These were the cases in which the: was a distinct family history and in which if recovery took place the individual remained a bleeder for life. Many cases of hemorrhage in the newborn were no doubt due to bacterial infection. This view was supported both by clinical evidence and by post-mortem investigation. In a number of epidemics of hemorrhagic disease in institutions there seemed to be a direct relation between the number of cases of puerperal infection and of hemorrhage in the newborn. Finkelstein divided the cases of hemorrhage in the newborn due to bacterial infection into two groups. In the first group the pyogenic organisms were considered the causative agent. In some of these cases there was direct evidence of pus formation in connection with localized suppuration, while in others the pyogenic organism, whether alone or in connection with saprophytes, such as the Bacillus pyocyanus or some member of the protean group, was the supposed cause of the hemorrhage. In the second group of cases special hemorrhage-producing organisms were considered the causative agent. In most instances these organisms caused hemorrhagic forms of septicemia in animals. Bacteriological studies had yielded very inconstant results, a great number of different organisms having been isolated from the bodies of infants who had had hemorrhage during life. As most of these organisms were obtained on post-mortem examination their presence might be due to post-mortem invasion. Syphilis seemed to be an important factor in the etiology of hemorrhage in the newborn and evidence seemed to indicate that congenital syphilis caused definite vascular changes and was frequently associated with hemorrhage and that in many cases it was the only determinable factor. In addition to the general diseases there were certain local causes of hemorrhage in the newborn, such as gastric or duodenal ulcer. Chloroform poisoning had been suggested by some writers as a cause of hemorrhage in the newborn, but investigators had differed on this subject, and the final solution of the question must depend upon further study and experiment. It seemed rational to believe that the ultimate cause of bleeding was some pathological condition of the blood vessel or some defect of blood coagulation. There was no constant pathological condition of the blood in hemorrhage of the newborn. The fact that these hemorrhages were apparently due to different pathological conditions, together with the fact that investigation of the blood failed to show the presence of any uniform change forced the conclusion that the hemorrhage was merely a symptom to which there existed a predisposition during the first ten days of life. On the other hand, there was a uniform pathological condition common to all cases which was at present unknown. It was desirable that tuba vitam blood cultures should be made in these cases of hemorrhage in the newborn, for it was only by this means that the true role of bacterial infection could be determined.

Hemorrhagic Conditions in Children: Etiology, Pathology and Treatment.—Dr. A. L. Soresi presented this communication. He said that all hemorrhagic diseases of the newborn should be grouped together under name of hemorrhagic diathesis, because their pathology and etiology was little known and they seemed to be merely symptoms
of different pathological conditions rather than distinct pathological entities. It seemed that the conditions found in the blood and blood vessels were not primary but the result of faulty general metabolism. Besides the hemorrhage, which could be called spontaneous, the blood either did not coagulate immediately as in normal conditions or did not coagulate at all. This distinguished hemorrhagic condition from hemorrhage where the blood had a tendency to coagulate which was more marked the more severe the hemorrhage was. Of all the agents which had been thought to be the cause of hemorrhagic disease, such as syphilis, rickets, anemia, infectious diseases, faulty intestinal and hepatic function, improper food etc., any one might be the known cause in a single case, but none of them individually, nor all together could explain the majority of cases of hemorrhagic disease. The theory that hemorrhagic disease depended on an abnormality of the capillaries had a certain anatomical basis, although there was no evidence to prove it. This did not explain the late or wanting coagulability of the blood. Whatever were the elements which retarded or prevented coagulation, it was evident that they were the result of faulty metabolism. The fact that hemorrhagic diseases were more prevalent in children seemed to show that the different collaboration between themselves and the pathology of these diseases would be clearer if they were studied together with some conditions disturbing general metabolism of adults, such as pernicious anemia, diseases of the liver, infectious diseases, chloroform poisoning, etc., in which there was a tendency to spontaneous hemorrhage and lack of coagulability of the blood. Post-mortem findings showed only a lack of coagulability of the blood and the diagnosis in these cases was easy. Prophylaxis could do some good in hemophilia and scurbutus. Salts of calcium, and gelatin had been found of very limited value. In scurbutus and purpura change of diet and fruit juices had been found very valuable. The best and really the only effectual treatment had been what was called the physiological treatment, that was, the treatment which supplied the principles in the blood which favored coagulation and which were lacking in the patient. This physiological treatment must be considered under two different view points: First, when the patient was seen early and the only indication was to stop the bleeding, and Second, when the bleeding was very persistent and the patient had lost a great amount of blood. In the first instance horse serum and when available human serum should be employed as soon as possible. In the second instance transfusion should be resorted to as soon as possible. The injection of serum introduced thrombin into the system, which would establish the normal balance of antithrombin and thrombin or porthrombin, so that the circulating blood would be able to react normally. In some cases of hemophilia further bleeding had been stopped by applying a piece of gauze soaked with blood obtained from another person. It was evident that the injection of serum could only stop further bleeding but could not supply the morphological elements of the blood lost through hemorrhage. As the elements favoring coagulation were at present unknown, but were all present in normal blood, it was logical to conclude that the introduction of full normal blood into the patient’s system was the most rational treatment. Only one consideration could favor the use of defibrinated blood and that was if it could be proved that in defibrinating the blood new elements favoring coagulation were formed or the ones existing in the blood made more active. The strongest argument in favor of direct transfusion was that many cases had been benefited and cured by its use which had received previously all other treatments, while no case where transfusion had failed had been cured by another means. This assertion was based on an experience with 31 cases of hemorrhagic disease in the newborn, of which 28 were cured and 3 died; with 23 cases of hemophilia, of which 21 were cured and 2 died; with 6 cases of scurbutus, of which 3 were cured and 3 died; with 9 cases of purpura, of which 8 died and only 1 was cured. It could be said that in the direct
transfusion of blood when properly performed surgeons had a specific remedy for hemorrhagic diseases with the exception of purpura. The idea that direct transfusion was difficult of execution had prevented this method from becoming generally applied. Transfusion should not be resorted to too late and its technique must be perfect. To avoid coagulation the greatest care must be taken not to injure the intima of the blood vessels. The author’s instrument was intended to prevent this. It was composed of two little tubes crowned at one end with four hooks, held together by a little bar and screw. The blood vessels were carefully isolated, one of the tubes was passed under the blood vessel of the recipient and cuffed over the hooks; the same thing was done with the blood vessel of the donor. Both blood vessels were cut close to the edge of the cannula and put together by inserting the bar of one-half of the instrument into the corresponding hole of the other. The next important point was the selection of the blood vessels to be anastomosed. For the recipient the best was the external jugular vein; for the donor a vein of the forearm should be selected, as there was absolutely no reason for sacrificing the radical artery. Many failures were due to the fact that surgeons had not mastered their technique; therefore, no one should attempt transfusion who had not mastered the technique on living animals.

Infectious Diseases.

Under the Charge of
ST. GEO. T. GRINNAN, M. D.

Chief of Clinic in Practice of Medicine, Medical College of Virginia; Visiting PediatriSt., Memorial Hospital, Richmond, Va.

Unusual Complications of Infectious Diseases in Childhood.—Dr. Arthur Stern (Archives of Pediatrics, Feb., 1913) reports some interesting complications occurring in mumps. One child, aged eight, having a mild case of mumps for five days, suddenly the temperature rose to 103 F and the child appeared very sick. She complained of severe pains in the upper abdomen and vomited every particle of food. The tenderness was very marked on deep pressure. There was no pain over the ovaries, but the pain was parallel to the pancreas. The condition lasted three days, when vomiting stopped gradually. Two weeks from the onset of the disease she seemed about well when she complained of double vision, saw two lights, two mothers and so on. This condition lasted two weeks and then the child was normal.

A brother of the above case developed mumps. After being mildly sick seven days he suddenly became dizzy and could not lift his head from the pillow. The heart beat very slow, 30 to 38 per minute, temperature 99.5. When he opened his eyes he complained of headache and dizziness. He vomited at intervals, developed rigidity of neck and nystagmus. The hearing in his right ear became poor. For four weeks he was very ill, pulse seldom above 40, became very emaciated and the slightest movement would make his head go around. Recovery was slow. The hearing did not improve. Dr. Stern calls attention to the recent textbook on diseases of children edited by Feer in Germany which devoted four pages to parotitis epidemica, and mentions a great many complications in the course of the disease. Feer mentions the abnormal pain and vomiting which one might be able to call a complication of acute pancreatitis. The deafness is called by acute serous labyrinthitis with exudation. The Medical Record, June, 1912, pointed out the importance of the complications in parotitis. In 1877 Schmack Pfeffer pointed out the close relation between mumps and pancreatitis. Freind in 1911 also reported mumps with complication resembling pancreatitis. H. Zade in 1912 reported a case of bradycardia exactly as in the case reported by Dr. Stern. Dr.
Stern also reports a complication of whooping-cough. The child referred to developed whooping-cough December 1st, 1911, January, 1912 pneumonia complicated the sickness. During the course of the pneumonia the child had a convulsion and when he became conscious he complained of terrible pain in his abdomen. He vomited continuously and screamed about his stomach. The abdomen was very rigid all over and sensitive to touch. The temperature by rectum was 104 F. During the next day an exudate appeared around the umbilicus, about the size of a child's head, which was very sensitive and could be easily mapped out. The temperature gradually disappeared. In about ten days the boy had a severe diarrhea of bad smelling stools which looked like matter. He then began to improve. The abdominal tumor began to disappear. From now on convalescence was rapid. Dr. Stern regards the trouble as a metastatic process caused by the pneumococcus, which formed an encapsulated abscess, finally perforating the bowel. The boy recovered.

The Treatment of Meningitis by Drainage of the Cisteria Magna.
—Dr. Irving S. Haynes (Archives of Pediatrics, Feb., 1913) discussed in a very able article a method of relieving intra-cranial pressure with a view to saving life in meningitis, by providing for the free and continuous escape of the excess of cerebrospinal fluid until the infection is overcome. The drainage must be applied early and must be one of choice and not one of last resort. Dr. Haynes believes that surgical relief must be given in all cases of septic meningitis. If the copper reducing agent from the cerebrospinal fluid is positive, but the actual germ is not detected at this examination the case must be operated on at once. If the diplococcus of Welchelbaum is detected the meningitis serum should be given a delay of not more than 24 hours, if there is no improvement then the operation should be done—a second injection of the serum may not be entirely harmless, its chances for relieving the disease diminishes with the lapse of time and most serious of all such delay renders futile any surgical effort.

The second fundamental principle is that cure can only come by drainage of the excess of cerebrospinal fluid to the surface.

The failure of the past is attributed to the fact that drainage has not been afforded early, freely or continuously.

Ventricular puncture cannot drain pus. It may not relieve pressure. It adds a positive danger of infection to the ventricles, cortex and meningitis.

Of the various plans of attack upon the spine for the injection of antiseptic solutions or drugs into the subdural space, they have failed to provide free and continuous escape for the infected cerebrospinal fluid.

Operations on the cranium have failed with few exceptions to obtain results. The brain is crowded against the skull, any drain introduced between these two structures is pressed upon by the former and speedily walled off by plastic lymph. The drains are soon isolated and fail to functionate. "The single exception to this intracranial condition and inevitable results is found at the space between the two poles of the cerebellum and between them and the medulla. This space is the cerebro medullary angle or hiatus. It is a part and a large one of the great sabarachnoid space known as the cisteria magna. It lies close beneath the occipital bone accessible to surgical attack.

Pathology shows that in this region the infected fluid first gathers and here the effects of inflammatory activity are most marked.

Dr. Haynes says that "the escape of the cerebrospinal fluid is both free and continuous because the drainage which leads from a natural cavity and there are no surfaces to crowd together about it as exists every where else over the brain surface. All evidence points
to the cisterna magna as the one logical place where removal of pyogenic cerebrospinal fluid should be practised.

The author points out the object of the operation as follows: 1. To open the cisterna magna, relieve intra-cranial pressure and restore the normal blood supply to the vital centers.

2. To accomplish this without danger of cerebellar hernia or corking up the foramen magnum by downward displacement of the brain stem.

3. To prevent shock and possible death of the patient from too sudden escape of the cerebrospinal fluid.

4. To afford inspection of the foramen of magendie and if it is closed, its reopening.

5. To forestall possible complications especially by orocephatus. Should orocephatus be present its relief and cure may be possible by this operation.

For steps of this operation see Dr. Haynes' article in which details are fully given; although all of the patients operated on by Dr. Haynes died, he does not regard that as a discredit to the operation. The method must be perfected. It must be realized that delay brings disaster. The end is certain in septic meningitis unless relief be afforded by free and continuous drainage of the excess of cerebrospinal fluid with its content of deadly bacteria and poisons.

Tuberculous Infection in Children.—Armt de Besche (Deutsch. Med. Woch., 1913, xxxix, 452) reports an interesting investigation to determine the percentage of tuberculous infection in children. Lymphatic tissue from the mesenteric, bronchial, and cervical glands of 134 children coming to autopsy was injected into guinea-pigs and rabbits, and the results studied and followed out. In 28 of these children tuberculosis was the cause of death. In 14 it was discovered, latent at autopsy. In 10 cases only "latent bacilli" were found in the lymphatic glands. Tuberculous infection was proved in 52 of the 134 children. The percentage of infection rose proportionately with the age period, from one to fifteen years. In the greater percentage of lymphatic tuberculosis the condition was found widespread and general throughout the body. In 45 of the positive cases the bacillus was found to be of the human type, proving that the greater majority of tuberculous children receive the infection from human beings. In 3 cases the bovine type of bacillus was isolated, and 1 case showed both the human and bovine type. This investigation was made in the city of Christiania, and apparently shows that from 6 to 8 per cent. of tuberculous infection in children comes from cows and the balance from human beings.

It is now fifty years since von Heine brought out his exhaustive monograph on infantile paralysis and for the first time clearly defined the disease as a separate entity. Since that time the disease has spread all over the world and the treatment has made striking progress especially as regards surgery of the paralysis itself. Yet it is remarkable that no orthopedist has as yet undertaken to review the really gratifying progress that has been made since von Heine's day.

The author, Dr. Vulpius of Heidelberg, has had unlimited opportunity to study every phase of the subject. Far more paralytics have passed through his hands during the past fifteen years than have been collected or recorded in any epidemic.

In the matter of treatment, orthopedic methods promise more and accomplish greater results, than anything heretofore offered. The author reasoning from this analogy thought it was time to bring out a work dealing exclusively with the orthopedic treatment of the sequelae of Infantile epidemic spinal paralysis. This work is the result of his labors, beginning with chapters dealing with the symptomatology, artiology and pathological anatomy of the disease; while these chapters are by no means complete yet they serve well as an introduction. The rest of the book is divided into two parts of which the first deals with the therapeutics in use at the present time; the second comprises a description of the paralysis of the various parts of the body and this orthopedic treatment which presents a well balanced picture of the state of the present knowledge of the subject.

The translator has done his work well, having scarcely left a trace of the German construction. The broad and scholarly spirit in which he has performed his task renders the work almost as interesting to the general practitioner as to the pediatrician and orthopedic surgeon, to all of whom the work should be a welcomed addition to medical literature. The work is recommended as a valuable contribution in a hitherto somewhat neglected field.

Lang's German-English Dictionary of terms used in medicine and the allied sciences. Second edition edited and revised by Milton K. Meyers, M.D. Neurologist to the Jewish Hospital Dispensary and to St. Agnes Hospital Dispensary Philadelphia etc. 500 pages, cloth, $5.00 net. P. Blakiston's Son & Co., 1012 Walnut Street Philadelphia, 1913.

This dictionary is intended to be a complete glossary of German medical words in common use; it also contains a large number of terms employed in the auxiliary science particularly chemistry, biology and pathology.

In respect to genders there are here and there apparent discrepancies arising from the absence in German of a deffrule for the genders of imported words, others assimilate the gender to that of the German equivalent for the word. The former would say die cervix, the latter der cervix.

In the revision of the present volume some 4,500 definitions are added to the 45,000 published in the last edition, these latter have undergone a most thorough revision. The 4,500 new definitions added include a number of definitions of diseases, symptoms, signs, reflexes, phenomena, and other topics, named after individual physicians and
investigators. Among these terms will be found most of those which are standard as well as many that are very recent; those that have become obsolete are omitted.

A simple form of German and English spelling is carried out much to the value of the work. The book will be welcomed as a useful aid in translation of the ever more important German medical literature. The publishers have shown their good judgment in book making, by printing the book on good paper from readable type and binding the volume in strong wearable buckram binding.


The reviewer has personally known the author for a decade and the appearance of this volume is very gratifying. Dr. Petty believes that drug habitues are, in most cases, the blameless victims of disease, who not only merit sympathy and consideration but are entitled to rational and skillful medical aid. With this idea in view, Dr. Petty has produced this volume which treats Narcotic Drug Addiction as a disease, a toxarnia, of drug auto and intestinal origin, the management and treatment of which belongs to the field of internal medicine and neurology.

The author holds that the primal principle, essential to the successful handling of this class of unfortunate is elimination. This method with its auxiliaries, is presented in great detail in this present work which furnishes a rational basis for the scientific medication and humane management of this type of suffering humanity.

Dr. Petty has made this work of great value to the general practitioner, who may be more or less concerned with collateral subjects than with the treatment of drug addiction; as well as by considering the treatment of acute ailments occurring in narcotic and alcoholic habitues; to the withdrawal of narcotics, of the prolonged use during acute ailments; to the management of infants born of drug-using mothers and the treatment of deliriumtremens, and in “sobering up” of the victims of acute alcoholism. The work covers a subject with which the general practitioner cannot be too familiar. We heartily commend the volume.


The organization, exhibition methods, and plan of financing the show are given in detail, together with a description of the various exhibits, fifty half-tone plates of the more important features that lent themselves to photographic illustration, and typographical reproductions of all reading matter appearing in the charts, tables and legends.

The exhibition was open nine days in Horticultural Hall, and was visited by 67,507 persons. During a single hour of one day 200 women with babies in arms entered the hall; on the same day, 1,200 mothers with babies in arms were admitted. Four subsidiary shows, each of four days' duration, were held in different sections of the city immediately following the main show, with a total attendance of 39,831, making a grand total of 107,338.

The table of contents indicates the general scope of the exhibition; the co-operating agencies—public and private—that took part; and the exhibits on special subjects such as infant feeding, care of the baby, patent medicines, hospitals and instruction.
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HORMONE THEORY

A Hormone is a chemical substance formed in one organ or part of the body and carried in the blood to another organ or part, which it stimulates to functional activity or secretion: the secretions of some or all of the ductless glands are regarded as hormones, so is secretin, so is carbon dioxide formed in muscle during contraction, which incites the respiratory center to increased activity.

The discovery of hormones is one of the most important in medicine within recent years and has already been proved of estimable value to the science of medicine, as well as a blessing to mankind and animals alike.

A few years ago much was written on the subject of organotherapy. The use of animal organs in the treatment of disease is as old as medicine. The ancient Egyptians 500 years B.C. used animal secretions, and one Sushruta advocated orchitic substance in the treatment of impotence. Galen and other early investigators made use of animal organs in the treatment of corresponding diseased organs in man. The craze for organotherapy has had its day, and is now replaced by Horome Therapy—which was left to Starling and his associates, to determine the actual science of Hormones and the true relations of the internal secretions to physiology. Starlings first writings on the subject are profoundly interesting. He says, "since in the normal functioning of the body they have to be discharged at frequent intervals into the blood-stream, and carried onward by this to the organ on which they exercise their specific effect, they cannot belong to that class of complex bodies, which include the toxins, of animal or vegetable origin. We must therefore, conceive them as substances, produced often in the normal metabolism of certain cells, of definite chemical.
composition, and comparable in their chemical nature and mode of action to drugs of specific action, such as the alkaloids. This conclusion is borne out by the few investigations which have been made as to the nature of the chemical messengers in the case of certain well-marked correlations of function in the higher animals. In consequence of the distinctive features of this class of bodies, and the important functions played by them in the higher organism, I have proposed to give a special name to the class, viz., hormones.

‘‘According to this theory the body manufactures its own drugs. These are supplied by the activity of the ductless glands, and not only have they the power to correlate and coordinate the various bodily functions—such as pregnancy and mammary secretion growth and sexual development—but they also have the property destroying toxins and further still, those hormones control one another which is the most significant phase of the Hormone therapy; for we must realize that when a certain secretion is lacking we have a double problem to handle the deficiency, and at the same time the ill effects of an uncontrolled antagonistic secretin. Here arises the Hormone balance a most important factor in the proper conduct of the medical treatment which is frequently overlooked.

This Hormone theory opens up a new idea in Therapeutics and explains the therapeutic action of many of the older drugs which heretofore was little understood as being seen through a glass darkly, but now affords a clearer insight for future methods of treatment.

HORMONE THERAPY
A New Idea in Pediatric Practice

Of late years great progress has been made in certain phases of therapeutics and we have become almost accustomed to the startling announcements regarding the remarkable curative powers of this preparation or that. Not the least in the encouraging advances of modern medicine is hormone therapy, the application of the active principles of the internal secretions as therapeutic agents.

We are all thoroughly convinced of the value of the extracts of thyroid, suprarenal and pituitary glands and our colleagues ‘‘across the pond’’ are regularly using numerous other
preparations of the same character, prepared from various animal organs.

The key to many difficult matters has been found as a result of the study of various phases of this special line of research and it seems quite reasonable to suppose that much more progress may be expected in this field. The study of the internal secretions and their hormones offer much encouragement in practical therapeutics and it is surprising to note the extensive literature on this subject that is gradually finding its way into print. One of our contemporaries, (The Prescriber, Edinburgh, April 1913) recently devoted the whole of a double issue to hormone therapy and in going through it one could not help feeling some of the enthusiasm of a number of its contributors.

In this issue of Pediatrics we present a paper which draws attention to a quite new idea in the treatment of gastro-intestinal disturbances of children—the use of secretin, and while the subject is still almost in its experimental stage it seems thoroughly reasonable and worthy of careful clinical study.

"The loss of the hormonal balance is written large in the morbid prenonena of the human body and its restoration forms a main principal of modern therapy. There is undoubtedly a great future before hormone therapy and a knowledge of its preset application is essential to all who practice the use of medicine."

THE DEADLY HOUSE FLY, KILL IT

An interesting mathematical problem is presented herewith from an esteemed contemporary concerning the multiplication of the common house-fly.

Prof. L. O. Howard, chief of the Bureau of Entomology, has been studying the habits and life history of flies and has discovered that each female fly lays 120 eggs at a time and that she usually lays four of these generous batches of eggs before she considers her motherly duties ended.

Professor Howard began studying flies in the early part of June, 1912, and he found that the eggs which the fly laid on June 1st had hatched out into flies within ten days, and that each of the 120 young flies were ready to start right in laying eggs at the same rate that their mother had laid them. There is, thus abundance of time for the development of 12 or 13 genera-
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lications during the summer, before the flies begin to hibernate.

Starting with the first batch of 120 eggs laid by the original fly on June 1st, we arrive at the following astounding table of consequences by the last of September, when the breeding season ends;

June 1, one fly lays 120 eggs; June 10, 120 flies lay 14,400 eggs; June 20, 14,400 flies lay 1,728,000 eggs; June 30, 1,728,000 flies lay 217,360,000 eggs; July 10, 217,360,000 flies lay 26,083,200,000 eggs; July 20, 26,083,200,000 flies lay 3,029,984,000,000,000 eggs; July 30, 3,029,984,000,000,000 flies lay 363,598,080,000,000 eggs; Aug. 9, 363,598,080,000,000 flies lay 44,631,769,600,000,000 eggs; Aug. 19, 44,631,769,600,000,000 flies lay 5,355,812,353,000,000 eggs; Aug. 29, 5,355,812,353,000,000 flies lay 642,697,482,240,000,000 eggs; Sept. 8, 642,697,482,240,000,000,000 flies lay 76,123,697,868,800,000,000,000 eggs; Sept. 18, 76,123,697,868,800,000,000,000,000 flies lay 9,134,843,744,256,000,000,000,000 eggs; Sept. 28, 9,134,843,744,256,000,000,000,000 flies lay 1,096,181,249,310,720,000,000,000,000 eggs.

But the total just started is the resulting progeny of the mother fly and her first batch of 120 eggs. Professor Howard tells us that each fly usually lays four such batches of eggs. So by multiplying the above figure by four we find the following: 4,384,724,977,242,880,000,000,000,000,000,000.

One mother fly might, therefore in one summer produce twelve generations of children, grandchildren, etc., until her descendants numbered four octillions, three hundred and eighty-four septillions, seven hundred and twenty-four sextillions, nine hundred and seventy-seven quintillions, two hundred and forty-two quadrillions, eight hundred and eighty trillions.

The human mind cannot grasp the full magnitude of these figures—four octillions of little flies! But a little computation begins to reveal what a stupendous mass it would be.

Suppose we say that an average house fly measures a quarter of an inch in length and a quarter of an inch in height when she stretches her legs or wings, and a quarter of an inch in width. Four flies standing in Indian file would just reach one inch. Sixty-four flies would make one cubic inch.

Thus we see that there would be 253,440 flies in a mile if they stood one in front of the other. If all the four octillion flies stood in a continuous line they would reach 20,000,000,000,000,000,000,000 miles; they would reach 833,000,000,000,000,000,000,000 times around the earth. Spread out over the surface of the earth, they would make a carpet over the entire globe more than
a thousand miles thick. Stretched out to the sun (which is 92,000,000 miles away) these flies would project to the very center of the solar system; passing Venus and Mercury, on the way, they would form a huge road from the earth to the sun a thousand miles wide and three miles deep.

If the flies were all rolled up into a huge ball, they would make a mass bigger than the earth! All this may not seem possible. But figure it out for yourself. Take, for instance, the last surprising statement that the flies would make a solid mass bigger than the globe.

If one fly occupies a quarter of an inch—wide, high and thick—then there would be sixty-four flies to a cubic inch, or 110,592 flies to a cubic foot, or 2,985,984 flies to a cubic yard, or 16,277,791,171,084,000 flies to a cubic mile.

If it takes that number of flies to make a cubic mile, then divide your four octillions of flies by that number, and you find you have 268,788,165,861 cubic miles of flies as the summer product of the one original mother fly. But the scientists tell us that the entire bulk of our earth is only 259,944,035,515 other cubic miles. So, the flies would make another world as big as our earth and there would be enough to spare almost to make a moon besides.

Of course these figures assume that each fly is a mother fly, capable of laying eggs, whereas half the flies would be male flies, and have no direct offspring. But, on the other hand, the figures above are vast inadequate and do not begin to be big enough. This will be seen when it is realized that each one of the flies in the above calculations is only allowed to lay one batch of eggs, whereas she is entitled to lay four batches of eggs, and each of these three extra batches of eggs might hatch out into flies and go on laying their four batches of eggs.

This would be a perfectly legitimate thing to reckon, but figures would run beyond anything which the space of this magazine could print, and it would be as hopeless as it would be to compare the grains of sand at the seashore—no number is big enough to express it.

Now, of course, all the eggs a fly lays do not hatch out, and that fortunate fact is what saves us from such a pest of flies as would ruin the world. But the lesson of all this is that every fly should be killed whenever possible. Nature manages to see that countless millions of eggs never hatch successfully, and it is left for mankind to see that such as do survive are exterminated.
The Pesky Fly

Swat the fly.
If at first you don’t succeed, why then
Screen doors cost less than
Screens in the windows cost.
A fly in the milk may mean a
Flies in the dining room pray.
It costs less to screen your
for a month.
It is better to screen the table
at these precautions and wear more

The fly has natural enemies,
most effectual and most persistent.

The horse stable and pig sty
them clean and there won’t be so
House Fly

House Fly

swat again.

offins.

less than crepe on the front door.

a baby in the cemetery.

ede the nurses in the sick room.

ouse than to get sick and lay off

and wear a smile, than to scoff

running.

the dog among others; but the

should be man.

are prolific fly incubators. Keep

many flies to swat.
SECRETIN IN THE GASTRO-INTESTINAL DISORDERS OF CHILDREN:

A New Idea in the Treatment of Summer Dyspepsias

By HENRY R. HARROWER, M.D.

(Late Professor Clinical Diagnosis, Loyola University, Chicago, Ill.)

London.

There can be no doubt that the appallingly frequent and fatal summer diarrhoeas are due principally to infections and the writer has no intention of belittling, or suggesting any attempt to supplant, the rigorous hygienic and therapeutic procedures aimed at the control of the ubiquitous microbes.

As our knowledge increases one cannot but believe that the present position regarding the control of summer complaints in children will be strengthened and the importance of clean food and gastro-intestinal antisepsis emphasized. So far, then, as this phase of the subject is concerned we have little to say, but desire rather to call attention to a means of treatment regarding which practically nothing is to be found in the literature which, from a physiological standpoint, as well as from clinical experience, has proved itself to be worthy of consideration.

Since Bayliss & Starling discovered secretin (1), and a host of experimental physiologists have emphasized the essential part that this hormone plays in the physiology of digestion, attempts have been made to make use of this fundamental idea in therapeutics. If secretin is a necessary factor in the production of effective gastric and pancreatic juices and if, too, as the French have frequently stated, its influence is not confined to the activation of the secretory cells of these two glands, but that the liver and intestinal glands in like manner are stimulated by this remarkable "chemical messenger", have we not in secretin an agent the therapeutic possibilities of which at least deserve close study and a most extensive clinical experimentation?

The effect on the functions of the stomach of the gastric
hormone, or gastrin, as named by its discover Edkins, was for a long time disputed, but the empiric results of its use are now amply confirmed by the Russian School who for years have discredited the whole "secretin theory." A recent resume of this subject (2) makes interesting reading.

Experiments with secretin, many of which are of the most tedious and complicated character, have been carried out for over ten years, and their number is almost past counting. A hundred or more papers on various phases of this subject have been written and scattered through the literature since Bayliss and Starling's first paper (1) and from this material we can gather the following essential facts which concern the subject of this article:

1. Secretin is a definite chemical substance found in the walls of the duodenum which, passing through humoral channels, reaches the pancreas and other glands and activates their products. It is even stated that secretin combines with the precursors of the digestive fluids and forms a part of the complete digestive ferments.

2. The normal production of secretin is dependent upon the stimulus afforded by the passage from the stomach of acid chyle, the acid content of which seems to exert a specific influence upon the precursors of secretin, the "prosecretin" so-called, liberating it for the service just mentioned.

3. Several investigators have drawn attention to serious nutritional disturbances which are due to changes in the duodenal walls and loss or diminution in its secretin forming properties. Wentworth (3) has made an interesting study on the relation of the absence of secretin in the duodena of children dying from infantile atrophy and malnutrition and indicates that this is a factor which should not be overlooked.

4. Secretin has been used in the treatment of certain forms of indigestion—especially the "digestive insufficiencies", with very good results. Boardman Reed (4) calls attention to its superiority over the ordinary digestives and tonics.*

Several friends of the writer have clinically tested a preparation of secretin in a number of cases and most likely reports will be forthcoming in due time. One thing is evident however: secretin exerts a very effective stimulus to gastro-intestinal function and this stimulation is normal and physiologic and,

FOOT NOTE—Reed has used a preparation called "Secretogen" and in his paper he says of it: "Secretogen is apparently the most powerful excitant of gastro-intestinal secretin so far tried by me".
urally, followed by no reaction. Flatulence and fermentation seem to be controlled very effectively-and-limited experience with infantile indigestions and especially the summer types, shows that this is a means of treatment worthy of further study and consideration.

It cannot be denied that by far the best antiseptics for the reduction of toxic conditions in the intestine are its natural juices. Secretin plays the most important part in their production and its influence is not limited to the stomach or pancreas, but including these important organs, it also influences the production of bile and the intestinal juices from the pylorus to the ileum. The augmentation of the amount and activity of the normal digestive secretions is the most reasonable means of checking intestinal fermentations so common in children and it is well to remember that the administration of secretin does not interfere with the hydrotherapeutic and even the present-day drug treatment of these conditions.

The application of this idea in the treatment of chronic gastric disorders such as atonia and achilia gastrica, gastric and duodenal catarrh, "indigestion", pancreatic insufficiency, etc. is encouraging and the writer firmly believes that secretin is destined to become an important and valuable means of controlling the large class of conditions in which "gastro-intestinal insufficiencies" are primary factors. (5)

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**APPENDICITIS IN CHILDREN**

BY J. GARLAND SHERRILL, A.M., M.D.,

Professor of Surgery and of Clinical Surgery in the University of Louisville, Medical Department, Louisville, Kentucky.

It has been my experience that appendicitis runs a more rapid and severe course in children under the age of twelve years than it does in later life. This is perhaps in a measure due to the fact that absorption is more marked from the appendix at this early period of life, the toxines produced by bacterial growth being much more rapidly taken into the circulation, and resulting in greater depression. It is also probably true that resistance of the patient at this early age is not as well established as in adult life.

Fortunately in recent years surgical intervention for appendicitis has been accomplished much earlier after onset of the disease than formerly, and this in connection with improvement in surgical technic employed has resulted in a marked reduction in the mortality in these cases.

The case to be presented illustrates the condition as it occurs in childhood. The patient, a boy of ten years, had one attack of appendicitis previously (about ten days ago) in which he suffered severely from pain. He was sent to the hospital yesterday for an emergency operation, an acute attack of appendicitis having developed. Upon examination his temperature was found 101° F., there was only slight rigidity of the abdominal muscles and not much tenderness on the right side. Owing to the vague symptoms it was decided not to operate at that time. This morning his temperature is 99.6° F., pulse 116, a little more rapid than yesterday, leucocytosis 16,150.

In this case all the trouble may be confined to the appendix, the middle and outer coats may not be involved; but with a leucocytosis of 16,150 we are justified in performing the operation. Were the leucocytosis less marked, with symptoms improving as they have been during the past fourteen hours, I believe it would be better to defer operation.

Last night this little patient had some pain near the right ear, and inquiry elicits the information that there has been a discharge from that ear for some time, and that there has been occasional pain in the other ear. Of course there is a possibility

*Clinical Lecture delivered before the senior class of the University of Louisville, Medical Department, at the Louisville City Hospital.
that this might account for the high leucocytosis, but I do not believe it does.

Regarding the symptomatology of appendicitis, with especial reference to the disease in children: After a fall or the receipt of a blow, or without such history, the child may complain of severe abdominal pain distributed over the entire abdomen at first, but in a short time pain becomes localized over the lower abdomen. In some instances where the appendix has descended into the pelvis, as not infrequently happens, pain may become localized on the left side. When there is left-sided pain with a suspicion of appendicitis, you may be sure the appendix is located in the pelvis. Along with pain there is muscular rigidity, a tendency of the muscles to protect the appendix from injury. However, it might be remembered that muscular rigidity is not always present.

On one occasion I made the mistake of diagnosticating typhoid fever where there was no muscular rigidity, and subsequent events proved that it was a plain case of appendicitis. The mistake was soon recognized, and later having had this experience I have at times made the diagnosis of appendicitis without there being present any muscular rigidity, with temperature of 98.5°F to 99°F., and considerable pain on the right side. In one case abdominal incision revealed the appendix dilated and ruptured, a large enterolith lying partially therein. Tenderness was at no time great, but the patient complained of intense pain in the side.

The cardinal symptoms of appendicitis are pain, tenderness and rigidity. Pain is frequently of the peristaltic type, probably owing to the efforts of the appendix to empty itself. When the pain becomes localized, rigidity and tenderness supervene. Tumor is a symptom which develops after twenty-four to forty-eight hours, being seldom present before that time. It is therefore not a necessary symptom in the early stages, but when present is a distinctive sign. Hyperleucocytosis is always present in acute appendicitis.

The diagnosis of appendicitis is not always easy, the early stage may closely resemble typhoid fever, especially the tubercular type of appendicitis which is sometimes observed. Tuberculosis of the appendix at times closely resembles an attack of typhoid fever. Appendicitis must also be differentiated from abscess of the kidney, renal calculus, galls tones, and in the female ectopic gestation, pyosalpinx, small ovarian tumors, etc.
I know of a number of instances in which prior to operation the diagnosis of appendicitis had been made, but celiotomy revealed ectopic gestation. However, in ectopic pregnancy there is usually a history of interrupted or irregular menstruation with the development of a small mass in the pelvis; but this is not always true, ectopic gestation being not frequently observed after rupture of the sac has occurred, and in such cases there is no tumor in the pelvis. In those instances there will be a history of pain in the side coming on suddenly, resulting in fainting, very rapid pulse, pallor, symptoms of shock, etc. Shock may also occur in appendicitis when rupture takes place. When the appendix ruptures there is sudden cessation of pain, which is a very important point to remember. In acute appendicitis where the patient has been suffering intense pain for some time, the sudden cessation of pain more often than otherwise means that the appendix which has been distended with pus has ruptured and there is leakage into the abdominal cavity. If the rupture is small there may be a gradual leakage, or the walls of the appendix may be perforated by ulceration, with gradual leakage into the abdominal cavity which may be protected by the omentum and intestines, making a so-called walled-off abscess. When pain suddenly ceases in appendicitis, with rupture of the appendix, general peritonitis may develop and promptly destroy the life of the patient.

While iodine is used by some surgeons in preparation of the patient's abdomen for incision, I prefer soap and water and alcohol, which in my practice has always eliminated wound infection. The objections to iodine are, that in sufficient strength to produce certain asepsis, it is irritating to the skin, and if the latter is sensitive may produce blistering. While some claim that iodine can be freely used within the peritoneal cavity safely and with germicidal effect, yet I believe this practice is likely to result in the formation of post-operative adhesions. It is true, however, that the use of iodine for skin sterilization makes a slight saving in the time employed in the operation.

We will make an effort to complete the operation in this case through a gridiron incision, of course always being ready to increase the size of the incision provided a pus cavity be found present. If all the pus is confined to the appendix, as we believe to be true in this case, we can complete the operation through this gridiron incision and close the abdominal wound without drainage. When there is pus outside the appendix, as happens
when localized abscess occurs, the external incision has to be made larger, and drainage becomes necessary. In making the incision we avoid the abdominal veins wherever possible, but this cannot always be done. We first incise the external oblique muscles, separating the fibres underneath instead of severing them. By means of this gridiron incision the tendency to future hernia is largely overcome.

The first evidence of previous infection encountered is a short, thick mesentery which will be ligated and removed. The best stump is made by beginning at the tip and cutting to the base of the appendix, but sometimes it is necessary to begin at the base and cut toward the tip, especially if it is under the peritoneum. Where there are adhesions this method of severing the appendix is also impossible. We do not use carbolic acid or anything else on the stump, because in our method of operating there remains practically no appendiceal stump. We close the wound where the appendix was excised with fine linen or silk thread. The peritoneum of the intestine is enclosed with purse-string or the over-and-over method, using silk or linen. This makes a double covering, and we can be absolutely certain then about the approximation of the parts.

We have closed the parietal peritoneum, taking a little of the muscle in the sutures in order to hold it. By lifting the peritoneum upward we can approximate it properly without getting any of the omentum in the line of suture. When this method of closure is employed, it is seldom necessary to bring the deep muscle together, but in this instance we will do so by the insertion of two or three sutures. After closing the external structures the muscle adjusts itself, because we have only separated the fibres instead of cutting them. We are now closing the external abdominal fibres with continuous sutures of catgut. Remember that the stitches must not be drawn tight enough to constrict the tissues. Many surgeons prefer to close the external wound by the sub-cuticular method, but we are using the continuous suture.

Someone has asked why we do not drain in a case of this kind. Because, while the appendix is enlarged and infected, it is not leaking, i.e., there has been no perforation with leakage of pus, the cavity is not soiled, and there is no occasion for drainage. If the appendix had ruptured with the formation of an abscess, if there had been leakage into the abdominal cavity, then as a matter of course drainage would have been required. As
to the most appropriate method, when drainage becomes necessary, my preference is for the rubber tube, as I believe better drainage is thereby secured than by the use of gauze alone. In some cases both may be advantageously employed.

Clinically this is what is called catarrhal appendicitis, and represents a condition that some say should never be operated upon. We find evidence of previous inflammation, the lumen of the appendix being obliterated at one point, and engrafted upon this there was an acute infection as shown by examination of the specimen and the history which has been detailed.

Instead of the customary abdominal binder over the dressing, we are using the zinc oxide adhesive plaster, which may be left on the abdomen in contact with the skin for several days without causing any irritation. With the old-fashioned adhesive plaster this could not be done.

NOTE—This patient had an uncomplicated and uneventful convalescence and was dismissed from the hospital completely well within one week from the date of operation.

PROVISION FOR THE CARE OF CRIPPLES IN SWEDEN AND NORWAY

BY DOUGLAS C. McMURTRIE

New York

In the Scandinavian countries there has always been a large degree of interest in the welfare of crippled children and there have been developed some excellent institutions. Perhaps the most famous work for cripples in the world is that at Copenhagen Denmark which was started in 1872. This has, however, been fully described elsewhere, and so will not be dealt with in the present paper. Shortly after, in 1879, a home was founded in Stockholm, Sweden, and in 1900 an institution at Christiania, Norway. There are now five establishments for cripples in the two countries. They will be described separately.

EUGENIA-HEMMET, STOCKHOLM, SWEDEN

This institution was founded in 1879 by the Princess


2 The krone, which is referred to here and later in this article is approximately equivalent to 28 cents.
Eugenia of Sweden. It is under Lutheran control but receives crippled children without regard to denomination. It is exclusively for the crippled though idiot cripples are not received. The establishment consists of ten specially erected buildings. It has a workshop for making bandages but no gymnasium. The fees are 250 krone a year but these are often increased or remitted in needy cases. At the time of my information there were 38 free beds and during the first 23 years of its existence the home received 362 cripples, 225 boys and 137 girls. Its capacity is 175. Boys and girls are received between the ages of 2 and 12. The children who can attend school, which is conducted in four classes of two divisions each, are taught five days in the week between three and six p. m., their education being restricted to the ordinary school subjects. Besides this, instruction is given in shoemaking, tailoring, brush-making, wood-carving, gardening, sewing, embroidery, weaving and housework. Most of the children take courses in shoemaking and tailoring. There are also, besides the directress and her assistant, four certificated teachers, nineteen nurses, a housekeeper, fourteen servants, and a woman to make bandages.

FORENINGENS FOR BISTAND AT LYTTA OCH VAN-FORA, ARBETSSKOLA OCH HEM, STOCKHOLM, SWEDEN

This was founded in 1891 and is devoted to the care and industrial education of the crippled and lame. Corrective gymnastic treatment is provided. It has both resident and non-resident pupils, the former paying between 15 and 30 crowns a month, the latter are received free, and any change whatever may be remitted in the case of very needy pupils. It has accommodations for 35, 15 of whom may be resident—9 boys and 6 girls. No regulations have been made as to the age of admission. Children able to attend school are received only as non-residents. Instruction is given in cane-making, brush-making, shoemaking, wood-carving, wood-turning, cabinet-making, embroidery, crocheting, weaving, sewing and book-binding. Cases of sickness are cared for in the general hospitals.

ARBETSSKOLAN FOR VANFORE, GOTHENBURG, SWEDEN

This was founded October 5th, 1885, and is under Lutheran control, although communicants of other denominations are also
received. It is devoted exclusively to educating and caring for the crippled. The fees are 25 crowns a month. It has accommodations for 70. The boys are taught book-binding, shoemaking, turning, cabinet-making, basket-making, brush-making, the preparations of bandages and wood-carving. The girls are trained in hand and machine sewing, fine needlework, embroidery, weaving, bandage-making and similar occupations.

**HJEMMET FOR VANFORE INOM SKANE, HELSINGBORG, SWEDEN**

This institution, which was founded April 5th, 1887 is intended exclusively for needy cripples. Resident patients pay 10 crowns monthly, or, if from a province, 15 crowns. There is room for 30 and only adult cripples are received. Some outpatients can also be provided for. Men are taught brush-making, cabinet-work, basket weaving, chair-eaning, and making bamboo furniture; Women are trained in plain sewing, embroidery, crocheting, weaving mats, weaving and making slippers.

**SOPHIES MINDE, ARBEIDSSKOLE FOR VANFORE, CHRISTIANIA, NORWAY**

This institution was founded by King Oscar II, from a fund collected in honor of the fiftieth anniversary of his reign in Norway, the corner-stone being laid December 12, 1900. It is Lutheran in denomination and is designed exclusively for the care and training of cripples. The regular fee is 360 crowns yearly although this is frequently decreased. The institution also has some free beds. This fee does not include expenses of possible hospital care, bandages, clothing or books. There is room for fifty or sixty patients of both sexes above the age of seven. In preparation for their future calling, the pupils are instructed in cabinet-making, turning, wood-carving, drawing, engraving, shoemaking, book-binding, brush-making, reed-weaving, tailoring, plain sewing and embroidery. This institution has absorbed the Arebeidsskolen for Vanfore at Christiania, which was established February 1st, 1892. Its general type was similar to that of its successor. The usual fee was 320 to 384 crowns. The capacity is about 50. The ages of the pupils range from 10 to 30, and in exceptional cases still older cripples were received.
SEVEN SEX TALKS TO BOYS

BY IRVING D. STEINHARDT

New York City

Although most of you perhaps are still a long way from the time when marriage will interest you personally still it is a part of a sex hygiene course to include the duties of a husband and father, therefore in our lecture this evening we will discuss the husband and father, taking up the former first. What is marriage? Marriage is the coming together for life and probably beyond, of two people who love each other fondly, truly and faithfully. Love therefore can be the only basis of a real marriage. Marriage without it or for any other reason is merely to have a legal license to indulge in the marriage relation. In other words to live in a state of legal immorality. Am I severe in the terms of my statement? Well I must be frank and honest with you and that's the way it seems to me. It is to live a lie and probably to bring children into the world in whom the great power of love is missing. If we are to regard the marriage relation as an expression of the highest and most sacred of the best human love, we cannot but condemn the male or female who takes part in it with any other feeling but this. What is love? Love is the greatest of all human emotions. There are various kinds of love such as love for the parents, sisters or brothers etc. They are different loves however from the kind you will have for the woman you desire to marry. The love in this case will be an emotion that is hard to explain. It will be a feeling that will make you always want to be in the company of this particular female. It will bring out in you all that is good and put a check on all that is bad in you. It will mean that eating, sleeping, playing or working your whole world will revolve around the object of your affection. She will at once become the whole object that you are striving for, and if at any time your thoughts should stray to a sexual basis regarding her, it will be in a respectful way, that you would like her to be the mother of any children you are to be father to, because you regard her, or see in her qualities of the ideal wife and mother. The fact that the sex relation takes place after marriage, is not as one of your companions said last week, a sign that marriage is only based on the sexual relation. In other words, a legalized manner of having the sex relation, but is as I have already told you, an expression of the most sacred and deepest love that
human beings are capable of, and which in its proper practice makes for the continuance of the human race of the best qualities. Remember I am discussing a marriage of love. What makes a good husband? Or in another way of putting it, what has a wife the right to expect in her husband? First consideration is morality. A husband must devote himself so far as the sexual relation, at least, is concerned absolutely to his wife. It is a source of great pleasure to the clean, virgin woman who is about to get married to know her husband to be is as clean sexually as is she, and in the future this will be so, for if he isn't the bride to be will very sweetly but firmly sing to him "No wedding bells for me" under the circumstances. Certainly even now when thoughts of marriage enter the head of a young man who has heretofore been loose in his morals, illicit sexual relations should cease at once. To those of you who have listened to my talks and who are still morally clean, I hope you will remain so, and to those of you who have already erred morally, I hope my talks have convinced you that immorality is wrong and that you have determined that the future will find you morally clean. To return to marriage, the prospective and actual husband therefore must be sexually clean. He must have carefully thought over the girl he wishes to marry and be sure that he really loves her and is not merely infatuated—that counterfeit imitation of love that does not endure the test of time. He must be patient, just, kind and gentle at all times and if possible more so when he knows his wife is in the way of becoming a mother. He must even be the sweetheart as well as the husband which means that in love and devotion to his wife he must be as he was when he was trying to win her, and even more so. He only showed her his best side then and this is the only side she should ever see. In fact he should be constantly endeavoring to improve that best side. There is always room for improvement you know. He must not fall into the error of imagining that his wife is anything else but his companion on an equal footing with himself. She is not his hand maid, servant or slave. She is not his mental inferior either. In fact in many cases it is just the reverse. She is a human being with a brain and therefore capable of thought, action and deed and must be treated as such. She is entitled to more consideration and respect than any other woman the husband may know. His first duty is to her. She has a right to expect her husband to give her a good home, in all the word home implies.
She gives a good return for all he may expend. She makes for him a good home and runs it to the best of her ability and therefore she is not merely an expense to her husband nor a paid employe but a full partner in all his joys or troubles, willing and anxious to lighten and share his burden when she can. Ready and anxious to sympathize and encourage her husband at the proper times, and always ready to assist and help him advance his interests at all times, and all she asks in return for her constant, unselfish devotion to her husband and children, is his entire love. She willingly and unfeignedly risks her life and bears the severe pains and trials of childbirth because of her love for her husband. The husband must show his appreciation of all this by being faithful, true and devoted to the interests of his wife, their home and their children. While the home must be a real home and not merely a show place for friends to admire, it still must be neat and clean and the husband must do his share towards keeping it that way. It is wrong for him to deliberately or thoughtlessly make work for the housekeeper. Not only must he set a good example by asking for a neat and well kept home but he must remember to be neat and clean himself. When he was courting his wife he trained her to a neat, well groomed man and that is the way she wants him to be after marriage. If it were not fitting that he should have been slothful and dirty before marriage he has no right to assume that condition after marriage. If you think it makes a wife happy to hear her husband criticised because of his untidy appearance, you are very much mistaken. It hurts her very much and it is somewhat of a reflection on her that her husband has not sufficient love and respect for her to want to keep clean and neat. Understand there is a difference between a foppish dandy and a neat, tidy looking man. Clothes do not make the man but there is by far no objection to a man wearing neat clothes. Then again personal habits of cleanliness such as bodily cleanliness, best preserved by a daily bath; the care of the teeth and mouth, best attended to by at least one daily cleaning with a tooth brush and mouth rinsing, are important. A clean girl is very liable to find a man repulsive to her if he is careless in these regards. Remember when the right sort of a girl consents to marry you she does so because she loves you, above everything and everybody else. To her you represent the very best of mankind and it is up to you "to make good" as it were. By living up to your part of the marriage partnership you encourage the wife to do her share
if she needs such encouragement. Both of you cannot help but be constantly improved mentally and physically by this mutual desire born of love to make and keep the other healthy, happy and contented. The nearer both of you approach the supreme height of health, happiness and contentment the finer the quality of the fruit of your union. It is carelessness and indifference that ruins most marriages, that come to grief, and the happiness of husband, wife and children. Neither has the right to sacrifice the other nor the innocent children. Always remember if you expect to have your children love and respect you, set them a good example by loving and respecting your own parents and those of your wife. The mother-in-law joke is rather played out at this late date. I never found any of them so very terrible. They are worse as grandmothers. Every business house has a head to it, likewise so should every home. When the head of a business is silly enough to be an unreasonable, unlikeable tyrant this business is not likely to prosper. It is the same with the head of a home who is like that. Nominally the husband is master of the house and his rule should be that of a most kind ruler. When it is otherwise he will find his home a dismal failure for no matter what fear of him may inspire in his presence, he will sooner or later learn a painful lesson through plans matured behind his back. The successful ruler everywhere is the one whose rule is endured because of his subjects personal love for him. The time is past for any other kind of rule. In fact rule based on anything else is very liable to be misrule. Therefore to sum up what makes a good husband—(a) morality, (b) constant, faithful and unswerving love, (c) honesty and faultlessness, (d) devotion and gentleness, (e) even temperedness and patience, (f) loyalty and kindness, (g) temperance in drinking as well as in many other things, (h) interest in the wife, family, and home instead of the saloon, club or other outside interests, (i) being a good citizen who fights for purity and honesty in national, state and city governments, (j) obedience to law and order, (k) and a strict observance of the golden rule which says “Do unto others as you would have others do unto you.” I lay down for you, you see a rather strict set of rules for what I think a wife has the right to expect from her husband and yet all of it could be boiled down to a very simple sentence. “Be a real man in all the term implies.” What shall you look for in a girl you would want for a
wife? My advice would be as follows—imorality, (and because you look for sexual cleanliness in her it is but just that you should be the same way), 2.—love of children, (I believe there is something very wrong with the woman who don't want children or who don't love them, to me, at least, they don't seem like real women), 3.—womanliness, (under this head I put the ability to love deeply, constantly and faithfully, gentleness, kindness, devotion and patience), 4.—good temper, (here we might also put consideration and self control), 5.—domesticity, (love of housekeeping and lack of giddy, gadding about is a most desirable quality in every wife), 6.—neatness, (if you are neat yourself, lack of it in others will be very distasteful to you), 7.—moderation, (this will include eating, dress, ideas of living, amusement and other things as well) 8.—temperance (to me a woman who never drinks at all is a very desirable person), 9.—economy, there is certainly an advantage in having a wife who will help you provide for the future instead of urging you to extravagance in the present), 10.—strength of character, (one certainly wants in the future mother a character which has in it strength, determination and firmness),

the question of looks is a very personal one. All have different ideas of what beauty is and after all beauty is only superficial and oftentimes has back of it a very shallow character of the most selfish and stupid kind. Do not marry in haste only to repent at leisure. Look upon marriage as a tie that really binds at least for life and as if divorce did not exist. The question of whether it should or should not is not for discussion here. Much can be said on both the negative and affirmative side of the question, but as I said we will not discuss it. Let all of you try and make such selections when you marry that whether divorce is allowed or not, it will not interest you any so far as your marriage is concerned. Let me spend a few minutes in discussing with you a few things about the woman who is on the road to motherhood. Her condition brings about certain changes in her that you as future husbands and fathers should learn.

I would not discuss them with you now owing to the youth of some of my auditors, if I knew surely you could have the benefit of such advice at that particular time in the life of your future wife. However I'll take the chances of being criticised and speak to you, for after all you are all to be missionaries in the cause of morality and proper sex hygiene and therefore even by spreading this additional knowledge you may save some
men and women some unpleasant times. The expectant mother is entitled to especial consideration in all things. The prospective father therefore, if he wants the finest offspring his wife and himself are capable of giving to the world, must be prepared for many things. He must be prepared to see the usual disposition of his wife change for better or for worse and if for the latter he must bear it all uncomplainingly consoling himself with the knowledge that the change is only a temporary one. He must allow her positively to have the entire say regarding their sexual life only not permitting sexual excess. If the reverse is desired however he must submit. Worry, shocks, and nervous strains of any kind must be kept out of her life as far as it is possible. They all have a bad effect upon the mother and anything that affects the mother that way likewise has a bad effect upon the child. Overfatigue whether from work or pleasure is bad, that of the former worse than the latter however. Overindulgence in food, especially of a very rich character, and in drink are of course detrimental to her and the unborn child. Pleasure of a proper kind and any reasonable form of amusement is good for her. Violent exercise whether in the form of work or pleasure is very bad. Jumping, dancing, long travel or automobile riding are injurious to the expectant mother. The expectant mother needs to lead a quiet uneventful life with the increasing love and devotion of her husband, who stands as a stalwart protector over her and protects her from that which would tend to affect her and their child unfavorably. Her modesty because of her condition must not be allowed to keep her indoors, because she needs air, exercise and sunshine, both for the benefit of her own life and that of her unborn child. When you arrive at the stage of husbandhood and your wife confides to you that she is in a condition of expectant motherhood, see to it that she is immediately placed under the care of a good physician. It will be better for her and all concerned. And don’t let her go around to find the doctor who will do it the cheapest but the one who can do it the best. Remember childbirth is not any easy matter and if your life and degree of what is a most severe pain and suffering, was going to depend to a certain extent on the skill of the doctor you had attending you, you would not think of expense but would want the finest you could get. So it is in a confinement case. You want to give the wife the very best you can get her to the limit of your pocket-book. The best in none too good for her.
A Case of Hirschsprung’s Disease, by Dr. H. C. Machell, Toronto, Canada, said: On the tenth of June, 1912, I was asked to see a boy of three years of age. Examination showed a poorly nourished child, with a gray, sallow or muddy complexion. He stood or walked in a feeble way; the abdomen was large, tympanitic over all areas, tense and shiny, even in the flanks. Coils of intestines were plainly visible. An intestinal peristaltic wave was seen at times, often running from the right upper abdominal, to the left inguinal region. A diagnosis of congenital dilatation of the colon, or Hirschsprung’s disease, was made. Feeding and outdoor life till autumn were suggested. By autumn, the child had reached a stage in the disease when operation seemed justifiable. During Mr. Arbuthnot Lane’s visit to the United States and Canada in November of 1912, he was asked to operate on the boy. He found the pelvic colon and divided it, making an anastomosis with the ileum. The ileum was divided at a point close to the cecum. The mesentery was drawn together, closing the space in the pelvis with a purse string suture; and the fluid end of the pelvic colon was fixed to it. No mechanical obstruction, kink, adhesion, stricture or contraction of either colon or rectum was found at the time of operation, to account for the distention. No diarrhea followed the operation; neither was shock, thirst or any discomfort complained of at any time. The patient made an uninterrupted recovery.

Operation: A mesial incision was made through skin and linea alba extending from 2 to 3 in. above the umbilicus to 2 in. above the symphysis pubis, the peritoneum was picked up and slit to the full extent of the wound. The edges of the incision were now retracted: the large bowel forced its way on to the surface of the abdomen in a greatly distended condition; the intestine was covered with warm paraffined silk handkerchiefs. The large intestine was clamped about 7-in. above the anus; the small intestine was clamped 3-in. above the cecum; stout
cat gut ligatures were inserted into the mesentary at intervals and the mesentary divided after each ligature all around. The small and large intestines were divided between the original clamps; the free end of the pelvic colon was cauterized; the large intestine was removed, and a small portion of pelvic colon was sutured; and a clamp was applied to the side of the colon. The free end of the ilium was brought over to the upper surface of the colon and sutured on one side, with No. 00 silk. The colon was opened and sutures were continued around the gut; a suture was now inserted, taking in all the coats of the intestines and the serous coat sutured over it; a side-to-side anastomosis was formed.

A purse-string suture of strong gut was now passed around to the free margin of the mesentary. This closed the space in the pelvis, into which the bowel might fall.

**Dr. E. F. Graham**, Philadelphia, Pa., in discussing Dr. Machell's paper, said: I would like to ask Dr. Machell how much colon was removed. I think that the results achieved by Dr. Lane in operating for this condition in children have been wonderful, if he has had only one death in sixteen operations. This result is certainly remarkable, and I should like to ask whether these results have been attained by any other surgeon?

I have had one case of this disease and it was intended to do a two-stage operation. The surgeon in this instance did a partial operation, but the child died eight or nine days after the first stage of the operation. I think it would be a good thing to decide just what the mortality is of this disease, for if others can get the results that Mr. Lane has secured, then operation would be justifiable.

**Dr. J. P. Crozen Griffith**, Philadelphia, Pa.; I think Dr. Machell should be congratulated upon the results he has obtained. He has had a typical case, and his being a typical case, he deserves a great deal of commendation.

I had a typical case some years ago, and I made a very careful study of the literature of Hirschsprung's disease; but all I could find at that time were twenty-two cases which came under that category. The condition must be either congenital or idiopathic. Many of the cases had kinks, etc., and could not be classified in this category. The condition must be dependent upon an innate tendency to dilatation, and not on stenosis.
Cases were reported long before Hirschsprung wrote on the subject, and the condition should not bear his name. These cases, strictly speaking, are not Hirschsprung's disease; but are congenital, if we limit them in that way. As to Dr. Machell's case, we can call it Dr. Hirschsprung's disease, but correctly speaking, it should not have any one man's name.

There are simply two symptoms: constipation and restriction. They may come together, or one may come first. These cases rarely have hard fecal masses. Some will have a lot of liquid. The feces are often soft. There were twenty-two cases reported in the literature I read, and eighteen were known to have died, and only two known to have recovered.

A boy whom I saw had congenital dilatation of the colon. His abdomen was enormously distended in infancy, but I objected to operation. I said, "that colon will contract. The boy has had chronic indigestion." The result was that the condition improved, and at the age of four years, the child had no symptoms of the disease and seemed to be perfectly healthy. I saw the mother several years afterwards, and she told me the boy had entirely recovered. Now I think it would have been a grave mistake to have exposed that child to the great risk of an operation. The thing in these cases is to find out whether they are congenital or idiopathic, in which latter case, operation only can be recommended.

Dr. H. T. Machell, Toronto, Can.: The small intestine was taken off about three inches above the appendix. The question has been asked here whether the operation is justifiable. Judging from Mr. Lane's statistics, I think that it is justifiable. I think Mr. Lane has done more work than all the other people put together have done. No other surgeon has shown such statistics. Mr. Lane did the operation in a very easy, comfortable way, sitting on a high stool; he did it very rapidly, and the operation took about two and a half hours. The thing that interested me most was the purse string suture looped toward the pelvis, so that no kinks could occur. There was not any pus, and not a particle of moisture in the wound; but it looked exactly as the intestine does now (exhibits intestine). The wound healed perfectly.

The Relation of the Physician to Social Service. Dr. J. C. Gittings (Philadelphia) said: I would like to ask why, since the disturbances of health, in its broadest sense, are such im-
important factors in the etiology of social ills, and since hospitals—for the time, at least—have extended their functions so as to embrace as many problems of health as circumstances will permit—physicians as a class, are not assuming greater responsibility in directing the social work of hospitals, instead of leaving it largely in the hands of lay-workers and laymanagers. Is it because physicians have failed to grasp the basic value of this work and its direct relation to medicine? Or, after due consideration, are they convinced that the work is chiefly a sociological measure, and therefore should be left to lay-workers for its organization, development and direction? In order to get some light upon these questions, I sent a questioner to members of the American Pediatric Society and other physicians interested in pediatrics. I found from this inquiry that social service departments had been established in one or more hospitals, in 18 cities from which reports were received. Out of 69 hospitals, 29 maintained more or less complete social service and performed follow-up work with nurses; 45 per cent. apparently made no attempt at after care, although in a number of instances this deficiency was about to be corrected. In every instance, physicians approved of social work, only a few stipulating that proper management was essential. To sum up the evidence, it showed, first—that physicians approve heartily of social service and appreciate its value. Second—That hospitals are somewhat slow to take it up. Third—That physicians consider it more as a sociological adjunct to, than as an integral part of medicine. Fourth—Partly on this account, and partly for lack of opportunity and for unknown reasons, they often fail to assume responsibility for directing it.

In examining the questions of function and direction, I considered those which can be performed chiefly on the basis of sociological trainings as sociological functions; those which a trained nurse can best perform, I would group as medical functions. Among the medical functions, I would class the prevention of contagion and the discovery of cases in the home; advice and guidance in plan and place of treatment; nutrition and hygiene of the person and home, and home nursing. Evidence coming from institutions in which social service operations have reached a high degree of development shows that, broadly speaking, the chief function of social service in general hospitals is medical. In the work among children, the functions of social service may be defined, first—to instruct in home
treatment of out-patients and to secure their regular attendance. Second—To prevent the occurrence and recurrence of diseases by instruction and demonstrations in the home, on hygiene, dietetics and domestic science. Third—To detect and guard against contagious diseases. Fourth—To detect other diseases, including mental backwardness, and to advise and direct their proper disposition and place of treatment. Fifth—To instruct in pre-natal care. Sixth—To secure trustworthy social data in the home, and to carry out special medical-social research. The value of these investigations is just beginning to be appreciated. This function is more medical than sociological. Seventh—To overcome demoralization in the home by instilling hope and courage, renewing confidence, etc. Eighth—Conservation of resources: finding or changing employment; providing apparatus and emergency supplies; support for family or patient; moral suasion or instruction, etc. These last two require purely social work. As to who is the best agent to have in charge of a social service department, I believe that other qualifications being equal, physicians prefer the trained nurse. Undoubtedly, the personal factor is the first element; no work requires greater patience, optimism, humanitarianism, tact, judgment, and above all, common sense. For this reason, many social workers are lay-women, whose educational advantages are so much better than those of the average type of the trained nurse. Granted the necessary personal and educational equipment, it seems that the training of the trained nurse in a large general hospital, supplemented by sociological training, must furnish the best preparation for medical social work. The best interest of such a social service department demands the directing services of a committee formed of representatives of the medical staff of the board of managers, and, if desirable, of the ladies’ committee, with the head worker.

In the annual report of the social department of a well-organized social department of a prominent hospital was found the following: "Drs. are as well trained in social diagnosis as laymen in medical diagnosis." This was not meant as an arraignment, but its truth cannot be questioned. The art of medicine of yesterday was too conservative in its conception of its true functions. Preventive principles of medicine must be extended so as to include, not only the assault of contagion, but also the less spectacular and no less dangerous undermining of
faulty habits and environment. Between the prevention of disease and the preservation of health there is no essential difference, and surely the physician and not the sociologist should become the logical arbitrator of all the problems relating to health. The evolution of the new type of sociological physician should be by and through the activities of social work. In the medical school, he should devote much more time to hygiene, psychology and eugenics than at present.

Dr. Fritz B. Talbot, Boston, Mass.: We now have a social service department in connection with the Massachusetts General Hospital. Our clinic was used by the social service workers at first three years ago by having a worker in the Social service department follow up the clinical cases after they had been treated at the clinic. Recently the social service department, having to do with children, moved up in our clinic, and is now working side by side with our house officer. They do their work in the clinic, and are able to help us in the mornings in the smaller problems; and in the afternoon, with the larger problems. We have gotten to the point now where we cannot do without the social worker. Our hospitals are greater with the co-operation of the social worker than without her. The Massachusetts General Hospital, of its own accord, has instituted a branch of general nursing, with six months training in social service work as a part of the course in nursing. This is the first time, I believe, this has ever been done.

Dr. F. S. Churchill, Chicago, Ill., said: I agree with Dr. Gittings in that we have made a mistake in not taking a more active part—in fact in not taking the lead—in social service work. I am glad, however, to see that the physicians are beginning to realize the importance of social service work; for all of this is preventive medicine, and, as Pediatricians, we ought to all take an active interest in the work. The social service department is well organized in the Children's Memorial Hospital of Chicago, and, like Dr. Talbot, I now feel that we could not get along without the social worker. In our hospital, our babies seldom have a second stay in the hospital, for the simple reason that every single case of a baby discharged is followed up by the social worker, and the mother is instructed in the care of the baby; and in that direction alone, the establishment of the social service department has been justified. Among the older children, too, we get good results in
having the social worker show the mother as to the proper care of the child; but the result is not as striking as it is in the baby service. Among our babies, I repeat, we have fewer returns for the second stay, because we have the cases followed up by the social worker, and the mother takes better care of the baby.

We have a school of civics and philanthropy, where social service nurses are trained in all branches of social service work; and they are utilized for field work for that clinic. We also have a dozen nurses from that school of civics to go out with our social workers, as assistants; and in that way, we are co-operating with other agencies in the city of Chicago, which is of broad educational value to the nurses.

Dr. J. C. Gittings (Closing discussion): I have nothing further to say, except that I had my attention directed to this subject while serving on a committee to investigate the work of these social workers; and the investigation of this committee has embraced a large part of the country. It does seem to me that, for some reason or other, physicians are not interested and are not willing to do anything; but, they should appreciate what it really means for the good of the child. We found many physicians and institutions theoretically interested, but not otherwise. I cannot understand this attitude, unless they consider it purely social; but personally, I believe it is more physiologic.

Mucous Cyst of the Cæcum in a Child of Ten Weeks, Producing Occlusion of the Ileo-cacal Valve, and Simulating a Case of Intussusception. Resection of the Gut. Death on the Sixth Day. By Dr. A. D. Blackader (Montreal): The patient was an infant, ten weeks of age, seen for the first time on March 9, 1913. The child had been well for the first two months, and had suffered since from persistent vomiting. A change had been made from the mother’s milk to artificial food. There was no pyrexia. Dr. Gordon recognized a sausage shaped tumor, three inches in length by one in diameter, freely movable in the lower right quadrant of the abdomen, and advised immediate operation. Distinct peristaltic waves were noticed, traveling toward the site of the tumor. The temperature of the patient was 99 F., pulse 140, and respirations 40. At operation, the tumor was found to involve the lower portion of the ileum and cæcum. Above the mass, the ileum was much distended, while below the ascending colon, it was collapsed. Re-
garding it as an ileo-cecal intussusception, careful efforts at re-
duction were made, but failed. A resection was therefore per-
formed, with end to end anastomosis; and the abdomen was
closed. The child had no symptoms of shock after the opera-
tion, and for several days the condition was good. On the
tenth day, the pulse became weak, the face assumed an earthy
hue, and the features became drawn. Death from peritonitis
occurred on the twelfth day. The pathologist’s report showed
that: the tumor consisted of the cecum with its contained cyst
and the appendix. The cyst, when collapsed, measured two
c.m. in diameter, was unilocular; contained glairy mucoid ma-
terial, and was situated on the wall of the cecum opposite the
ileo-cecal valve, extending to and obstructing that orifice The
cyst was regarded as a retention cyst, arising either from faulty
development or from inflammation and occlusion of the mouth
of the original gland. I have found in the literature no case ex-
actly similar to this one. I did, however, find two cases in the
literature that were somewhat similar to the one reported; and
several that had an associated interest, as the clinical symp-
toms were similar, although the pathological findings were of a
different origin.

Dr. Blackader (Closing discussion): I have nothing fur-
ther to say except I thought it a very interesting case. I saw
it first in the hospital when it was placed under my care. I did
not see it early, nor before that time.

A case of Bilateral Hydroureter-Chronic Pyocxaenus In-
fection. Dr. Henry Heiman, New York: This is the case
of a male child, five years of age, who, four months before his
admission to Mount Sinai Hospital, became suddenly ill with
fever, headache, and vomiting; a few days later, blood appeared
in the urine and stools. There was pain and tenderness in the
right lumbar region. The family history of the patient was
negative. Physical examination revealed nothing abnormal,
with the exception of slight dulness in the left interseapular
region and a few fine rales in the left axilla. On July 27, one
week after his admission to the hospital, the urine contained
many pus cells, but no red blood cells, and there was no blood in
the stools. On July 29, the urine showed the presence of the
bacillus pyocyaneus. A blood culture taken seven days later was
negative. On August 8, the bladder was catherized and ir-
rigated. The catheter was allowed to remain in place so to
observe whether the immediately succeeding urine was turbid. This was the case. On August 13, an injection of pyocyaneus vaccine was administered. The blood count was taken one hour before the injection, and one hour afterward, and showed an increase in leucocytes and small lymphocytes, and a slight increase polymorphonuclears and eosinophiles. A cystoscopy was done on August 16. It was found that the right ureter was slit shaped. The left ureter had rigid walls, and was circular. Purulent urine was seen to come from the left ureter. Indigocarmine injection was negative on both sides for forty-five minutes. The bladder mucosa was normal, and therefore the pyuria must have been of supravesical origin.

In catheterization of the ureters, an obstruction was met one inch from the bladder; on the left side, the catheter passed two and one-half inches. Specimens of urine were obtained from each side. The urine from the right ureter was clear; that from the left showed 0.2 per cent. urea and many pus cells. There were no tubercle bacilli. The treatment consisted chiefly of autogenous vaccines, which were administered at periods of a week or ten days. Five injections were given, the first two doses being of fifty million bacteria, and likewise the second, after which the dose was increased by fifty million on two occasions, and then by twenty-five million. The child was discharged, apparently well, on September 18. The patient had been admitted to the hospital with the history that the urine had been cloudy for the past six months, but without hematuria. He had no pain on micturition; but there were three or four watery movements each day, which at times contained water and mucus. There was nothing abnormal in his physical examination. Examination of the bladder made on October 1st, showed a moderate degree of diffuse cystitis. Both ureteral orifices were patulous. The left orifice was enormously dilated. From these appearances, the presumptive diagnosis of hydro-ureter was made, and possibly of dilatation of the pelvis of both kidneys. Argyrol was instilled into the bladder, and an x-ray picture taken. Only an outline of the bladder, together with the dilated lower end of both ureters could be recognized in the plate. A more successful radiograph showed the peculiarly tortuous course of the left ureter, and the peculiar shape of the left renal pelvis. No obstruction was found either by the cystoscope or by a silk catheter. The etiology of ureteral dilatation was not easy to determine in this case. There are two
groups of hydroureter, congenital and acquired. After considering the points in each of these varieties, I have concluded that in this case we are dealing with a case of dilatation of the ureters and pelvis of the kidneys of anomalous origin; or second, with an acquired type of hydroureter, due either to a paralytic condition of the bladder, or to an obstruction of the urethra that interfered with the outflow, preventing the entrance of a catheter. The unusual findings and the mode by which the diagnosis was made were of sufficient interest to warrant putting the case on record. Although temporary improvement was obtained by the use of pyocyanus vaccines, results of permanent value could not be obtained by this mode of treatment.

Dr. Maynard Ladd, Boston, Mass, said I would like to ask Dr. Heiman what position the patient assumes when the instrument is inserted into the bladder.

Dr. Heiman, New York City, answering Dr. Ladd's question: The child is inclined, or in the Trendelenberg position. One should not speak of these cases merely as pyelitis, that is ordinary pyelitis, but we ought to determine the natural causation of the infection. The majority of cases have been cholecytitis. In other cases the bacillus or streptococcus has been found in the position of pyogenic organisms, and one should indicate which one is responsible for producing the condition.

Cases of Edema in Infants. Dr. Henry Dwight Chapin, New York. It has been long known that local and general edemas seen in early life are not all due to nephritis, but the cause of this condition has been variously explained. Some years ago, the writer reported examinations of the urine in 86 cases, and small amounts of albumin were found in 75 of them. In a series of 57 cases of pulmonary diseases, traces of albumin were noted in 49. Other observers have called attention to the same condition. This does not predict the presence of actual renal diseases, but rather, an irritation of the renal tubules accompanying a slight congestion, and having no special significance. I wish to emphasize the point that edema in infants is not to be considered as due to nephritis, simply because of small amounts of albumin in the urine. One must try to differentiate a little more closely this class of cases. Of the 21 cases reported, blood examinations were made in 12 cases. Six showed mild secondary anemia with differential counts right; three showed normal or high red blood count. There was no evidence, in any
case examined, of pernicious or profound anemia, except possibly in a case with 1,900,000 red blood corpuscles. I found the hemoglobin 85 per cent.; white polymorphonuclears forty-eight per cent. and lymphocites fifty-two per cent. The stools were abnormal in 12 cases, fair in seven and unaccounted for in two cases.

The urine was examined in 19 cases. There was sugar in no instance, albumin was absent in nine cases, and a heavy trace was occasionally present in one case. There were occasional hyaline and granular casts in five cases; two showed occasional hyaline casts. The other 13 showed no casts. One showed pus, and one had the phenosulphonephthelein test.

The duration of the disease was from three to twenty-one days. There were seven deaths in the series; three, from malnutrition; two, from broncho-pneumonia; one, from cerebro-spinal meningitis, and one, from pericarditis with effusion. A study of these twenty-one cases did not seem to satisfactorily explain the edema in so far as the condition of the blood and urine was concerned. I believe that we could make a rough classification of the kind of cases that might show edema, as follows: First—those cases of difficult digestion, malassimilation, and diarrheas might produce toxins, might induce a vaso-motor paralysis. Dr. William E. Hume has reported 13 cases in which general edema followed gastro-enteritis in infants and young children. It has been suggested that the condition may be due to retention of salts in the tissues, particularly sodium chloride and the phosphates, but Hume, in observations on two normal cases and two of edema, failed to discover any difference between the salt exchange in cases suffering from this variety of edema and that which took place in perfectly normal children. These edemas with intestinal disturbances are probably analogous to the urticarias. Secondly—edema was seen in various exhaustive conditions as prematurity, marasmus, extreme secondary anemias, edema neonatorum, and prolonged debilitation diseases. Thirdly—In constitutional diseases such as syphilis, tuberculosis, erysipelas, and pertussis. Fourthly—In angioneuroses of vaso-motor origin. Two of these cases reported were of this nature. I think this is an interesting study for future and collective study.

Dr. Alfred Hand, Jr., Philadelphia, Pa., said: I should like to express my agreement with Dr. Chapin as to the problems of edema either of nephritic etiology or the result of this con-
dition. All the cases that I have observed seem to have had digestive disturbances. I think the name for the condition is a matter of choice between the terms, angioneurotic edema, and purpura. It is simply a matter of taste, which term you use.

Dr. Linnaeus E. LaFetra, Brooklyn, N. Y., said: I have seen quite a number of these cases of edema following digestive been on a very thin diet, such as barley water. I feel convinced that barley water is the cause of the edema, and in my experience it seemed to me a lack of proteids in the foods that made the difference; because when the patients were put on cream, milk or proteid, they gained rapidly. I have seen fewer of these cases of edema since Eiweiss milk has come into use. This is probably because the Eiweiss milk has a high proteid content. I think it is something that we ought to look into in cases of gastro-edema.

Dr. Matthias Nicoll, New York City, I would just like to ask Dr. Chapin whether he thinks it right to class these cases as idiopathic edema. I have recently had two cases in which the clinical manifestations were typical of some sort of infection, but they were not idiopathic edema.

Dr. A. D. Blackader, Montreal, Can. said: In my opinion, in many of these cases in which the term edema is used in connection with gastrohepatic diseases, the fault is in detecting the proteid material in feeding. I have had a few cases of gastro-enteric diseases in which edema was a late symptom, and they seemed to me to be due to a deficiency in proteid feeding, but I found that generally some increase in the proteid did good. There was, however, a definite mortality among them. Edema coming on late in gastro-intestinal disease is a dangerous symptom. In my practice—speaking from memory only, I have seen seven or eight cases.

Dr. H. M. McLanahan, Omaha, Neb., said: I had a case in a child that had edema at six months of age. I was called in by a dermatologist. It had been on a feeding of rice water for ten consecutive days, without any milk. The hemoglobin was sixty per cent. and I think the edema was due to secondary anemia. The child was placed on an increased diet, and the condition cleared up, and the urine showed no albumin. Where the edema is due to starvation, a heavier diet will usually clear up the condition. This case that I have cited certainly seemed due to that cause.
Dr. Fritz B. Talbot, Boston, Mass., said: The knowledge of the salt metabolism up to date is probably nil, and owing to that fact salt metabolism is not understood, it is probable that the answer as to the etiology of edemas will not be forthcoming for many years. After you get the normal, you can get the abnormal. The salt metabolism is so mixed up with the metabolism of other food constituents that it is difficult to say which element in the food is producing the effect, when one is doing one thing, and another another thing.

I was doing work with Meyer on salt in a case of fever last winter, giving 0.7 salt. I had a second case where I gave 10 per cent. salt. Suddenly edema of the lungs took place, and if the house officer had not been present, and turned the baby up to let the water run out of the lungs, the child would have died.

Dr. H. T. Machell, Toronto, Can.: Three or four summers ago, I saw six babies (in consultation) with this edema. Only one had casts in the urine, and that baby died. They were all feeding cases, and all got well on a change of diet. The disease is a summer one, and a physician does not see a number of these cases; but they are practically all feeding cases, and most all of them get better on a re-arrangement of the feeding.

Dr. J. Lovett Morse, Boston, Mass.: I have come to the conclusion like Lord Dundreary—that this is one of the things that no man can find out.

Dr. Chapin—closing discussion—said: If Dr. Morse cannot find these things out, it is hard on one in my position to do so.

My object in reporting these twenty-one cases was to clear up in my own mind certain causes. I have thought it was due to an obscure edema in the blood. I had a very careful examination made, and it became very evident to my mind that the blood and kidneys had nothing to do with it. Dr. La Fetra said he believed it was caused by proteid insufficiency. It does seem that it is a warning of the terminal condition, and may serve as a warning of a fatal outcome. In a number of cases it was due to starvation; for when a rearrangement of feeding was had, they gained in weight under feeding by proteid. I believe that it is due to a condition of exhaustion, and to something else as well. As Dr. Talbot says, it will be many years before we understand the case thoroughly, and until we do understand it better, we must not use salt metabolism. But we must watch carefully for
the symptoms of this condition, and if they appear, we must feed up our babies and look out for the end.

**Demonstration of Modified Mackenzie's Ink Polygraph.**

Dr. Walter Lester Carr, New York: The records obtained by tracings are liable to many variations, particularly in children. These variations are dependent upon the instrument, the movement of the arm at the time of making the sphymogram, and the personal equation incident to the operator. All of these factors cannot be eliminated entirely; but by enlarging the roll and changing the surface of the paper, the excursion of the pen records more accurately and lessens the errors. The smoked paper replaced in this apparatus by a smooth paper that takes ink readily, and the recording pens are made larger than the capillary tubes recommended by Mackenzie. The error due to the movement of the arm is lessened by making use of the carrying box of the polygraph for a rest. The personal equation of the operator can be overcome only by experience and by making polygrams under the same or as nearly as possible the same conditions. The modified Mackenzie polygraph shown here has the advantage over the original instrument of Mackenzie in the width of the paper, the three tambours, and the recording pens. With three tambours, the radial, cardiac and carotid pulsations may be recorded simultaneously, and comparisons made in the cardiac and vascular tracings. Like all instruments it is not exactly; but it leads to exactness and should be used to furthur accuracy in the study of cardiac and vascular disease.

**Three Types of Occlusion of the Esophagus in Early Life.**

By Dr. Thomas Morgan Rotch, Boston, Mass.: Considering the rarity of this condition, it is rather a coincidence that three cases of esophageal narrowing should have entered the same wards. The first case was that of a boy twenty-five months of age, who had been breast fed until seventeen months of age. From the time of birth, he had always vomited four to six times daily. This vomiting occurred during feeding, and was never forcible. Sometimes it occurred just as he began feeding. The vomitus was not curdled or sour, and had no regular relation to the feeding. He vomited less when only three ounces were given at a feeding. He had always been constipated. Physical examination showed the heart dislocated to the right, and having a blowing systolic murmur, loudest at the base, and transmitted to the left axilla. There was no systolic
extraction. The urine was normal. The stethoscope revealed a slight splashing sound from fifteen to twenty seconds after a mouthful of milk was swallowed. An X-ray picture, taken after a bismuth meal, showed narrowing of the lower third of the esophagus. The stricture of the esophagus was approached by a funnel-shaped narrowing, while the upper part of the esophagus was slightly dilated. The child lost rapidly in weight. The stricture was so small that it was deemed dangerous to attempt to dilate. Gastrectomy offered the only hope of relief. An operation was performed, and the child died. No autopsy was permitted. This was an extreme case of congenital organic condition of the type which is inoperable and almost universally fatal.

The second case was of a type more favorable for treatment. It represented a type of probable congenital narrowing, not necessarily of organic lesion, in the esophagus, but caused by congenital central spasm resulting in dilatation of the esophagus above the point of narrowing. The patient was a girl ten years of age, giving a history of vomiting and distress. Physical examination revealed nothing abnormal; but the X-ray showed that bismuth passed a little way beyond the middle of the esophagus, and that there was none in the stomach. The esophagoscope was passed, and encountered orange pulp in which was entangled a penny. There was marked dilatation of the lower third of the esophagus.

The third case was that of a boy, five years of age, as long as he was fed on liquids and soft solids, he did not vomit everything he ate. Physical examination revealed nothing abnormal. The bismuth meal and X-ray picture, taken at intervals, showed nothing in the chest; and the bismuth passed into the stomach and intestine, showing that there was no pyloric stenosis. The stomach tube met with resistance at a distance of twenty-four c.c from the incisors. The resistance gave way, and the tube passed into the stomach. The stricture was near the cardiac end of the stomach. Dilatation was performed every four hours. Later a bismuth meal was administered without the tube, and the picture showed the bismuth passing through the stomach. The tube was passed once daily for two weeks, after which time food was taken without vomiting. There was later a relapse in this case. It seems that there are two classes of these cases both congenital; one dependent on a localized organic condition, and the other functional.
Dr. J. P. Crozer Griffith, Philadelphia, Pa.: These cases of trouble in the esophagus of congenital nature are very rare and very interesting. I had the pleasure of reporting a case before this society two years ago. At that time, they offered no hope in the way of operative treatment; because nothing in the world could be done. In many cases, the large part of the esophagus is reduced to a small fibrous cord. There was a tendency to have the body of the esophagus open into the tracheae; but, curiously enough, there seems to be a congenital protection, for when this was done, the child choked when an attempt was made to swallow.

Needle In the Left Ventricle of the Heart (X-Ray). Dr. W. P. Northrup, New York City: I am reporting the case of a child aged two years and three months, which came under my charge in the dispensary of the University and Bellevue Medical College. The child was puny, undersized and pale; and the parents brought her to the dispensary hoping that she might be strengthened. She came upon one of the lecture days, and was announced to me among good material for the clinic, as "Congenital heart." I put my hand over the heart, and felt the purring thrill. I presumed it to be an exceptional case in which cyanosis did not occur. On examination, I noticed that the murmur though loud, purring, and heard all over the front of the chest, was not of maximum intensity over the left second space and costosternal junction. It could be heard everywhere; but the maximum was rather over the belly of the left ventricle. The heart was much enlarged, of regular action, and doing its work fairly well. The physical signs were exceptional, unclassical, and not at all convincing, and it was presumed that it really must be a congenital malformation without cyanosis.

When the child arrived at the Presbyterian Hospital, I announced to the staff that it was probably a case of congenital malformation of the heart without cyanosis. After two examinations, I asked for an X-ray picture, in order to learn the size of the right ventricle and for any chance information we might find. This was done and a needle was seen in the heart.

Now that the diagnosis was made, the question arose as to how the needle was to be removed. While the surgeons were discussing the matter, the child developed bronchitis. She recovered; and after remaining in the hospital for a month or
more, it was decided to send her to the country, as there was no hope either of removing the needle or of the child's living in its present condition. After a short sojourn in the country, it returned to the hospital with pneumonia, and died within 24 hours. An autopsy was made, and gave the following results: The needle was found in the left ventricle, butt-end down, the point being stuck up through one cusp of the mitral valve, the point was free in the auricle, having scratched the endocardium freely but only in a small area. The needle was slightly corroded. There was no inflammatory action about it. The apex of the heart was adherent to the pericardium over an area the size of a quarter of a dollar, and there was also a little roughening of the pericardial surfaces about this adhesion. On the under side of the diaphragm there was a fine streak of rust or other dark staining, showing the course by which the needle had traveled from the abdominal cavity to the ventricular. From this showing, it is easy to trace the course thus far. The needle entered the abdominal cavity by way of the skin surface presumably at the time of the fall and pain. By one thrust it was shoved into the very apex of the wall of the heart, the butt-end of the needle remaining just within the skin of the abdominal wall with the point of the needle actually in the interventricular septum, the point perhaps extending inside the left ventricle. Every muscular contraction forced the needle point forward into the cavity of the heart till it laid with the butt-end free within the cavity at the apex; and, the needle being longer than the ventricle, the point lay free in the auricle. One cannot doubt that there may have been pain and gastric disturbance. It may be believed that there was a protrusion in the epigastrium; and that there was fever, considerable "heaviness of the chest," and dyspnoea, especially at night.

The Future Study of the Anatomy and Physiology of the Infant Stomach Based on Serial Roentgenograms. Dr. Godfrey R. Pisek and Dr. L. T. LeWald, New York: Although Roentgenology has developed into a highly specialized division of medical science, comparatively little research has been done in the department of pediatrics. Flesh and Pietri, in 1911, did pioneer work in this direction, when they attempted to determine the normal stomachs in nurslings and children, using bismuth and barium in their feedings. Their findings could not be substantiated in the light of more modern methods. All
our radiographs were made with the child in the vertical position. All were taken with the plate at the uniform distance of twenty-four inches from the anode. The exposures were all instantaneous and taken at the height of inspiration. Markers were placed upon the ensiform and umbilicus. The tube was focussed on the umbilicus. Bismuth subcarbonate was used mainly. The proportion of bismuth was approximately 10 grams of bismuth to 100 c.c. of feeding. The child’s stomach approaches the adult type more nearly after the second year. The form of the stomach depends upon the age of the child, and the character of the food ingested; but, on account of the imperfect apparatus, we did not find that the X-ray gave us any help in studying of the functional ability of the stomach. In our study, we have tried to determine the normal size and shape of the infant’s stomach, its relation to the neighboring organs, the influence of the internal organs on the viscus, its behavior under different amounts of foods, the influence of different types of food, (such as liquid or solid, acid or alkaline), its peristaltic action, and motility, the passage of food through the gastrointestinal canal and the application of this knowledge to certain pathological conditions. The text-book descriptions of the size and shape of the infant’s stomach does not correspond to the results of our findings. We are forced to conclude that there is no definite normal type of stomach in the infant. It is horizontal rather than vertical in position, when compared with the adult types, and follows certain rather definite forms. It is distinguished by its ovoid shape, as seen in the tobacco pouch, or the pear-shaped stomach, with its base above and to the left. Its shape does not depend directly upon the amount or character of the food ingested, but rather upon the quantity of gas which it contains or acquires. Its limits are greater than we were accustomed to believe, extending to the liver on the right side, and at times filling the entire transverse space from one abdominal wall to the other. Of particular interest from the standpoint of diagnosis is the position of the pylorus. In the majority of cases this is found comparatively high, and behind the pyloric third; at times its position can not be determined, even though we clearly saw that the food had passed out of the viscus. Alwens and Husler reported that they had observed a change in form from tobacco-pouch to the bagpipe variety after the intestines had been emptied. This finding also occurred in our series.
The question of contained gas is interesting. In some cases the gas acts as a buffer, preventing the over-distension of the stomach with food. As a rule, the broader and more protuberant the abdomen of the infant, the greater the amount of gas the stomach contains. In a number of cases, bismuth was seen in the duodenum one minute after the food has been introduced into the stomach by lavage, the average time being five minutes. After the greater part has passed through, the emptying action becomes slower. Except in instances where semi-solid food or cream is fed the viscus tends to empty itself with unsuspected rapidity. We also question, in this connection, the advice of those who recommend placing infants on four-hour feeding intervals, since a large number of stomachs empty themselves in an hour. In abnormal cases, such as chronic disturbances of nutrition, the stomach begins to empty itself very rapidly; and the emptying time is ever shorter. In one series of roentgenograms, the retarding action of alkalies is shown. Our observations tend to confirm these of Grutzer and Sick, that foods in the stomach do not tend to intermix. Sick went still further, and said that with fluid food there can be seen the formation of true layers; so that, in milk digestion, the whey is expelled first, later the casein, and last the fat content. The normal stomach tends to expel its gas soon after the entry of food; it tends to envelope and surround the food, and to diminish in size. A peristaltic wave passing along the greater curvature was caught on the plate at times. In conclusion, I would say that the field of research in this direction has merely been opened. There are many observations, particularly dealing with food in the intestines which need close study, particularly in connection with the disturbance of bowel function so frequent in early life.

Dr. Maynard Ladd, Boston, Mass.: I want to congratulate Dr. Pisek on the excellence of his plates; and to say that no one can appreciate more than I, who have worked on the subject, the difficulties in getting good plates from infants. I do know that in order to get them quickly, we must use the intensifying screen,—and I understand Dr. Pisek to say that this was used in this case—It is very difficulty, in using the screen, not to over-expose or under-expose your plates; but I think it promises a great deal in the way of getting information in regard to the gastric condition. I am impressed particularly
with his work in regard to the difference in the stomachs from
the point of view from which Dr. Pisek showed them, and from
the point of view from which I showed them yesterday. Dr.
Pisek showed them from a child standing straight, and I
showed them from a child lying on the stomach. I think that
the shape of the child's stomach can be had better in the way
shown by Dr. Pisek than from a child lying on either the
stomach or back. So far as studying the emptying process is
concerned I do not suppose that it makes any difference about
the position in which the child is, whether it be horizontal or
perpendicular. One cannot help being impressed with the
great ability of the stomach which empties itself of a large por-
tion of its load within an hour or one and a half hours. For
the complete emptying of the stomach, however, it may require
considerable time, varying from four, to four and a half, and
even five hours, if the child is not subjected to a new feeding.
What Dr. Pisek's paper shows, and what I tried to show yest-
erday is the great lack of peristalsis observed in the stomachs
of infants and young children, the stomach acting in a more or
less contracting way by squeezing the contents out, rather than
in the same way as that of an adult, with rhythmical peristal-
tic waves.

Dr. Henry Dwight Chapin, New York City: I have recent-
ly made a study of two babies; they were given a barium meal,
and then I had a radiograph taken every half hour during the
day. I found that the barium reached the rectum in eight
hours. I can confirm what Dr. Ladd says about the complete
emptying of the stomach; for towards the last, the emptying
of the stomach in this case of mine was very slow. The ingest-
ed meal began to leave the stomach almost immediately; but it
was several hours before the stomach was completely empty.

In studying the bowels, it may be found that the barium
went through and reached the cecum in a few minutes; and in
one case, it even went through the ileo-cecal valve. I notice
that the literature on the subject says that the contraction of
the bowel is almost instantaneous. I believe that there is a
great future along the line of roentgenography; as it has open-
ed up a great field for study towards the enlargement of knowl-
edge of the intestinal tract, both with regard to its anatomy
and as to its physiological functions.

Dr. Fritz B. Talbot, Boston, Mass.: I would like to ask
what happens to the gas when the baby takes the feeding? There looks to be a tremendous amount of gas in those stomachs, and it must be accounted for when the food is ingested. Whether that causes the belching of it out by the babies or not, I do not know. I would like to know whether these babies cried from handling when you were getting them ready for the exposures? I am told by our Roentgenologist that it makes a great deal of difference, if a baby cries or coughs, in the emptying of the stomach, and I would like to know whether it does or does not do so, and whether it has any influence in starting the food into the cecum.

Dr. D. M. Cowie, Ann Arbor, Mich.: I would like to ask Dr. Pisek one question in regard to the position of the patient; that is, the position the patient is put into before the picture is taken. It has been our practice to have the patient lie down; and we get an entirely different picture from what I have seen here today. In watching these pictures, as they passed by on the screen this morning, I looked for the duodenal cap; and I failed to see it. Possibly the position has something to do with this. The patient in the vertical position does not show the duodenal condition as well as when lying on the stomach.

Dr. Henry Heiman, New York City: I wish to call attention to the fact that the capacity of children's and infants' stomachs vary materially. In weighing the new born babes before and after nursing, we found that their stomach capacity varied from thirty grams to 180 grams, which would confirm the geographic pictures Dr. Pisek has shown here today.

Dr. A. D. Blackader, Montreal, Can.: I would like to ask Dr. Pisek what inference he draws from the time in which the stomach is empty, and whether he can draw from these pictures the time of feeding. Of course, we have differences in the feeding of different children; but I would like to know the opinion of Dr. Ladd and Dr. Pisek with regard to the rapidity of feeding and the time required for the emptying the babies' stomachs, under the feeding of the varying modified foods, al-kalies, etc.

Dr. David Murray Cowie, Ann Arbor, Mich.: The conditions here are not exactly comparable. When the test-meal is administered, it is a new substance in the stomach, and different from the ordinary food of the normal meal. It might be in-
teresting to compare pictures taken when the bismuth is enclosed in a capsule with those taken when it is combined with the food.

Dr. Pisek—closing discussion—said: In reference to Dr. Talbot’s question as to what happens to the gas when food is ingested, my answer is that the gas has a tendency either to be expelled upward or is forced downward into the gut; the gut is extended with gas that has gone down ahead of the injection, as the stomach contracted on the food. I think we have all seen, in cases of feeding, mothers place their babies upon their shoulder, when the baby was apparently satisfied, and pat the child, causing an expulsion of gas; and in a few moments the child would take in more food. The gas has considerable to do with the amount of food that the child will take; and I think that this is a conclusion we have to draw in a case of malnutrition. For instance, a child with rickets.

Answering the question of Dr. Cowie, as to the position of the patient, I will say that I think the vertical position gives us better results. The children were kept in a horizontal position when fed, and as quiet as possible before the Roetgenograms were taken. The children were fairly quiet. Occasionally we had a child who cried. I made no particular note as to the effect in the children who were quiet and in the children that cried. I will be glad to follow that up.

As to Dr. Cowie’s question regarding mineral substance, I would say that the weighing of the food is a very small factor. One can use colloid of bismuth, and make an examination in that way. If we have high fat, the stomach empties very rapidly; and as for casein, we have no doubt as to that. As to alkalies, there is delay in the emptying time of the stomach. The capacity is very different in new-born infants. We had a lot of babies brought over from the Lying-in Hospital, and the amount of food required was quite varied. Referring again to the time required for the emptying of the stomach, I will say that I pointed out how rapidly the stomach tended to empty itself. I found the average time to be three hours, but there is sometimes a deposit of bismuth left. I put a tube in the stomach and tried to withdraw this amount, but found that the bismuth was getting into the tube, I then added my fluid and took my washes, and there would perhaps be a dram or a dram and a-half; so that the inference is correct that three hours is sure-
ly the emptying time of a child’s stomach—and, in all probability, less than that.

I want to say a word in regard to Dr. Ladd’s series of pictures. They were very suggestive; and I do not believe that anybody else can realize the amount of work that the series he selected means. I believe, however, I can. Another point is the technique. Unless you have a good technician, good results cannot be obtained. He must be a master technician. He must take the pictures when the child is at rest as they are the only pictures worth while.

Why Does the Operation for the removal of Adenoids Frequentiy Fail to Relieve Mouth Breathing? Dr. H. M. McClanahan, Omaha, Neb.: The lay public has been taught that mouth breathing in children means the presence of adenoids, and nothing more; and that certain relief will follow an operation for their ablation. This opinion prevails largely among members of the medical profession; and until beginning this study, it was the belief of the writer of this paper. For many years I have noticed that the degree of relief from mouth breathing following adenoidectomy varied greatly in many cases; in some very slight, and in others prompt and decided.

On August 1, 1909, I operated upon a boy eight years of age for adenoids. There was slight, if any, relief from the mouth breathing. The operation was a failure, but not due to any fault of mine. I then began a study of the effect of operation in children coming under my observation. When I had ascertained that a child had been operated on for adenoids, I made a study of the case, taking into account the following facts: (1) The facial expression; (2) the ability of the child to breath through the nose with the mouth closed; (3) the appearance of the mouth and throat; (4) the condition and coaptation of the teeth. In studying the facial expression, I was careful to watch the child when it was unconscious of being observed; to note the general contour of the face, the outline of the nose, the size of the anterior nares, the relation of the lips to each other, and the relation of the upper lip to the teeth and the length. The following were my conclusions: (1) careful examination of the case before operation is necessary in order to determine with a reasonable certainty the degree of relief that will follow the removal of adenoids. (2) Where there is a deformity in the superior maxilla, a frank statement
of the facts to the parents will relieve the operator from unjust criticism. (3) Where anatomic defects exist, the parents should be apprised of the facts and given the opportunities to have corrective treatment instituted by the orthodontist. (4) The best evidence of such defect is mal-coaptation of the teeth.

Dr. Henry Heiman, New York City, said: I should like to mention the fact that I have had these cases, and I think we have all had counter cases of a similar nature; and I believe it is a good thing to send them for orthodontic treatment. It usually requires from one to two years to correct the condition. We should all encourage the parents to go to the dentist. The point is well taken, that he should inform the parents of children of these defects.

Dr. Henry Dwight Chapin, New York City, said: In recent years, I have noticed the high Gothic arch in cases of adenoids. Many children are operated on for adenoids that need not be operated on at all, but where there is a very high Gothic arch, I think it is a very good thing. I consider the orthodontic treatment a good thing, and believe we ought to tell the parents about it and encourage them in this way. I saw a boy on Thursday, and he has the capacity to breathe now through either nostril separately; his mother has worked a very rapid evolution in that direction.

Dr. Wester Lester Carr, New York City, said: I think the subject that has been presented to us is a very important one. Now if the child falls first in the dentist's hands or, on the other hand, into those of a laryngologist, the rhinologist has something to say. Some of these cases seem to belong to either one or the other of these defects, nasal obstruction or imperfect teeth, and sometimes to both of these defects. With the growth and development of the child we have a widening of the throat at the base of the skull with the growth of the sphenoid bone. Now if we consider this we must allow that some correction will come with growth. It is a good point to have a cast made of the teeth of the child, and later to see the growth of the correction of the teeth; and when we consider the high Gothic arch, we must consider that there will be a physiological development, whatever the obstruction may be. In considering that one factor alone, that is, the adenoids and teeth alone, you will come to the conclusion that operation is
not always the greatest correction of this trouble; neither is the dentist's treatment nor the laryngological treatment, for the dentist will claim one thing and the laryngologist will claim another.

Dr. L. Emmett Holt, New York City, said: One cause for the lack of success after operation in some cases of adenoids has seemed to me to be the narrowing of the posterior pharynx by the prominence of the vertebral bodies. In children of defective cerebral development, I think it is well always to make an examination of the posterior pharynx. I have been amazed to find the small space existing between the pharynx and the vertebral bodies.

Dr. H. M. McClanahan, Omaha, Neb., said: I wrote and asked to write my paper on this subject, because my view has been severely criticised. I merely emphasized the point that if a child at six years of age has an operation for adenoids, you will not get any result; but if you can tell the parent that there are other abnormal conditions present besides adenoids, and that it is possible that operation might result in failure, this course would frequently save the physician from censure. I believe it will save us much criticism, and I consider it unwise to remove the adenoids in all cases of bad mouth breathing.

Parotitis Complicated With Meningitis. Dr. George N. Acker, Washington, D. C. Nervous trouble in the course of parotitis has not escaped the attention of older observers. Some writers have observed meningitis often in cases which have orchitis and are led to believe that such cases are more severe; yet in children, in whom orchitis rarely occurs, meningitis has been noted in a number of cases. Acute meningitis is usually described under three periods, namely: invasion, excitement, and depression. Such a description can not be given in the meningitis complicating mumps. The symptoms usually take a variable course, even when all of the symptoms are present. Nervous complications are tolerably frequent, due to the involvement of both cerebral and peripheral nerves. A meningeal reaction may present itself in connection with attacks of mumps coming on on the second or third day after the swelling of the parotids; although it some times supervenes later. The meningitis manifests itself by a rise in the temperature, headache, insomnia, and general discomfort. As a rule the
pulse does not increase in rapidity in proportion to the rise in temperature. In exceptional cases the symptoms are more severe, showing all the signs of typical meningitis. Leions of the nerves are sometimes consequent to meningitis or occur independent of it. Various authorities have endeavored to explain the nervous complications of mumps. In 1902, A. Monad practiced systematically lumbar puncture in infants attacked by parotitis and proved six out of eight times a lymphocytosis of the cerebrospinal fluid, as abundant as that in tuberculous meningitis. The same thing has been confirmed by Sicard, Chauffard, and Borden, in 1904; and a number of investigators since that time. All found a lymphocytosis in parotitis that showed many nervous symptoms. The fluid is clear with numerous lymphocytes, the same as in tuberculous meningitis. There is a small amount of albumin, but no fibrin. In the latter disease, the meninges are permeable to iodine, but not in the first. Lumbar puncture is useful not only in diagnosis, but also as a therapeutic measure; as the severe symptoms yield soon after its employment. The lymphocytosis lasts only a short time. That the diplococcus is the pathogenic agent in causing parotitis, there can be but little doubt. This organism has been isolated from the saliva and blood, but according to Depter, the bacteriological examination of the cerebrospinal fluid and of the meningeal exudate collected after death shows that it is sterile. The quick onset will differentiate this form of meningitis from tuberculous meningitis, which comes on slowly. It can be differentiated from cerebrospinal meningitis by the clear fluid and the absence of the meningococcus. The meningitis generally disappears rapidly. The motor paralysis can last a long time, but finally disappears. The deafness and atrophy appears to persist. They may be followed by the development of every alarming symptoms, and by permanent damage to important organs, or even end fatally.

Among the sequelae of the disease may be mentioned peripheral neuritis and paralysis of the extremities, lasting for months. The meningitis mumps, while not a common complication yet occur often enough to make one employ careful measures during the first two weeks of the disease. Mumps is an infection specific and general in its nature, localizing in the salivary glands, but affecting all the economy, the same as the eruptive fevers.
Dr. L. Emmett Holt, New York City, said: I think the nervous complication is very interesting because of its variety. It happened a year ago that I saw a child twelve years old,—the son of a physician,—who had had a moderately severe case of mumps. He was sent away to recuperate, to Atlantic City. After his arrival there, he began to become weak in the extremities, and a few days afterwards, the Dr. received word from the nurse that the boy was not walking very well. He at once telephoned to her to bring him home, and by the time the boy reached the city, he was not able to walk at all, and had to be carried. In the course of a few days, he developed a complete paralysis of the arms and legs. One physician diagnosed this as poliomyelitis. I was called in in consultation, and I diagnosed the case as multiple neuritis. There was a complete absence of reflexes of both of the extremities, but no temperature; and the bladder, kidneys and rectum were not involved. This condition lasted for two weeks, but at the end of six weeks, there was a complete recovery. The progress of the case carried out the diagnosis of multiple neuritis. In looking over the literature, I could find only a few cases reported. With the degree of toxemia so often present, it is surprising that we do not get more of these cases. Some of the cases supposed to be meningitis might be multiple neuritis. There was tenderness in this case over the nerve trunk. It was exactly like a case of diphtheritic paralysis.

Dr. Matthias Nicoll, Jr., New York City: I would like to ask Dr. Acker whether a culture was taken in the second case. I do not believe that a case of meningitis has been definitely established.

Dr. George N. Acker—Closing discussion—An examination has not been made on the second case, but it will be made. The pathologist has not completed his report, but a culture and microscopic examination will be made later on, and will be published with the paper.

Tumor of the Cerebellum (Case). Dr. Samuel S. Adams, Washington, D. C.: The patient was a colored boy, nine years of age, a Virginian. His family history was negative as to tuberculosis, cancer, syphilis and epilepsy. The mother was alcoholic, and the father was a "drinking man." The boy had been breast fed, and had had none of the diseases of infancy,
so far as could be learned. On October 1, 1912, he began to complain, and sat around most of the time, although he had previously been an active child. He ate little and was constipated, but had no fever. He lay in bed in a stuporous state most of the time, and could be aroused only with difficulty. He did not answer questions well, and fell asleep immediately. The skin was warm and dry, the right leg colder than the left; but there was no such difference in temperature in the upper extremities. There was a small scar on the forehead, but no skin eruption was noticeable. The breath was offensive. The stools were yellow or greenish. There was some flatulence and distension present, but the patient did not vomit. The nose was flattened, and the alae nasi were dilated. There was no dyspnœa. There were a few moist rales in the supra- and infra-clavicular regions, but the boy did not cough. The blood examination showed hemoglobin 100 per cent; leucocytes 10,-300, and red cell count 6,500,000. The knee reflex was absent on the right side, while on the left side it was slightly obtainable. Babinski’s sign was absent; ankle clonus was not obtainable, and the ulnar reflex was absent. Both lower extremities were weak, though not completely paralyzed; he could flex and extend both legs, but not the feet. The muscles in the lower extremities were slightly rigid, but the wasting was not noticeable. The muscles of the neck were rigid, and there was a torticollis.

As to the vision, ptosis was marked. The pupils were dilated and did not respond to artificial light, though he could distinguish light from darkness. The ophthalmoscope showed marked optic neuritis and almost choked disc. The right eye showed opacities, so that the fundus could not be seen. Hyperesthesia was marked in portions of the lower extremities. There was anesthetic points over the upper extremities and trunk. The examination of the spinal fluid, which was clear, showed that it contained no micro-organisms and no tubercle bacilli. Kernig’s sign was present. The patient developed urinary incontinency, and the stupor lasted four months. The boy was found to be a diphtheria carrier. He died on March 13.

Autopsy showed a condition of great emaciation and contracture of all of the skeletal muscles of the extremities. There was a large abscess in the right side of the head reaching down to the bone and through the periosteum. The heart and lungs were normal. The intestinal glands were infiltrated with what
seemed to be tubercles. The brain showed an increase of fluid in the ventricles and in the subdural space. There was a large thrombosis in the dural veins. The left lobe of the cerebellum was adherent to the base of the skull. The normal tissue had been destroyed by an inflammatory process, either syphilis or tuberculosis,—most likely the latter. The cerebellar tumor consisted of a tuberculous mass. There was a fungoid mass in the anterior lobe of the cerebellum, the pia arachnoid was thickened, fibrous and calcareous. The lymph nodes were an extensive tuberculous mass.

Dr. William Palmer Luas, Boston Mass.: I would like to ask Dr. Adams whether he tried the Wassermann test.

Dr. Samuel S. Adams—closing discussion—said: Yes, the child had the Wassermann test and had injections, but without any apparent effect; and then I put it on specific treatment.

Contribution to Our Knowledge of the Excretion of Phosphates In Infancy. Dr. J. H. Mason Knox, Jr., and Martha Tracy of Baltimore, Md., said: A number of early investigators have observed that the excretion of phosphates in the urine of young infants is very low; but such observations are made on single specimens of urine only, and are therefore of no great value. Keller has observed that the excretion of phosphates in the urine of young, normal breast-fed infants is very low or nil, gradually increasing with the age of the child, as does the nitrogen excretion. We noticed that a normal infant fed on cow's milk excreted considerably more phosphorus in the urine than does the breast fed infant, the increase of phosphorus secretion being greater than can be accounted for by the greater phosphorus content of the ingested food. Keller believed that inorganic phosphorus only is related to the kind and amount of food, but that the organic phosphorus of the urine is not so related. Moll, from his observation, drew the conclusion that when a breast-fed child is contented, gains steadily in weight, shows no appearance of illness, and excretes no phosphorus, or merely-traces, it is well; when an infant loses in weight, and in the urine excretes no phosphorus, or mere trace, it is hungry; when an infant loses weight, or fails to gain, and with apparently sufficient nourishment, excretes considerable phosphorus in the urine, it is sick. Moll believed that careful observations on the phosphorus excretion
serves as a useful check on dietetic procedures, and that a continued low excretion of phosphorus on increasing diet signifies that conditions are satisfactory: while an increased phosphorus excretion is a sign that digestive or nutritional disturbance is present. Wolff concluded that the phosphorus of the urine is derived from proteins, the source of the urinary nitrogen, and is therefore parallel to the nitrogen excretion. It is thus of different source and significance from the fecal phosphorus, which is derived from food phosphate, from the bones and from intestinal secretions.

The series of observations here reported, from the Thomas Wilson Sanitarium for Children, is of interest in that it adds considerably to the published data on this subject. Our object in making this study was to determine whether Moll's observations in regard to the clinical significance of phosphorus excretion in the urine of breast fed infants, would hold good for artificially fed children. Preliminary experiments with the collection of feces, as well as urine, at once made clear the fact that with the children suffering from more or less severe intestinal disturbances, the varying admixture of blood mucus and pus with the fecal material, would make the study of the stools, from the point of view of phosphorus excretion, of comparatively little value. We therefore confined ourselves to the study of the nitrogen and phosphorus excretion of the urine, in correlation with the phosphorus and nitrogen in the diet. For phosphorus determination, the uranium titration method was used throughout the urinalyses. In the cases in which the phosphorus and nitrogen of the urine were not parallel, an unusual dietetic reason is apparent. Our experience with many of our cases has impressed upon us the value of at least one twenty-four hour metabolism-bed observation on every child admitted to the hospital. Only in this way is accurate knowledge of the kidney function to be obtained. We are confident that in a number of instances a toxic condition is properly related to the kidney insufficiency, rather than to the intestinal condition. Such a routine practice as the metabolism bed procedure, in a large babies' hospital, demands a large staff of competent nursemaids; but the accurate diagnosis thus obtained warrants the care involved.

Experimental Scorbutus and the X-Ray Diagnosis of Scorbutus. By Fritz B. Talbot, M.D., Walter Dodd, M.D., Chandler
Foote, M.D., and Hugo O. Peterson, M.D., Boston, Mass. Dr. Talbot: Holst, von Furst and Frolich, Scandanavian investigators, have done innumerable experiments on guinea pigs, in an effort to determine the cause of scorbutus. They were able to produce typical macroscopic and microscopic lesions, which corresponded with scurvy and scorbutus in the human. Their work has been criticised, and other writers have said that these changes were due to inanition. They answered this criticism by causing inanition in guinea pigs without causing scurvy. Clinically the guinea pigs' teeth became loose, the gums swollen and reddened and they eventually had hemorrhages around the bones and in the muscles. They died in from four to seven weeks after the diet was instituted. The writers repeated this work, in order to obtain by the Roentgenogram the white line which is found in infantile scorbutus, and which the writers considered diagnostic of scurvy. This white line was first described by Frankel. It consists of a white line which runs transgressly across the lower end of the long bones. The line may be either straight or crooked. Pathologically this line corresponds with the line obtained by the X-ray and appears under the microscope as an area of increased density. The line cannot be obtained when there is complete union of the epiphysis and diaphysis. For this reason, it was obtained in only one or two of the younger guinea pigs. The very young guinea pigs that weighed under 300 grams, died before there was any evidence of scurvy. The writers also repeated the work of Hart in monkeys, and obtained changes which were pathologically very suggestive of scurvy. They also obtained a definite and typical white line at the diaphysseal junction.

When scurvy is complicated by rachitis, the end of the diaphysis is ragged and has a teased-out appearance, just as if it had been teased with a needle. There is also enlargement of the ends of the bone. This condition is typical of rickets, and represents a condition which has no connection with scurvy. The white line is typical of scurvy, but has no connection with rickets. The white line is probably the most important and earliest means of diagnosing scurvy.

Dr. Henry Heiman, New York City: I believe that the disease is due to the sterilized foods. We all know that scurvy is caused by the lack of fresh food. The consensus of opinion is that it is a disease of imperfect metabolism. In scurvy, the
condition is similar to that which exists in beriberi, which is caused by a diet of polished rice, there remaining on the rice the husks, and ingestion of the husks causing beriberi.

Dr. John Howland, Baltimore, M.D., said: How does this work? I presume it is caused by the same process in scurvy. There is a slow disappearance of the ordinary marrow, its place being taken by fine tissues, and I should imagine that it is caused by calcium in the tissues. I have one or two X-ray metastases of the joints in this disease.

Dr. William P. Northrup, New York City: I would like to ask Dr. Talbot whether he really feels in his innermost mind, and to his best judgment, that this is a reliable test, after having made experiments with controls in infants of equal age free from rickets, and whether he does not feel there is, in all these cases, rickets present, the rickets acting normally on the scurvy. Does he regard it a practical test in getting an early diagnostic view?

Dr. Fritz B. Talbot—Closing, said: The white line under the microscope takes on a very deep blue stain, which the Pathologist thinks very different from the blue stain in the normal bone, and which he thinks might represent intense density.

In answer to Dr. Howland, I would say that I was under the impression that beri-beri was due to lack of the substance found in the husks of the rice grain.

In answer to Dr. Talbot, I would say that I have yet to see white lines in hereditary lues, but I have accepted the authoritative statements on that subject, and believe that it does come in hereditary lues. Dr. ——— says so, and he has been doing X-ray work at the Massachusetts Hospital for a great many years. He was one of the first men to start it.

I would say that there seems to be some doubt as to my answer to Dr. Northrup. We believe it is a very important diagnostic sign of scurvy; but in some cases we do not have the clinical signs, as that first X-ray that I just sent around. That was of a child eight months old, without teeth, and having a swelling of the left leg, without fever and without reddening of the gums. The question came up as to whether it was a low grade reachitis osteomyelitis, or scorbutus. We were able to
make an immediate diagnosis by the X-ray, and in all our experience we have not made any mistakes. Rachitis and scorbutus are so often associated, that I was unable to get a plate with pure scorbutus. I have not seen such a plate without the reddening and roughening of the large bone. In that case I showed, we did get a white line; and the hemorrhage is gradually disappearing. We believe that this teasing out of the large bone is characteristic of scorbutus and characteristic of rickets. There are very many cases of rickets with this teasing.

**Therapeutic Measures In Cardiac Cases.** Dr. William Palmer Lucas, Boston, Mass.: Many of the therapeutic measures employed in the treatment of heart disease have been handed down or accepted simply from pharmacological experimentation, which is not always an accurate estimate of the clinical value of any therapeutic procedure or of any drug. Digitalis has been tested both experimentally and clinically, so there can be little doubt as to its value. Strychnine therapy shows conflicting evidence from the side of the pharmacologist and from that of the clinician. From the standpoint of the pharmacologist the effect of strychnine is on the sensory centers, not on the motor. Dr. Sollman says its action consists in facilitating the passage of the nervous impulses through sensory paths, so that very slight stimuli lead to exaggerated motor responses. Strychnine in small doses increases reflex excitability of the spinal cord, thus increasing the muscle tone, which brings about secondary results, such as increased metabolism, a tendency to rise in blood pressure and an increase in pulse rate, as well as an increase in temperature. Strychnine causes a stimulation followed by a depression of the medullary centers. Its effect on circulation in small therapeutic doses consists in a direct action on the vasomotor and vagus centers; as in, an indirect action by convulsions, respiratory movements, and asphyxia. The action on the heart is at first a stimulation; but this is only seen when the heart is directly perfused with a strong solution, and can not be considered as a cardiac stimulation in any therapeutic manner. Indirectly, strychnine may improve the circulation by improving the respiration or by altering the distribution of the blood, without affecting the general blood pressure. In large doses, it produces a marked effect on circulation and a marked rise in blood pressure, due
to central vasomotor stimulation aided by convulsions and asphyxia. Its effect on the centers of respiration is important. It removes the depression of the respiratory center. Clinical studies have resulted in very diversified findings as regards adults; but, thus far, the only observations on children are those of Cook.

The blood pressure during the first few months of life is from 70 to 75 m.m. of mercury; from six to twelve months, from 80 to 85. One below 60 is rare during the first year, except in cases where there was marked need for stimulation. During the second year, the blood pressure ranges from 80 to 90 m.m. of mercury; during the third year, from 90 to 100; and from three to ten years, 85 m.m. of mercury is moderately low, 75 is low, and 65 very low. Crying and restlessness raises the blood pressure from 5 to 10 m.m. The highest pressure occurs between four and seven o’clock P. M., and the lowest probably between three and seven A. M.

My experiments agreed with this. In my series of infants there were no cardiac cases. My charts show that strychnine is usually used in conjunction with digitalis or is followed very closely by digitalis. In another chart, it is seen that in one case there is a fall in the blood pressure after strychnine, the rise occurring after digitalis; while in another case, there is a rise of 10 m.m. after small doses of strychnine, and the child is not a cardiac case. I have watched the effect of strychnine in nine cases during the past few months, and all of these cases were the result of endocarditis occurring in the course of rheumatic fever infection. The children were given little or no medication during the first few days after admission to the hospital, and sometimes for longer periods, in order to observe the effects of rest. They were then given some one cardiac stimulant for a definite period,—sometimes digitalis, and sometimes strychnine. All the effects were carefully noted; and I find that strychnine is practically of no effect when given in the ordinary doses which are prescribed for children. It is only when doses amounting to one-tenth of a grain or more are given (either in one dose or in a quick succession of smaller doses) that any appreciable effect is noted; and then the effects appear within thirty minutes, and disappear within two hours. In four cases I have studied the effect of caffein-sodium benzoate as a stimulant. In ordinary doses of one-fourth to one-half a grain, hypodermatically or by the mouth, it produces no
apparent effect; only in doses of two or more grains given hypodermatically is there an appreciable effect; and then the effect is slight, and of short duration. I have concluded that strychnine and caffein, in the doses usually used for cardiac stimulation, are of no value. It is only when the larger maximum doses are used that we get any effect and the effect is usually of short duration. Whether this is a beneficial effect, is even questionable in children with cardiac involvement. It might be well, as D. Sollman has suggested that strychnine stimulation makes the heart work harder, that it should not be used as a cardiac stimulant. Its effect on respiration in conventional doses is of no value; in large doses it does not appear to slow respiration to a point where there are toxic symptoms of increased hypersensitiveness of the reflex arc or where the heart action becomes more rapid and the blood pressure fell.

Dr. J. C. Gittings, Philadelphia, Pa.: I would like to ask Dr. Lucas whether the figures for the blood pressure experiments have been secured or based on auscultatory or palpatory methods?

Dr. W. P. Lucas, Boston, Mass., said: They were based entirely upon palpatory methods in the hospital.

The following officers were elected for the ensuing year: President, Dr. S. McC. Hamill, Philadelphia; vice-president, Dr. Matthias Nicoll, New York City; secretary, Dr. S. S. Adams, Washington, D. C.

The place of meeting selected for next year was New London, Conn., and the time of meeting is to be May 26, 27 and 28, 1914.
RETROSPECT OF CURRENT PEDIATRIC LITERATURE.

Infectious Diseases.

Under the Charge of
ST. GEO. T. GRINNAN, M. D.
Associate Professor Pediatrics, Medical College of Virginia; Visiting Pediatrist, Memorial Hospital, Richmond, Va.

Meningitis of the Epidemic Type in Children Below Two Years of Age.—Dr. Henry Koplik, (Journal American Med. Ass. June 7, 1913), in discussing the subject of meningitis in young children, calls attention to the fact that below the age of two years children often present symptoms which are misleading and therefore the early diagnosis is not made in a number of cases.

Dr. Koplik says that the diagnosis is often masked, the physician not even considering meningitis and in no other way can he account for such a large number of infants being sent to the hospital quite late in the disease without any diagnosis having been made. Even in the hospital with the patient under direct observation it is not easy to come to a conclusion before lumbar puncture is made. The pneumonia cases which are complicated with meningitis are particularly difficult to diagnosis, as many cases of pneumonia are complicated with cerebral symptoms. Restlessness rigidity, retraction, of the head and fever which continues a long time past the initial phase of the disease are symptoms common in pneumonia which may or may not be complicated with meningitis.

In some cases the initial symptoms of fever are restless—but are not combined with any other symptoms such as rigidity. There may be a slight concomitant otitis to mislead us at first into feeling that we are dealing with a purulent ear instead of meningitis.

The remittance of intermittence of a high temperature with increasing restlessness and finally the appearance of the neck rigidity then shows us we have had a meningitis from the outset. Dr. Koplik says that many diseases of infancy even a simple intestinal disorder are so often combined with milder forms of cerebral symptoms that we can easily explain how a meningitis in younger children and infants is often overlooked. Kernigssing is often absent in many infants and is of little value in the diagnosis of meningitis.

It is rash to diagnosis meningitis when the outset of the disease has been ushered with convulsions or repeated convulsions. When an observation period is assumed valuable time is lost. The possibility of meningitis must not be lost sight of in the very young if the diagnosis of that disease is to be made early. A delay of a day in the diagnosis of meningitis in an infant may mean its loss, a delay of a day in older children is not so dangerous.

Dr. Koplik says that the stress of diagnosis must be placed on the persistence of cerebral symptoms, high fever and what is of greatest importance and scarcely appreciated at its full value Macerneris percussion note over the fronto parietal juncture as a sign of increasing fluid in the head.

The younger the child, the more difficult will it be to come to a definite conclusion as to the increase of fluid in the ventricles. In rachitic infants macereneris percussion rate over the fronto-parietal juncture is normal. A tense fontanelle is of some value. The mortality in young infants in cerebro-spinal meningitis is quite high.

In statistics prepared by Flexner of his serum cases of infants be-
low one year of age considering 125 cases treated by serum 63 recovered and 62 died.

Five infants injected in the first three days of the disease recovered and of 16 injected during the first week 12 or 15 per cent. recovered. The earlier the injection the more certain the therapeutic effect. Other reports give a mortality of 50 per cent. Dr. Koplik makes the following interesting statement regarding the service at Mount Sinai Hospital. "Fifteen patients below one year of age were treated with a mortality of 10 or 66 per cent. Of the fifteen patients 2 injected on the fifteenth day recovered, one injected on the seventeenth improved (Discharged) and one on the twenty-first day was cured, one on the twenty-ninth day was cured. None of the remaining came before the second week of the disease. Not all of the patients that came early recovered for one on the third and another on the fourth day of the disease died. Between the age of one and two years the mortality was less. Of 12 patients, 6 recovered. Some coming as late as the 29th day recovered while one patient coming on the second day of the disease died."

Difference of virulence of the various strains of meningococci plays a most important role.

In an attempt to save cases in which the subarachnoid space was closed off from the spinal comal and simple lumbar puncture was fruitless and the serum could not be introduced by this route, ventricular puncture has been resorted to, the ventricle being punctured on one or both sides, a certain amount of fluid withdrawn and the serum introduced.

This method was not successful and some better process has yet to be devised. The infants do not tolerate the operation.

Dr. Koplik has contributed a very valuable article on the treatment of meningitis by serum.

Extermination of Pediculi capitis (Arthur Whitfield: Lancet, Dec. 14, 1912).—The author gives a simple and rapid method for exterminating Pediculi capitis, particularly serviceable in the case of female children. The patient is laid on her back on the bed with the head over the edge, a basin placed on a chair underneath receiving the hair. A solution of carbolic acid (1:40) is then poured over the hair and sluiced back and forwards until the whole of the hair is thoroughly soaked. Particular attention must be given to the hair over the ears and at the nape of the neck. This sluicing is carried out for ten minutes; the hair is then drained, but not dried, tied up in a thick towel or piece of flannel after the manner of a turban, and allowed to remain like this for an hour. It can then be washed or allowed to dry. By this process every pediculus and every ovum is killed, and no relapse will take place unless exposed to fresh contagion. Impetiginous scabs, if present, may be dressed with a suitable ointment. With children of 5 years and over this treatment is perfectly safe, and the hair is in no way damaged.

Infant Feeding in Health and Disease

Under the Charge of

MAURICE OLIVER MACID, M. D.

Adjunct Pediatricist Beth David Hospital, New York City; Assistant Visiting Physician O. P. D. Pediatrics, Cornell University Medical College;
Formerly Physician in Charge of Infants' Milk Depot
of the New York Milk Committee, etc., etc.

Practical Points in the Management of Breast Feeding.—Eric Pritchard (Archives of Pediatrics, 1913, xxx, 164) deprecates the lack of attention and study given to breast feeding by pediatricists and ob-
sicians. He calls attention to the common mistakes made in the management of breast-feeding, especially during the first weeks of life. First and most serious of mistakes is to give the infant the usual dose of castor oil. The meconium supplied by nature acts as an intestinal lubricant and offers sufficient stimulus to the nerve centres regulating defecation. Castor oil overstimulates these nerve centres, dislocating their automatic functions. The delicate epithelial lining of the intestinal canal is injured by the oil, which sweeps out the meconium and tears off shreds of mucous membrane. Meconium is so important to the bowel that where it is deficient Pritchard replaces it by petroleum emulsion, the best substitute known to him. It is protective, lubricant and soothing. The incidence of thrush in infants is often due to loss of epithelium from cleansing the mouth of the infant with a clean rag to render it aseptic. Preserving the continuity of the epithelium will keep the mouth more healthy than cleansing with a linen rag. Another point of greatest importance is the management of the number of feedings. Pritchard claims better results from three or four-hour intervals between feedings than from the usual method of two-hour intervals. This gives a long interval of rest between feedings. If the quantity of breast milk is insufficient for this long interval it should be supplemented by a feeding of appropriate food immediately after the breast. Pritchard voices a distrust of the caloric method of infant feeding. The quantity of food should be estimated by a “test feed,” and if below the normal standard a supplementary feeding should be begun. A “test feed” consists of weighing an infant three hours after its last breast feeding, then putting it to the breast for a regular feeding, and weighing the child immediately afterward to determine the quantity of food taken. Infants too often do not obtain progressively larger quantities of milk as they grow older. The supply of breast milk will vary with the hygienic environment of the child. The “test feed” applied systematically shows that London children at least secure an amount of breast milk enormously below the usual accepted estimates. This suggests modifications in the method of breast feeding and of artificial feeding. An infant requires time to learn to digest a new food. New foods therefore should be given at first in very small amounts or in a predigested form.

The Physician and the Mentally Defective Child.—Dr. Isabelle T. Smart of New York presented this paper (Medical Record.) N. Y. State Med. Sety. She declared that the problem of the defective child was demanding the earnest consideration of the State legislators, sociologists, and educators, but that up to a very recent time the physician had been content to allow the layman to enter this field of pediatrics and to control practically all that had been or was being done for this type of children. It was contended that physicians did not know how to diagnose these cases. This was a grave accusation and reflected uncomfortably on the acumen of medical men and women. Dr. Smart considered more particularly the borderline cases that were more or less of a puzzle. These were the children that the general practitioner was apt to pass over lightly, telling the family to wait until the child was seven, or fourteen, or twenty-one years of age. A strong plea must be entered for the careful and painstaking examination and study of every unusual child presented to any physician. Too often these children received no attention unless they were suitable for institutional care. The outcome in many of these borderline cases depended upon proper nourishment and correction of physical defects, as a large number of these cases of mental abnormality were dependent upon physical defects. Several investigators from the Vineland Laboratory of Psychi- cal Research had obtained permission to examine immigrants at Ellis Island. Of 44 cases tested, 33 were selected by the medical inspector as probably mentally deficient. Of these 33, 15 proved to be mentally defective, while 18 were normal. Less than one-half had been cor-
rectly selected by the medical inspector, while seven-eighths were correctly chosen by the experts. There should be a thorough exhaustive examination by a scientifically trained physician in all these cases, by one who could get at causes and pathological conditions as well as the defects themselves. It was time for all physicians whose work was primarily with children to be up and doing so as to be able to meet the snap diagnoses of the untrained or partially trained so-called expert. Instead of lightly passing over the backward child he should be watched during all of his formative years; nervous manifestations should be noted; school progress and mental acumen measured; eyes, ears, throat secretions, heart, lungs, liver, all should come in for a share of attention. Special attention should be directed to hypersecretion and undersecretion, particularly with reference to the pituitary gland about which they know so little. The physician could not afford to be behind the times in this matter, but must keep abreast of the big social problems. It behooves them to make themselves wiser so that they could make an intelligent protest against laws that endangered the defective class and also normal children, for the normal child might later marry the unfit and so widen ad infinitum the vicious circle. It could be shown that it would be economy in the long run to provide State supervision for defective children.

Nerves and the Nursing Mother.—Dr. Conway A. Frost of Utica read this paper, N. Y. State Med. Scy. He said that the influence of the nervous system on the milk of nursing mothers had more far-reaching effects than was at first realized. Were the same time and energy expended in finding out the cause of the mother's derangement that was spent upon the adaptation of cow's milk, something of importance might be forthcoming. The average physician if called to an infant with digestive trouble, and if he could not immediately straighten it out, instead of trying to rectify the trouble with the mother's milk turned to his favorite textbook and read upon milk formulae, and the long struggle began. When something went wrong with the mother's milk, the average physician never looked further than to inquire whether there had been a dietetic error. He believed that they were on the wrong track. The farmer's boy was very careful in driving the cow home, not to irritate her for fear of spoiling the milk, but little care was taken of the nursing mother in this respect. He believed that a life devoid of nervous shocks was of far more importance for the well-being of the nursing mother than a diet devoid of minor indiscretions. Just how these nerve shocks interfere with the proper secretion of the proper food he did not know. Metabolism they knew was often inhibited, the whole digestive process upset, and the sweat glands inhibited or stimulated by emotion, and yet they utterly ignored the emotional effect on the sensitive milk glands of the breast. It has been his experience that the proteids had been increased during such nerve upsets, not that this was the only change, but it was the most palpable one; it had been his custom to increase the number of bottle feedings temporarily (if the child had been fed on mixed feedings), and also to try to get a higher fat and lower proteid in the mother's milk. The difficulty at times might originate in an increase in fats. If these changes occurred, why not others? They should strive to get some light on this subject, and that was his object in writing this paper.

Protein Milk as a Corrective of Digestive Disturbances.—By H. B. Wilcox, and M. C. Hill (Amer. Jour. of Diseases of Children, April, 1913).

Wilcox and Hill prepare their protein milk according to the following directions:

Buttermilk: Their buttermilk is made from a pasteurized
skimmed milk containing 1.75 per cent. fat. To one quart of this is added one ounce of buttermilk from some reliable dairy. This is allowed to stand for twelve hours at a temperature of 70 degrees to 80 Fahrenheit, is thoroughly beaten at intervals of two or three hours and then placed on ice until used. Each day's buttermilk is made from that of the preceding day, a smaller amount of stock being needed as time goes on. The amount of such stock used is determined by the degree of acidity desired.

Junket: To two quarts of pasteurized skimmed milk two Hansen junket tablets are added. After standing twenty minutes at 100 degrees F., the precipitated casein is strained through a fine sieve with a potato masher. This process of sieving is facilitated by adding buttermilk to the curd, and is continued until the curd has been thoroughly broken into fine flakes. One quart buttermilk, one quart water and one grain of saccharin to the quart are added to the curd and the whole thoroughly beaten to form a fine suspension. The only difficulty in the preparation lies in obtaining a fine, flocculent suspension of the curd, which depends chiefly on thorough sieving.

Protein milk is to be regarded as essentially a therapeutic agent, and is not suitable for a continued diet. It may be used at any age, but is better adapted to children over three months. Its indications are gastric or intestinal indigestion, acute infections or chronic incapacities, fermentation or putrefactions. It is of the greatest therapeutic efficiency when made from skim-milk. It is best used without preliminary starvation or purgation. The authors have found that it may be used with any plain milk mixture; and that children may be abruptly changed from it to a plain milk formula without danger. They suggest that it should be partially withdrawn with the first signs of digestive improvement; and should be replaced by a suitable milk formula as fast as the patient's tolerance will admit. Fresh milk and breast milk, when taken badly alone, are often well borne if combined with protein milk. Caloric values of the food may be more rapidly increased when some protein milk is given. The especial indication for protein milk is in acute intestinal infections.

Protein Metabolism in Infants Fed on Protein Milk.—By R. R. Hoobler (Amer. Jour. of Diseases of Children, April, 1913).

Hooker finds that the advantages of protein milk as a corrective for diarrheal conditions in infants depend upon the following facts, as determined by metabolic findings: (1) The protein intake is not increased sufficiently to be a detriment to the child, but on the other hand, frequently supplies only a sufficient amount to make up for the previous protein depletion. (2) When kept on this high protein intake for but a short period, the specific dynamic action of protein may be disregarded. (3) Even though the food be low in caloric value, and while there may be loss of weight, there is nevertheless sufficient protein retained to prevent waste of muscle tissue and provide for growth. (4) The changes in the stool accompanying protein milk feeding are due to (a) decrease in the total acidity in the stool, (b) decrease in the volatile acids, (c) decrease in the fatty acids (d) increase in the formation of soaps, (e) decrease in the amount of water lost through the feces, (f) there takes place a better retention of the mineral salts. (5) These chemical results may all occur within the space of three or four days, and confirm the clinical observation that in many cases protein milk may be discontinued at the end of a very short period.

The Biological Value of Infant Food.

Crookshank observes that it seems clear that the defective suckling power of many mothers is due, not merely to quantitative underfeeding, but to lack during pregnancy or after delivery, of biological galactagogues. It is not improbable that in a great deal even of the unboiled milk that is taken by mothers and by babies there is a hith-
erto unsuspected biological default. Orticoni and Lahache have recently called attention to the profound difference between the milk of a cow fed on natural food of good quality and that of one fed too much oil-cake composed largely of fermenting copra. And here is a double lesson. When we investigate the suitability of a cow's milk — a mother of a child, we must not only assay the proportion of — and of proteid and estimate the bacteriological purity, but the biological value as well.

It does not seem unreasonable to suggest that the solution of the problem of infant feeding is not a question of elementary chemistry, is not one for the bacteriologists, or the hospital physician or health officer, but lies in an acuter realization of the importance of the biological qualities, not merely of the food given to mother or child, but in the biological values of the food on which the cows and other animals are nurtured that supply the human aliment.

Since for practical purposes the milk of a good cow is most like that of a human mother, biologically if not chemically, it is to cow's milk that we must turn. But surely it should be axiomatic that any modification made of the milk supplied by the cow should involve as little interference as possible with what, until the chemists have made synthetic milk, we are bound to consider its vitalistic qualities.

And if some statistician will take the trouble to ascertain the relative fertility and maternal efficiency, from the lactiferous point of view, of mothers who were artificially fed themselves, he will find there is a definite correlation between artificial feeding in infancy and the function of various glands in later life.

Brady finds that the addition of malt and "polycarbohydrates" to the milk wherewith young babies are fed is highly advantageous, and gives him better results than any percentage method of feeding.

There are two malted foods that are pre-eminently useful: the first contains dried milk, with malt, some converted starch, and now, I believe, added citrates. The second is a member of a well-known series of foods, and, though professedly compounded for children over six months or so, has been found from experience to be perfectly suitable for much younger infants. It has not, however, the advantage possessed by the food first mentioned of being preparable at a pinch, and in time of illness or summer heat, without fresh cow's milk.

It is not a bad plan, too, for the first fortnight of life, to use the malted milk made with water alone in any case—a small teaspoonful of the powder to the ounce or more. Then when the meconium has been all cleared away and the body-cells have had ten days or so to accustom themselves to the malt and dried milk, fresh milk can be introduced gradually in increasing quantities, by weekly or fortnightly half-ounces till, at the end of six months, the child is taking nearly or quite undiluted fresh cow's milk, with a not very greatly increased quantum of the added powder.

Crookshank also advises the use of gelatine. A tiny infant, in times of sickness, will benefit by a few spoonfuls of plain jelly made at home from packet gelatine; and for those a little older the jelly into which good broth sets may be used. Since both these forms of jelly melt at a low temperature, they easily slip down the throat. But milk-jelly, highly valuable as it undoubtedly is, does not melt, and has to be swallowed almost as a solid. Any child who can digest cow's milk can, of course, digest both junket and milk-jelly. Nor should either milk or buttermilk be forgotten. Both have their values, and practical acquaintance with the details of whey-making will serve the practitioner in good stead. Incidentally, it may be pointed out that milk which will not make good junket (and, of course, good whey) is of indifferent biological value, and to be prohibited, whatever its bacteriological purity or chemical composition.—(Brit. Jour. of Child Dis. No. XI., 1912.)
Orthopedic Surgery

Under the Charge of

JAMES K. YOUNG, M. D.

Professor Orthopedic Surgery, Philadelphia Polyclinic; Clinical Professor Orthopedic Surgery, Women's Med. College, Philadelphia.

Assisted by

A. BRUCE GILL, M. D.

Assist. Surgeon to Widener Memorial Industrial Training School for Crippled Children, Philadelphia.

Diseases of Joints and Bone Marrow.—By Leonard W. Ely—Am. Jour. of Surg. May 1913. This article is the continuation of the one presented in the March number of the Am. Jour. of Surg. The author here discusses acute infectious arthritis. The micro-organisms that are capable of causing this disease are the pus cocci; the pneumococcus, the gonococcus, the typhoid bacillus, and probably the diplococcus (or streptococcus) rheumaticus of Poynton and Paine. The infective agents may gain access to a joint through a punctured wound, by means of compound dislocations and compound intra-articular fractures, by extension of the neighboring infective processes, and through the blood as a metastasis or in cases of general pyemia.

The disease may involve the synovia alone or it may extend to the marrow of the bones. The result of the inflammatory process varies according to the cause and to the treatment. There may be complete restoration to the normal condition, or fibrous or bony ankylosis, or complete disintegration of the joint.

Ely then discusses the symptomatology, prognosis, and treatment of the various forms of infective arthritis and closes his article with a discussion of typhoid spine.

Talipes Equinus Deformity.—By E. W. Hancock, Am. Jour. of Surg., May, 1913. The author corrects the condition of equinus in patients over eight years of age by a plastic operation upon the tendon-Achilles. He lengthens the tendon by the "inverse L" incision and then strengthens the tendon at the point of incision by quilting suture of kangaroo tendon lengthwise across the gaps in the lengthened tendon.

At the same time appropriate means are used to correct any accompanying valgus or varus or cavus.

The Short Spica in the Treatment of Hip-Joint Disease.—By Carl R. Keppler, Jour. of Med. Soc. of N. J., May, 1913. The author advocates the use of the Lorenz short spica cast in the treatment of tuberculosis of the hip-joint and considers it preferable to treatment with traction braces. He claims that abscess formation is rare and that malposition does not occur and that recovery is more rapid than when braces are employed.

On the Indications and Results of the Excision of Posterior Spinal Nerve Roots in Men—By Prof. Foerster, Surg., Gyn., and Obstetrics, May, 1913. The author reports the results obtained by operation upon the posterior spinal roots for various conditions. The first indication for excision is violent neuralgic pains that cannot be relieved by other means. The author collects and tabulates 44 cases operated upon with 6 deaths and 12 successful results. The cases prove that for the permanent relief of pain a large number of roots must be cut. The second indication is the visceral crises of tabes dorsalis. Sixty-four cases have been operated upon with 6 deaths.
and 56 successful results. The system of spinal roots carrying the sensory sympathetic nerve fibres of gastro-intestinal origin probably extends from the fifth or sixth cervical to the first or second lumbar. Therefore, the resection of the roots must be an extensive operation and should be undertaken only in severe cases that resist every other form of treatment. The third indication is spasticity and spastic paralysis due to disease of the cortico-spinal tracts, especially the pyramidal tract. The author has collected 159 cases with 14 deaths. In a large majority of these cases the results have been satisfactory and part, even excellent. The author then discusses the indications and contraindications of nerve resection for spasticity, and details of operation.

**Osteoplasty**—By Jno. B. Murphy, Surg., Gyn. and Obstetrics, May 1913. The author believes that it is now possible as a result of much experimental and clinical work to formulate the principles that lie at the basis of successful osteoplasty.

Transplantation periosteum, if osteoblasts remain adherent to it, may produce a permanent bone deposit in the same individual. In another individual of the same species, it rarely if ever produces permanent bone. Strips of periosteum left attached to bone at one end usually produce bone at the osteo-periosteal angle if osteoblasts are attached to it. Periosteum transplanted to another individual of the same species and attached at one end to freshened bone rarely ever produces bone even at the point of attachment.

Bone with its periosteum transplanted into soft tissues of the same individual is sooner or later absorbed, except in infants or very young children. When transplanted into another species it is always absorbed.

Bone, with or without periosteum, transplanted in the same individual and having contact with living bone at one or both ends always unites with the living bone and acts as a scaffolding for the reproduction of new bone if asepsis is maintained. The new bone grows to approximately the same size and shape as the original bone and may form an effective joint surface. The author believes that the transplanted bone itself is always absorbed after it has served its purpose of a mechanical support for the reproduction of new bone from the contacting living bone at one or both ends. In other words, the graft does not possess osteogenetic power, it only conducts the new bone formation. (Other observers differ from the author in respect to this point.)

When transplanted bone is to enter into the formation of a joint, the adjoining muscles should be sutured to it in their normal relations if normal functions of joint and limb are to be secured.

A bone covered at the ends by cartilage and on the sides by periosteum dies even if in contact with living bone.

The author outlines various indications for bone transplantation:
1. To correct deformities resulting from defective development.
2. To effect union in ununited fractures.
3. To replace bone destroyed by disease.
4. To replace parts of bones that have been destroyed in fractures.
5. To replace bone removed because of a non-malignant growth or because of an encapsulated malignant neoplasm.

The author usually takes his transplant from the crest of the tibia of the patient. The tibia soon is restored to its normal size and shape.

The various above mentioned indications for bone transplantation are then discussed in considerable detail and are illustrated by reports of numerous cases and skiagrams.
Subaortic Stenosis.—H. Thursfield and H. W. Scott (Brit. Jour. Child, Dis., 1913, x. 104) record the autopsy findings in such a case. A boy of fourteen years, while seated at work, fell from his seat and died soon after. Seven years before this he had a loud systolic murmur heard over the whole precordia with the point of maximum intensity in the second right intercostal space. This was then supposed to be due to patency of the ventricular septum. The right side of the heart was moderately dilated, the auricular wall somewhat thickened. The left auricle was greatly hypertrophied. The left ventricle was enormously hypertrophied and considerably dilated. The aortic orifice was narrowed by a fibrous ring situated on the septum ventriculorum immediately below the undefended space and extending over the posterior aspect of the mitral aortic cusp. The diameter of this ring at its widest was less than a quarter of an inch; its edges were smooth and free from vegetations. The aortic semilunar cusps were thickened and the two coronary cusps fused into one, so that the orifice was much narrowed. Immediately above the non-coronary cusp was a thin line of fibrous thickening in the wall of the sinus of Valsalva; and at the level of the ductus arteriosus, which was closed, was a transverse line of thickening, which appeared to have produced a slight narrowing of the lumen of the aorta. In the Hunterian Lectures of 1909 Keith mentions only four hearts with this lesion. It is obvious from the descriptions given that the condition is not incompatible with good general health, at any rate when it is present only in a slight degree, and so long as there is no infection of the abnormal structure or of the valve. It affords a probable explanation of no inconsiderable number of those cases of congenital heart disease, who, without cyanosis or clubbing of the fingers and with good general development, have a loud rough systolic murmur heard at its maximum down the sternum. Such cases are not very uncommon among London school-children, and are detected in the course of routine examination, not by reason of any failure of health.

The physical signs which we should expect to find in such a case are (i) evidence of an hypertrophy of the left ventricle; (ii) a loud systolic murmur with its maximum intensity in the second and third intercostal spaces on the right side, and conducted down the sternum; and (iii) a systolic thrill, most marked in that area. It is, however, remarkable that the thrill is recorded in only one of the four cases noted.

Rickets in the New-born.—M. Kassowitz (Jahrbuch, F. Kinderheil., Bd. xxvii, H. 3, 1913) contends that the same bony changes that are found in rachitis in children of two to three years of age may be present at birth, and that he has demonstrated the changes in the ends of the bone by histological examination of the bones taken from children soon after birth who have died from other causes. These changes are found in the bones of the skull and periosteal covering of the ribs. He made sections of the ribs in forty-eight perfectly developed new-born children. The histological changes found are described in detail. The author sums up by saying that they are so similar to those found in rachitic children of later age that we must suppose that they were caused in both cases by the same troubles. The congenital weakness of the sutures and fontanelles in the new-born are due to the same changes as in rickets of the older child. These changes differ from those found in cases of congenital syphilis to such an extent that the author contends that it is impossible to believe that they were the result of congenital syphilis. He claims the great value of these researches to the new-born child in the matter of diagnosis, which permits the proper treatment for rickets to be begun as soon as the diagnosis is made. Children born with thinned skulls and rachitic rosary should be at once put on antirachitic treatment so as to produce consolidation of the bones and closure of the skull at the normal time. Lime and phosphorus are indicated, with the best
of hygiene, plenty of fresh air, and a diet containing lime.

Coxa Vara.—J. W. Sever (Bost. Med. and Surg. Jour., 1913, clxviii, 495) says that rachitic coxa vara is a frequent and concomitant condition of bow legs and knock knees, but may exist independently. In the writer's series of cases it was observed to a greater degree in knock knees than in bow legs. The condition apparently requires no treatment. The correction of a coexisting condition of knock knees or bow legs may hasten the process of recovery from coxa vara. In all cases there is a tendency to spontaneous recovery and a restoration toward the normal angle of the neck of the femur without treatment, and with no cessation from use or weight bearing. There is probably very little or no permanent disability in the average case.

Changes in the Mineral Constituents of the Body in Rickets.—Curt Meyer (Jahrbuch F. Kinderheil., Jan., 1913) says the symptoms of rickets may begin as early as the fourth month. In breast-fed children who acquire rickets the disease occurs later than in the bottle-fed infant. Five infants served as material for research for the author. He finds a marked lack of balance in lime and phosphorus, while alkalies, chlorides, and magnesia were well retained. With almost normal retention of nitrogen the deficiency of phosphorus was great.

Epilepsy in Children.—Dr. J. Kendric Lloyd read this paper by invitation. Epilepsy is in more senses than one a disease of childhood. Thus, Gowers found that more than 25 per cent. of all cases began under the age of 10 years, and nearly 50 per cent. between the ages of 10 and 20 years. Spratling in 1392 cases found that 163 cases began in the first year of life, 38-5 per cent. in the first ten years, and 43-5 per cent. in the second decade—or 82 per cent. of all his cases began before the age of 20. Thus it happens that the distinction between infantile convulsions and epilepsy is somewhat arbitrary, and is based largely on the fact that the former are merely transient. But scientific grounds are lacking, because the infantile convulsion is in its form epileptic. In any one of the given cases it would have been impossible at the date of the first fit to say whether it was simply a case of infantile convulsion, or would prove to be one of essential epilepsy. Fere and others look upon all cases of infantile convulsions with suspicion, and believe that there is a neuropathic taint which is the predisposing cause, while the poison of the infectious diseases is merely an exciting cause. Certain it is that some cases of essential epilepsy begin in one of the infectious diseases, such as scarlatina or measles. Reflex epilepsy has rather gone out of fashion; and a microbial origin for epilepsy—such as we have in tetanus—has not been demonstrated. The internal secretions are now attracting much attention, but there is little ground for believing that the cause of epilepsy lies in any one of these secretions. Epilepsy has in a few instances been associated with disease of the thymus or the thyroid glands; and in cases of tumour of the pituitary body epileptic fits (especially of the uncinate type) have been observed, but the fits have not been shown to be an essential part of the picture. As regards surgical intervention, disappointment usually follows on operation. Focal epilepsy no longer has quite the significance it once had, for many cases of essential epilepsy have a focal character, and this is no indication as a rule for operation. We cannot cut epilepsy out of the brain cortex. In traumatic cases surgery may be indicated. In treatment there is not much that is new. The bromide treatment still holds good, and should be combined with the iodides. Hygienic control, with mental and moral discipline, is also unimportant in the case of children, even as much so as drugs. Salt free treatment, treatment with snake-venom, and with hypophyseal extract, have been advocated of late, but my experience with them is not sufficient to allow me to form a judgment.

CURRENT PEDIATRIC LITERATURE

In the routine examination of healthy children it is not uncommon to find a high temperature with nothing to account for it. This phenomenon is frequently interpreted as evidence of latent tuberculosis. Hamburger holds that in the absence of other disease a temperature of over 99.50, or a difference of 1 degree Fahrenheit between the morning and evening temperatures is proof positive of tuberculosis. There are many other explanations of obscure fever in children. Some have been subfebrile for many months, and the temperature has fallen to normal as soon as the tonsils were removed. A high rectal temperature has been attributed to the local action of the intestinal flora, or to nervousness during a consultation. Opinions as to the limits of normal temperatures in children vary considerably, and the estimations of the maximum normal temperatures range from 98.6 to 99.5 degrees.

The writer has measured the temperatures of 163 children in a hospital for nervous, scrofulous and convalescent children. She found no difference in the temperature between the ages of 5 and 16. The rectal temperature was found to be over 99.7 degrees in every case after walking or playing about in the afternoon. In 74 per cent. the temperature ranged between 100 degrees and 101 degrees. But after half-an-hour to an hour's rest, it fell to 99.3 degrees or less.

It was thought that children with the highest temperatures after exercise would prove to be tuberculous. A positive reaction to tuberculin was obtained in 113 of the 163. But no correlation between an unstable temperature and a positive reaction to tuberculin could be established. A relation between the atmospheric and the body temperature was anticipated, and it was found that in 91 out of 146 children the temperature of the body was unaffected by the atmospheric temperature, while the temperature of the remainder showed fluctuations corresponding with those of the atmospheric temperature. Children with a neuropathic taint were more affected by the atmospheric temperature than others. The rectal temperature after an hour's rest in bed in the evening was 99 degrees or less in 96.3 per cent., and as high as 99.3 degrees in only 3.7 per cent.
BOOK REVIEWS


A bibliography comprising 2164 references to published papers is of itself a striking testimony to a vast amount of labor spent on a complex and important subject; and yet, when all has been reviewed, one cannot on some aspects of the subject say that our knowledge is complete. The author has approached his subject in a broad and scientific spirit, dealing in his initial chapters with the subject in general; and then has proceeded to consider the various ductless glands in detail. Naturally the adrenals and thyroids come in for the most ample treatment, and much that is new is clearly brought to light in the author's pages. He shows the difference between the adrenal cortex and medulla, and that the former is probably more essential to the life of the individual while the medulla, or chromophile substance is the more physiologically active. A study of the comparative structures in lower organisms, and to become merged into one organ in higher forms of animal life. In dogs and several ordinary "laboratory" animals, Kohn has demonstrated the presence of "abdominal chromophile bodies" lying on the aorta, and having the essential structure of the adrenal medulla. The general pharmacodynamical effects of the medulla are strikingly similar to the effects of sympathetic stimulation, and anatomically from many of the invertebrates upwards the relation between chromophile substance and sympathetic is very intimate.

There is a vast amount of most interesting information throughout the volume, and no student of the subject can afford to be without this most complete and valuable work of reference. No point of importance or interest, clinical or experimental, fails to receive thorough consideration, and the author is to be congratulated on the production of a very satisfactory volume in which succinctness and clearness of expression are admirably blended.

Henley's Twentieth Century Book of Recipes, Formulas and Processes.—Edited by Gardner D. Hiscox, M. E. Price $3.00 Cloth Binding. $4 Half Morocco Binding 800 large octavo (6 x 9 1/2) pages. The Norman W. Henley Publishing company 132 Nassau street, New York, U. S. A.

This is the book everyone should have at his command who seeks practical, accurate knowledge and guidance in his every-day work, as no book has ever been published which so fully meets the multifarious requirements of the factory, the workshop, the office, and laboratory.

The work contains over 10,000 selected scientific, Chemical Technological and practical recipes and processes, including hundreds of so-called trade secrets for every business.

In preparing the work for so exacting and numerous a class of readers, the Editor has extended every effort to present only information which is practical, accurate and modern. Compiled as the formulas and recipes are, from sources absolutely authoritative, the book may well be regarded as the best thought and experience of reputable experts in every branch of technical achievement. Henley's book of receipts has been prepared to meet the demand for a popular repository of useful information without sacrificing anything that may be of value to the mechanical man. Thus both the layman, physician and specialist in any industry will find in the pages of this book the very data that may be required to meet a practical purpose.
Modern in its treatment of every subject that properly falls within its scope, the book may truthfully be said to present the very latest formulas to be found in the arts and industries and to retain those processes which long experience has proven worthy of a permanent record.

To present here even a limited number of subjects which find a place in this valuable work would be difficult. Suffice to say that in its pages will be found matter of intense interest and immeasurable practical value to the scientific amateur and to him who wishes to obtain a knowledge of the many processes used in arts, trades and manufactures, a knowledge which will render his pursuits more instructive and remunerative. Service as a reference book to the small and large manufacturer and supplying intelligent seekers with the information necessary to conduct a process, the work will be found of inestimable worth to the Metallurgist, the Photographer, the Perfumer, the Painter, the Manufacturer of Glues, Pastes, Cements and Mucilages, the Compounder of Alloys, the Cook, the Physician, the Druggist, the Electrician, the Brewer, the Engineer, the Foundryman, the Machinist, the Potter, the Tanner, the Confectioner, the Chiroprist, the Manicure, the Manufacturer of Chemical Novelties and Toilet Preparations, the Dyer, the Electroplater, the Enameler, the Engraver, the Provisioner, the Glass Worker, the Goldbeater, the Optician, the Farmer, the Dairyman, the Paper Maker, the Wood and Metal Worker, the Chandler and Soap Maker, the Veterinery Surgeon and the Technologist in general.

The Modern Treatment of Nervous and Mental Diseases.—By eminent American and British authors, Edited by William A. White, M.D., Superintendent of the Government Hospital for the Insane, Washington, D. C.; Professor of Nervous and Mental Diseases in the Georgetown University and in the George Washington University; Lecturer on Mental Diseases in the U. S. Army and U. S. Navy Medical School, Washington, D. C. and Smith Ely Jelliffe, A.M., M.D., Ph. D., Adjunct Professor of Diseases of the Mind and Nervous System in the Post-Graduate Medical School and Hospital; Visiting Neurologist to the City Hospital; Consulting Neurologist to the Manhattan State Hospital, New York, N. Y. Two octavo volumes, containing about 900 pages each, illustrated. Per volume, cloth, $6.00 net. Lea & Febiger, Publishers, Philadelphia and New York, 1913.

The publishers justly call attention to the fact that insanity and idiocy are increasing in some of the States faster than the population, and that a very large percentage of the feeble-minded men and women are not properly cared for and procreate mentally deficient children, and the great importance and timeliness of a work dealing with the problems involved in this situation becomes at once apparent.

While these volumes go fully into the most modern medical phases of the issues under discussion, they devote a large amount of space to the broader question of prophylaxis, which is obviously the department where the greatest and most far-reaching results can be attained. This work marks a new departure in giving full consideration to such subjects as Eugenics and Heredity in Nervous and Mental Diseases, Education, Sexual Problems, Educational Treatment of the Feeble-Minded, Delinquency and Crime, Immigration and the Mixture of Races and Alcoholism and the Alcoholic Psychoses. It then takes up the treatment of the various forms of nervous and mental diseases, and discusses them conjointly, for the authors and editors regard the nervous system "as inclusive of the mind." It exhibits throughout the most modern points of view, and the most advanced methods for handling these cases. It is of prime interest not only to all medical men, but also to hygienists, government, State and municipal officials, legislators, military men, social welfare workers, charity organizations, and all those who have to do with the betterment of these unfortunate classes.

The work lays special emphasis upon the psychical side of life as being worth quite as much consideration as the physical. It sets forth
the doctrines of nervous and mental hygiene, reconstructive factors in social organization as applied to human ills, and presents a broad front to pessimistic nihilism in therapeutics that has been too long current in these fields, because the doctors' eyes too long have remained closed or too tightly focussed on individual examples and results of human accidents.

Why the American Medical Association is Going Backward.—(A Critique of the Medical Trust). By G. Frank Lydston, M.D., Chicago, professor of genitourinary surgery and syphilology, medical department State University of Illinois; member of the American Medical Association. Price, ten cents. The Riverton Press, 626 South Clark street, Chicago.

In this 48-page pamphlet Dr. Lydston tells a great many facts which every doctor who is not a victim of lost manhood (speaking metaphorically) should know. He shows why, taking the figures given by the president of the A. M. A. last year at Atlantic City, there was good reason for the great falling off in membership (7,635) during the previous year, in spite of the $6,000 per annum "official organizer," the alleged 50 per cent commission to agent drummers, and repeated "personal" letters of solicitation from the great and only G. H. S. himself. The brochure is written in Dr. Lydston's best style, and there is not a dull page in it.


There is no dearth of literature in either English or foreign tongues, dealing with the clinical and therapeutic aspects of diseases of childhood. But so far as the reviewer knows there are few books which correlate the primary scientific facts of medicine as they apply especially to Pediatrics—in this work, the Hygiene of Infancy and Childhood and the Underlying factors of diseases, the author, Dr. A. Dingwall Fordyce has produced a splendid volume which the busy practitioner will welcome because here he will find condensed matter covering the various aspects of pediatric medicine which he would have to look up by wading through the larger text books on Pediatric Practice. In this volume he can find what he needs at a glance. To the young physician it is offered as a modern basis of clinical Pediatrics.

The author lays special stress upon the factor of heredity and environment, believing it advisable for the the physician to be supported by a knowledge of the present position of the various scientific branches of medicine as they apply to diseased conditions. The Pediatrician is expected to possess an intimate knowledge of the various factors affecting child life as a whole and this volume contains the essential factors requisite to the understanding of the subject.
THE TREATMENT OF ACUTE INTUSSUSCEPTION

When in a previously healthy infant we observe severe abdominal pains occurring in paroxysms, each paroxysm being attended by vomiting and more or less collapse, and when there are present tenesmus and mucous or bloody stools, we most probably have to deal with an acute intestinal intussusception. When, in addition to these symptoms, we can make out an elongated tumor on abdominal palpation, or can feel a protrusion on rectal examination, the diagnosis of this condition can be made with almost absolute certainty.

What should the general practitioner do to relieve this condition? If the symptoms are urgent, it will probably be impossible to reduce the intussusception by injections when the condition has lasted for many hours. If we try this method of treatment, the child had better be anesthetised and inverted, and hot salt solution injected into the colon under a pressure of only three or four feet. The amount the colon will hold differs very much in different cases. There is certainly some danger of rupturing the gut, even with slight hydrostatic pressure, if it be gangrenous. Whether it is gangrenous or not at the time of the injection, we can only judge by the acuteness and duration of the symptoms. The actual number of cases in which rupture of the intestine from hydrostatic pressure has occurred is very small, nevertheless some excellent authorities state that this method should never be employed in acute cases when the disease has lasted more than twelve hours. A great objection to it is that it is apt to lead the timid into placing too much confidence in it, and so cause most valuable time to be lost. When the situation of the obstruction is in the small intestine, reduction by hydrostatic pressure need not be attempted, as water will not pass the ileo-cecal valve, except in rare instances when it is congenitally deformed. Air is more
apt to be successful in these cases, and has been particularly advised here because it is more likely to pass the valve. Dr. Rotch has pointed out that, as the invaginated portion of the intestine is not on a line with the axis of the canal but at angle to it, hydrostatic pressure when persisted in, may tend to push the different layers of the intestine together, and so actually prevent reduction.

Intussusception must be regarded from the beginning as a surgical and not a medical affection. By some surgeons injection is only tried in very recent cases, and then only after every preparation has been made for laparotomy should the former method fail. Others do not attempt reduction by injection at all, but proceed at once to operate. Injection is only of value when it is easily successful, so that, like taxis in strangulated hernia, it should not be persisted in. Operation is far more likely to result favorably if done early, before adhesions have formed or gangrene occurred. Even the occasional operator is more likely to be successful early in the affection then if, beguiled by ultra-conservatism, he continues to try the injection treatment until inflammatory changes have occurred. Firm adhesions greatly increase the difficulties of the operation, while gangrene makes the prognosis almost hopeless.

Again, it is often impossible to tell with certainty whether the intussusception has been reduced when the injection method has been employed. It is highly probable that the so-called recurrence after reduction is only a recurrence of the symptoms, due to partial or complete failure to effect reduction. It would seem then that early operation is indicated both because the operation is much simpler and more likely to be successful at this time, as well as because it is the only method by which we can be absolutely certain that reduction has been accomplished. That young children stand abdominal operations badly is denied by excellent authorities and, even if true, should not deter operation in what is nearly always affection when reduction is not accomplished easily by injection or early surgical interference.

**EXPECTORATION IN THE STREETS**

Our readers will remember a recent article in Pediatrics, on typhoid fever, in which the author mentions a typhoid epidemic among the street children of a certain town. The in-
Infection was discovered to have been due to surface sewage, the uncleanly habits of the children readily causing their hands, playthings and food (the last often eaten upon the street) to become soiled. There can be little doubt that even in the relatively well-paved cities of Europe and America, many "mysterious" cases of diphtheria, whooping cough and the other infections can be attributed to the same general cause, infectious matter upon the sidewalks. The great source of this is of course, expectoration. In respect of tuberculosis it may be urged that sunlight quite promptly kills the germ. Not denying the accuracy of laboratory experiments upon this point, we must yet remember that in narrow streets, walled in by high buildings, there are many blocks of sidewalk where the sun never shines; moreover during the winter months in many parts of England and New England, and New York and other large cities fogs and clouds obscure the sun for days in succession, giving ample time for infectious matter to dry and be spread by the howling winds in every direction. It does not, therefore seem to be more than ordinarily rational that the movement to prohibit spitting in street-cars subways and other enclosed places used by the general public, should be followed by a campaign of education against useless spitting everywhere, indoors or out. While legislation is useless unless enforced, yet it it not beyond hope that the public may finally be brought to realize, not only the indecorum of such conduct, but its grave dangers. Consequently, it is with no little interest and pleasure that we read the following resolution (printed in a recent issue of the Progress Medical), which is shortly to be submitted to the Municipal Council of Paris: "Whereas, expectoration in the public highways is one of the most active agents in the propagation of tuberculosis and other contagious maladies; and whereas a reform in the matter of expectoration would greatly promote the cleanliness and decency of our streets and promenades: Resolved, That enameled signs, large enough to be legible from a distance, shall be placed in the principal streets of Paris, and in places of assemblage. The signs shall read as follows: "In the interests of the public, and to avoid the propagation of contagious diseases, it is requested not to spit upon the sidewalk."
ABNORMAL SELF-CONSCIOUSNESS IN CHILDREN

When the child’s appetite is good and his temperature normal, most physicians are apt to think him safe in his mother’s care and no longer dependent upon medical advice. Yet, if we counsel correct habits of diet, exercise and sleep we ought not to be considered as transgressing very far the legitimate bounds of medical practice if we essay occasionally a warning word about so bad a mental habit as self-consciousness. Such advice when given to a reasonable mother may be in the best sense prophylactic. Few parents can be gotten to believe, for example, that “forwardness,” disobedience and rude conduct in a young child are sometimes a grave sign of mental deficiency. Gowers has noted them as one of the earliest indications of abnormal cerebral function. Instead of the youngster’s being prompted to rudeness and impertinence and laughed at for his supposed precocity, such performances should be viewed with anxiety and should be gently but promptly suppressed. That small children should be “seen and not be heard” is a maxim based on an enlightened psychology. The abnormal self-consciousness that prompts such outbreaks can easily develop into an incurable egomania; The growing brain tissue is, as Horace so well said long ago, cereus in vitium fleci. Even where it is not congenital, a morbid feeling of self can be awakened and nourished with alarming ease and speed. No child should be encouraged to repeat poetry before his mother’s guests, or praised for his “pretty curls,” or even have his first trousers made too much of. The less he thinks of himself the better. He may be judiciously commended for his cleverness or good looks, or anything which he has not come by through self-forgetting endeavor. Both boys and girls should be taught to endure; to neglect trifling aches and pains, and seek for a remedy rather than cry over the trouble. Self-command and self-control are the noblest things a man can strive for, and he will never gain them unless he began learning in infancy to fix his thought and will upon objects outside himself. If such principles of education were more closely followed, hysteria and the “artistic temperament” might gradually disappear; and the hosts of insane people now walking at large, because their disorders of consciousness are not directly menacing to society, might be much diminished. Improper marriages are, of course, at the root of the evil. Bad
training is, however, almost as frequent a cause, and is one which in the present state of society is much more readily remediable. To Macbeth’s famous question, “Canst thou not minister to a mind diseased?” the modern physician should find a better and braver answer than that of the doctor in the play. “Therein the patient must minister unto himself.”

**LUMBAR INJECTION OF COCAINE.**

Recently several major operations have been performed under the partial anesthesia obtained by the injection of a solution of cocaine beneath the lumbar arachnoid. Lumbar puncture performed for diagnostic or therapeutic purposes is absolutely harmless, anesthesia of the pelvis and lower extremities is often produced by a somewhat similar technique. The patient is placed on his side, the legs being flexed on the thighs and the thighs in the pelvis in order to separate the laminae of the lumbar vertebrae. The space between the last lumbar vertebra and the sacrum is the preferred region but that between the fourth and fifth lumbar answers just as well. A small trocar or stiff needle about 10 cm. long is used. The instrument, field of operation, and hands of the operator are thoroughly cleansed; then the needle is boldly directed toward the median line, and the solution is slowly injected. In the adult it generally requires 1 cg. of cocaine in solution in one or more contigrams of water to produce anesthesia. If the operation is prolonged, the injection may be repeated. Anesthesia is produced in from five to ten minutes. While headache, nausea, and vomiting which are of short duration sometimes occur, no cardiac or respiratory symptoms have as yet been noted.
PROGRESS IN ORTHOPEDIC SURGERY

BY JAMES K. YOUNG, M.D.,

Associate Prof. Ortaopedic Surgery University of Penna., Prof. Ortho-
pedic Surgery Philadelphia Polyclinic, Clinical Prof. Ortho-
pedic Surgery Women's Medical College, Philadelphia.

During the past year great advancements have been made and achievements wrought in the department of orthopedic surgery. Chief among these may be tabulated the following:

1. Roentenology, especially its diagnostic application in orthopedic affections.
2. The advances made in the study of arthritis deformens.
3. In Serum Therapy especially in relation to tuberculosis and other infectious diseases.
4. Forceble correction of rotary lateral curvature.
5. Sacro-iliae displacement and deformity of sacro-lumbar region in relation to sciatica and plainful back.
7. Pott's disease.
8. Ankylosus.

1. Doentgenology. Improved equipment and the introduction of illuminating screens have enhanced the value of this study. Instantaneous photographs of living parts are now possible. The definition of the plates is improved and through a series of plates one is enabled to reproduce the actual functions of the organs; heart, lungs, etc. The possibility of taking the vertebral view, through the lateral or posterio-lateral position has been accomplished and through the agency of the diaphragm compressor excellent pictures of the sacro-iliae articulations and intervertebral conditions may be made. Roentgenology also serves to aid the orthopedic surgeon in the

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Read before the Association of the Teachers of the Diseases of Children, Minneapolis June 1913.
discovery of supernumerary bases, the chronological sequence of the osseous centres etc. Thus, the supernumerary bone in the senitendinosis muscle has been mistaken for a foreign body in the knee. Rotch has shown the development of the centres of the wrist in young children and its relation to the working efficiency of youth.

2. Arthritis Deformans. This is a disease more common in the female sex; 50 to 80 per cent. occurring in women, while girls beyond the age of twelve are by no means exempt from it. Most cases of arthritis deformans are reactive or secondary. I group the causes as:

a. Traumatic.
b. Pathological.
c. Metabolic or Toxic.

The prodromal symptoms are thus alliteratively tabulated by Spender,

1. Pulse.
2. Pigmentation.
3. Perspiration.

(a) Etologically, skeletal injuries play a major role especially where the initial signs and symptoms become manifest, the result of fractures and dislocations as well as repeated injuries to the joints.

(b) Pathological conditions of the internal organs, as in deficient nutrition from heart and kidney disease; in neuropathic conditions etc. The pathogenic causes are ascribed to the presence of pathogenic organisms non-pyrogenic, but some of which are due to their elaborations in the form of bacterins; toxins or endotoxins. The microbic theory finds support in the occurrence of the disease following in the wake of scarlet fever, typhoid fever, measles, furuncotosis, pyorrhea alveolavavis (Rigg's disease), etc.

(c) The metabolic or toxic are neither pathological or microbic, but secondary to some changes in the normal metabolism as in auto-intoxications of intestinal origin or in the tox-aemias of chronic pulmonary affections.

In 1899 Dr. G. F. Still (Med. Chur. Trans.) described a peculiar disease—"Still's Disease", found in infants and young children; which is arthritis deformans, plus certain special symptoms. The etiology is obscure. The onset may be abrupt or gradual and is usual before the second dentition. The disease
is polyarticular, movement produces great pain, there is
copious sweating, slight elevation of temperature, bodily
growth may be delayed or arrested. The spleen and glands
are enlarged, especially the lymphatics in association with the
affected articulation which are painful and visible. Though
not necessarily fatal, the disease often leaves its victim a hope-
less cripple.

3. The true value of vaccine therapy in tuberculous bone
disease and in other infections is an undecided question. For,
if improvement follows, how much of this improvement is due
to vaccine, and how much to the general treatment? What
cases should be selected? What is the dosage? It is asserted
that those cases showing neither much improvement or recess-
ion under surgery, are the most adaptable for its employment.
The dosage, is always a perplexing problem, too small a dose
is valueless and too large a dose may be productive of much
harm. Tuberculin must be looked upon as an auxilliary to
general medical measures and is only safe in the hands of those
acustomed to its use.

4. Sacro-iliac Displacement. Ankylosis between the last
lumbar vertebra and the sacro-iliac articulation, as well as im-
portant changes in the transverse processes in the last lumbar
vertebra accounts for the etiology of many weak and pain-
ful backs (Goldthwaite). There may be a flat and a broad
transverse process in the fifth lumbar vertebra, and the great
enlargement in some instances of one or both of these processes
by which they articulate with the iliac bones and interfere with
the lateral movements of the spine.

Of 150 pelves in the Wistar Museum of the University of
Pennsylvania and 30 in the Woman's Medical College, I found
a complete ankylosis of the 4th, and 5th lumbar vertebrae with
the sacrum, an ankylosis of the left sacro-artivulations; and an-
kylosis of both sacro-articulations; a hypertrophied process of
the 5th lumbar vertebra, as well as a bilateral enlargement of
the processes of the 5th lobar vertebra. The intimate relation of
the lumbo-sacral cord to this articulation accounts for many
cases of obscure sciatica and other nerve affections, that here-
tofore have baffled the diagnostic skill of the neurologist.

4. Forcible Correction of rotary Lateral Curvature. This
method was devised and practised by E. G. Abbott. The de-
formity is produced by a simultaneous flexion and bending of
the spine with elevation of the shoulder on the convex side.
The patient is put on his back in a hammock swung from a frame, heavy felt pads are placed over the sacrum, crests of the ilia, the angles of the ribs on the convex side and over the prominent ribs in front. A large felt roll is also placed over the concave side to be removed through the large window ear here after the jacket is applied. The lower limbs are flexed to overcome lordosis and the foot of the frame is raised. Under the depressed shoulder passes a muslin bandage, drawing it upward and forward, a second passes over the prominent ribs and draws them laterally and downward, a third makes counter-pressure across the pelvis, and a fourth fastened to the frame on the convex side passes over the prominent ribs low down and has a weight of 25 to 50 pounds attached to its end. In this corrected position plaster applied. Over-correction is secured in about three weeks, but fixation must be obtained for some months longer. After the removal of the jacket the spine is maintained in the over-corrected position with a light brace and is subsequently returned to its normal position by massage, exercise and adjustment of the brace.

6. Torticollis. The sterno-cleido-mastoid muscle is made up of five fasiculi varying often in structure, thickness, etc. Many of the great vessels of the neck lie in close promimity to the muscle. The cleido-occipital portion is more often involved in traumatic birth cases than other parts of the muscle, no doubt due to the fact that this part of the muscle is much weaker than the sternal end. Imake a vertical incision directly over the part to be divided, these will vary from one to three, according to the extent of the contractures. If the sternal end be involved, this should first be divided, but if the clavicular portion seems most affected, the incision should first be made over this, as it is well known that incision of this portion alone may be sufficient. I believe that division of the clavicular portion by the open method is the most important part of the tech-nic. A vertical incision 2 or 3 inches long is made over this portion, the tendon is lifted on a grooved director and divided. The separation of the tendon from the clavicle is a matter of import because the internal jugular vein is separated only from the tendon by the deep cervical fascia. The incision should be closed with a continuous catgut suture. After the contracted tissues have been divided, the neck should be stretched and over-corrected, the head should be held in fixed position for three weeks in a plaster-of-Paris dressing. Subsequently the
neck should be massaged, gymnastic exercises indulged in, and corrective measures, if lateral curvature has occurred. The best time for the operation is about the age of 5 to 12 years.

7. Potts Disease. Since Pott's time the mechanical treatment of spondylitis has been to fix the spine, support the superincumbent body-weight, to remove pressure from the body of the vertebra and throw the weight on the posterior portion of the vertebra by posterior leverage. These objects have been partly secured by plaster casts and various braces. Thus a long time is required for cure, and the annoyance of casts etc. To shorten the time to effect a cure and to eliminate external mechanical appliances, various investigators and students of the subject have urged interesting methods of treatment, starting with Hadra in 1891. We need but note that in 1902 Hibbs produced fusion of the spinous processes by dissecting off the periosteum from the spinous processes and the laminae and breaking the spinous processes at the base and turning them down against the adjacent lower vertebra and then covering them again with periosteum. This operation is successful and lessens the posterior prominence in kyphosis. About the same time Albee reported a method of fixing diseased vertebra together and to the adjacent sound vertebra by splitting the spinous processes and implanting in the wedge-line spaces a strip of bone taken from the crest of the tibia. This graft grows solidly into place and forms a layer of bone between the spinous processes.

8. Ankylosis. The latest study in ankylosis that has claimed attention is Taylor's method of injecting between the denuded ends of bones of a combination of 1 or 2 parts of yellow wax to 6 parts of lanoline. This foreign substance is gradually absorbed, but not until the denuded bone has healed and a new joint formed. The articulating bones should be shaped at the time of operation to resemble the contour of a normal joint.

9. Infantile Spinal Palsy: In this disease the transplantation of tendons from one portion of the limb to the other often extending many inches may be accomplished, the extension of tendons through the use of silk strands and the making of new ligaments of silk have been greatly advanced. Thus, the femoral biceps can be transplanted across the front of the thigh and inserted into the tubercle of the tibia. The point which particularly concerns the orthopedic surgeon is the at-
tachments of tendons, whether into another tendon or into the periosteum or into the bone itself. The advantages of the periosteal transplantation are the firm contract and the more certain hold of the bone, but in certain localities, tendon to tendon method may still be employed. The after treatment consists in rest, protection of the part for three months and the subsequent use of apparatus.

10. Psoas Abscess. These should be opened early, before they attain any considerable size. Diagnosis should be confirmed with the x-rays. I employ the modified Treves' operation. An incision 2½ inches long over the spinous processes and parallel with the spine, and midway between the last rib and crest of the ilium. The aponeurosis of the erector spinal muscle is divided along its outer border and the muscle pushed inward with a retractor, the anterior layer of the sheath covering the erector spinae muscle is divided exposing the quadratus lumborum muscle. At the point of the transverse process of the 3rd lumbar vertebra, the fibres of the latter muscle are separated, a blunt dissector introduced external to the above transverse process and is pushed in until it reaches the abscess cavity. The opening is enlarged, irrigated with boric acid solution and dried with gauze. A gauze drain is left in the cavity for 10 days, after which time an early closure is to be aimed at.

A PLEA FOR MORE INTEREST IN PEDIATRICS*

BY CLARENCE A. RHODES, A.B., M.D.,
Atlanta, Ga.


It is a well known fact that no branch of medicine has received and is receiving today so little attention by the profession of the South as that of Pediatrics. Should this be the case?

Is there a single branch of medicine of more importance, or one more productive of accomplishing so much good for humanity as Pediatrics?

Read before The Georgia State Medical Association at Savannah, Georgia, April 17th, 1913.
No single period of life is so fatal as infancy; no disease ever had so many victims, nothing probably causes more physical unfitness and wretchedness than the effects of infantile diseases in those who survive. Nothing is more appealing than the helpless baby, and nothing more important to the nation than this man in the making.

It is no secret that our general practitioners and many of our so-called specialists are deplorably ignorant of pediatrics, especially of that most important part of it the management of the young baby, and most of our schools offer at present no great opportunity to learn it.

The infant should receive our first attention, as it is only by taking care of these that the state and nation will develop into a mental and physical manhood. A nation’s wealth consists in the number, health and intelligence of its people; and the only way to live up to this standard is to pay more attention to the health of the infants and children of the nation.

How often have you heard the expression from the lips of the family physician, “I don’t know anything about babies and have not the time to bother with them, let the nurse or grand-mother take care of them, they know more about them than I do.” Is not this a sad state of affairs? But nevertheless it is true.

The care of its infants may be taken as the index of the civilization of any state or community. Infant mortality as high as it is today is a blot on our civilization, and why don’t we the physicians of the Empire State of the South awaken to the responsibilities that rests upon our shoulders; and get busy and at least try to make some effort to better conditions along pediatric lines in our state.

High infant mortality and a decreasing birth rate should be of vital importance to us all. Still we have no societies or organizations for the study of these problems; besides very little interest is manifested in these subjects by those in our profession who should be up and doing. Other states and sections of our country are making great strides along lines solving these problems, and it behooves us the profession of Georgia to arouse from our lethargy and form a State Pediatric Society or a Pediatric Section of the State Medical Association, and by this means bring these subjects which have such a great scien-
tific, educational and economic value to every state and nation before the profession and public at large.

The Child’s Hygiene and Welfare Movements should stir us to greater efforts and societies of this kind should be organized in our cities and statistics gathered and published for the public enlightenment on these subjects. The laity are vastly interested in these subjects when their importance are brought to their attention and as a rule have responded nobly with their substance to increase the efficiency of this noble work.

The Pure Milk Movement should be of vital interest to us all. But is it? Is there a city in Georgia whose milk supply is perfectly safe for infant feeding, or a single dairy furnishing milk to a city in our state whose supply is perfectly safe for infant feeding, one whose cows have been tested by a competent veterinarian and are free from tuberculosis wherein lies a menace to the lives of all artificially fed children; or whose employees are inspected by a competent physician and are found to be free from contagious and infectious diseases? I venture to say there is not one. Not even Atlanta, the metropolis of the south can boast of certified milk. However I am glad to say that a movement is now on foot whereby this will be accomplished in the near future. It is hoped that other cities in our state will catch this certified milk fever and help to spread the gospel of pure milk over our land.

Vital statistics should be of much concern to the profession, the registration of births and deaths are the prime factors in any medical reform of marked advance. No branch of medicine feels the importance of vital statistics so much as pediatrics.

According to some authoritites, 17 per cent. of infant deaths are caused by congenital troubles. Is it not worth while to study these troubles and obviate them. The baby’s life and pathology begins nine months before its birth. This is largely pediatric work, but are we making any effort to bear the burden?

The epileptics of our state have no suitable institution for their care or treatment; and the insane are treated as criminals until they are committed to the asylum. Other states and societies are facing these problems and solving them, and why not we the profession of Georgia lend our aid and talents in the development of this work?
Think of it, $27,000.00 appropriated last year by our legislature for State Board of Health work, and $21,000.00 appropriated for the manufacturing and distributing hog cholera serum, and for protection of live stock from contagious and infectious diseases and tick eradication. The people of Georgia received only $6,000.00 more attention than the hogs and cattle. In our state the calves and pigs are looked after by our legislature, but the babies will have to wait.

To remedy these conditions the profession must be aroused to the importance and scope of pediatrics and the public educated. Our medical schools and colleges must get rid of our self-styled pediatrists and replace them with men who have made a special study of this branch of medicine; men who are progressive, men who are equipped and know the importance of investigation and research; men who have spent years in preliminary training in hospitals under the directions and enthusiasm of our masters of pediatrics; men who are teachers and capable of instilling the importance and needs of their specialty into the minds and hearts of their students; men who are leaders of men and are interested in all movements to uplift mankind; broad minded and altruistic men.

Not until our medical colleges in the south realize the important position of pediatrics, will there be the progress in this field of medicine that there should be; for the doctors have become the educators of the masses and unless they have been taught to face and teach pediatric problems as they present themselves today, the educational work which should be ours to do will fall upon the shoulders of future generations.

The general practitioner should encourage specialization in this branch of medicine by referring more cases to the pediatricist and thus help him in this new field of medical science.

It is an undeniable fact that the beginner in any field of medicine has a hard struggle to get established until the profession has been educated to its importance, and are willing to refer work to the socialistic in that particular field.

The pediatricist desires to treat only the infants and children and not the adults, so don't be afraid of his stealing the whole family when he is called in, as I once heard a general practitioner accuse a so-called pediatricist of doing. We are not all fortunate enough to be endowed with large bank accounts; so until the general practitioner is willing to contribute his share to the pediatricist, the pediatricist is forced to
digress into other fields of medicine in order to make ends meet while laboring to become established in his specialty.

This is the day of specialties and all that the pediatrician asks is to be recognized as such by the profession and treated accordingly.

602-3-4 Atlanta Nat. Bank Bldg.

A PLEA FOR THE MEDICAL INSPECTION OF OUR*
COUNTRY SCHOOLS*

L. C. ALLEN, M.D.,
Hoschton, Georgia

The object of all law, in its final analysis, is to make people happy. But it matters not what laws are passed, nor what party is in power, we shall never be a happy people until we are a well people. This question of the health of the children lies at the foundation of our prosperity and happiness as a nation. The state will suffer or proper according as the children of the state are brought up. The children now among us will be the future citizens of our state. Neglect of the future citizens in the making means hope for the state's improvement blighted. And in the problems relating to health and sanitation the public look to the medical profession for guidance and leadership.

At present our educational system is incomplete, and will ever remain one-sided until the doctor is consulted, and his expert knowledge made use of in the education of our boys and girls. What is the object of education? Evidently it is to fit the child for the duties of life; to develop and train its physical, mental and moral potentialities so that it will be able to fight its own battles, to successfully prosecute whatever calling or business it may undertake for its life work. Now, to succeed in life it is certainly as necessary that a person be able and strong physically as it is that his mind be developed. But our educators seem not to have come yet to a full realization of this important and obvious truth.

Shall we have medical inspection of our country schools? Is such a law desirable and practicable (in Georgia) at the present time?

It has become a fixed policy, in the United States, that

*Read before the Savannah 1913 Meeting Medical Association of Georgia.
every child shall have the opportunity of an elementary education at the expense of the tax-payers. Every person who pays taxes, whether he has children of his own or not, contributes to the educational fund. Whenever you go to a case of obstetries, and a living child is born, it matters not how poor the parents, you may truthfully say to that child this: "There is at least one thing, baby, that you have inherited—you possess right now the legal claim to an education, for this is the common birthright of every American child." Now, if the State is going to spend the money of the tax-payers for the purpose of educating the children of the State it is incumbent upon the State to see to it that the tax-payers get the best possible returns for their money. Do our present methods accomplish this? I think not. And I think our educational methods should be radically changed. The development of a sound body should be the first object of education. "As it is to-day," to quote an able writer, "the brain is trained in mental gymnasties, while the body is left to fall into decay."

It is evident that it will take a defective child longer to complete a given course in school than it will a normal one. The longer a child is kept in school the more expense it is to the State, as well as to the parents. Hence from an economical standpoint, it would be better policy for the State to attend to the physical condition of the child. Besides, a healthy man makes a useful citizen, a producer and a tax-payer, while an invalid is often a burden to the community. And there can be no doubt whatever but that by correcting the physical defects found among our school children to-day the State would be relieved of the burden of looking after many future criminals. Then again, the work of the school must be adapted to the average pupil, and when a large part of the children of a school are defective, the remaining normal ones are held back in their studies. Therefore every child in the school-room is impeded because of the defects of a portion of the pupils.

The growing period of any individual's life is an exceedingly important period in that person's life. If, at this time, the child's growth and development be retarded by unsanitary surroundings, improper habits, or physical defects, it will not attain that full measure of physical and intellectual development to which it is justly entitled. And to this point I desire to call special attention. If a child be stunted in its growth by abnormal physical conditions, or unhealthy-
environment, it will, at maturity, enter upon life's duties handicapped by lack of physical stamina and intellectual ability. Such a person will make a journey through life a weakling, unable to complete successfully in the race for material success, or for honors and distinction in the higher spheres of usefulness open to every individual, with those who have had better care and training during their formative period of life. I consider this a serious consideration. It is a regrettable fact and exceedingly regrettable fact, that very much of the mental and physical inefficiency seen on every hand today among adult men and women could have been prevented by intelligent care during childhood.

We hear much said these days about "conservation." In my opinion, a sufficient number of competent school physicians to do the work properly, making inspection of our schools all over Georgia, would contribute more to the conversation of our resources than any other conservative factor under the sun.

The majority of parents never realize that child ever needs a physician unless the child is "sick"—in fact until it defective children there in your community who really and seriously need a physician, but about whom you have not been consulted? Here is where the useful-ably dirty, uncomfortable in cold weather, and infested with ness of the school physician comes into play. A child may have half a dozen physical defects, more or less serious in character, yet unless its condition become so serious as to necessitate it remaining in the house or possibly in bed, a physician is never thought of. If it be able to trot around it is sent to school, altho it may have diseased tonsils, nasal obstruction, defective hearing, imperfect vision, hookworm, chronic bronchial catarrh or incipient consumption. Too often parents think their children will "outgrow" these defects, which they consider of little importance.

The medical inspection of schools is a modern institution. The movement was begun in Europe about 80 years ago. It has become world-wide, being now found on all the continents of earth. It was not begun in this country until so late as the year 1894, when the movement was first started in Boston. It was soon taken up by Chicago, New York, Philadelphia, and other large cities. Seven states of our Union now have man-
datory laws for medical inspection; ten states have permissive laws.

Laws of this kind should provide for the frequent inspection of all school children to discover and exclude all contagious diseases. The laws should provide for the complete physical examination of all the children to detect any disease or physical abnormality which may hinder the child in the prosecution of its school duties, or prevent it from getting the full benefit of the school privilege. The school inspector should also give advice regarding the work or play of any defective child as needed. It is also important that teachers and janitors be examined. It is a fact that there are consumptive teachers at work in some of the public schools of Georgia to-day. The school physician should make regular inspection of grounds, buildings, drinking water, privies, &c., and advise the school authorities regarding the sanitary conditions of the same. Practically all the privies for our country schools are in a disgraceful condition—poorly built, unspeakably dirty, unconfortable in cold weather, and infested with swarms of flies in the summer time. Every public school in Georgia should have a sanitary privy, built at the public expense, plans furnished by the State Board of Health.

As far as I have been able to learn, the cities and states that have taken up this work have been pleased with results obtained. In my part of the country the value of medical inspection is not generally realized. In fact, many of our most prominent citizens have not heard of it yet, and many of those have looked upon the movement with suspicion, regarding it as an unnecessary expense. To my way of thinking a teacher who understands the education of the physical body is fully as necessary as one who understands the training of the mind. Medical inspection in not a luxury, but a downright necessity.

And the practice of allowing men and women who are affected with communicable diseases to teach in our public schools should no longer be suffered.

It is contended by some that while medical inspection is all right for cities, that it is impracticable and unnecessary in our rural schools, and that the expense would be out of proportion to the good accomplished. I contend that medical inspection need not be very expensive and that the girls and boys of the country are entitled to all the advantages that
the city children enjoy. The trolley car is beginning to penetrate the rural communities; the telephone, the R. F. D., the parcels post, the automobile, and improved highways are making the farmer neighbors to the city. "The pure air of the country-side," says Woodrow Wilson, "is beginning to blow through our affairs." Wonderful progress in various lines of human endeavor are being made in the rural communities, and the country school must be made to keep up with the procession. Dr. Wood, of Columbia University, in an article that has been widely quoted, says that of the twenty million of school children in this country, three-fourths of them, or fifteen million, need attention for physical defects. Five per cent. of these children, according to the same authority, have a tendency to tuberculosis, and that in some the disease has made considerable progress. If one child in a school has tuberculosis, every other child in the school is exposed to it. No tubercular child should be sent to school, and for two reasons: 1st, it is a bad place for the consumptive child, and 2nd, the consumptive child is a danger to all the other pupils. In some of the larger cities these consumptive children have been removed from the regular schools, and placed in "open air rooms," where, it is claimed, they are regaining their health, and making better progress in their studies.

A considerable proportion (about 5 per cent. it is said) of school children have spinal curvature. The custom of having all the desks of a school room of uniform size makes it necessary for the short and tall pupils to pull themselves out of shape in their endeavors to accommodate their bodies to the desks, hence many of them grow up crooked. Adjustable desks which have been on the market for years, obviate this difficulty, and it is strange to me that school authorities have not come to appreciate their advantage.

Over half the children in an average school have defective teeth. This condition of the teeth is commonly given little or no attention by parents or teachers. Yet it is of great importance, for the condition of the teeth has a considerable influence upon the child's health. Many puny children have been found to make surprising improvements in health after their teeth had been given proper attention. Baby teeth should be filled when they decay. If the first teeth are lost prematurely the second set are likely to be defective. The sockets of the teeth are easily crowded out of shape, and if a
first tooth is lost too early the permanent one is liable to be unshapely, and out of line. The cavities in decayed teeth are good places for germs to hide and multiply, which being swallowed with the food, cause various diseases. Man, it seems, is rapidly becoming an edentulous animal. German authorities report that 90 per cent. of the school children of that country have defective teeth. In England it is no better. This form of degeneracy points to improper kinds of food, and unhealthful conditions of living, a discussion of which we cannot enter into here.

We are also becoming a race of spectacle-wearers. The U. S. Bureau of Education, in a bulletin last year, stated that 25 per cent., or about five million of the school children of this county have defective vision. The authorities of Great Britian report 20 per cent. of the school children of that country as having defective eye sight. These figures are astonishing. A child with defective vision cannot do work required of it in the school room. These children are often unable to see the work on the blackboard. Headaches, and various nervous abnormalities, including vicious habits, and criminal propensities, are undoubtedly often due to eyes strain. These evils are often curable, and by the simple means of fitting the child with proper glasses. Where parents, from any cause, fail to do their duty by these children the state, for self-protection, if for no other reason, should look after their welfare.

A very large per cent. of school children are suffering from malnutrition and anemia. This is a matter for the physician to investigate in each case. There is a great deal of anemia among the children of Georgia due to other causes than hookworm. According to my experience (25 years) this condition is becoming more and more frequent among the poorer classes in the country among the tenant farmers. Food of proper quality and variety is often lacking. The cooking is bad. condition is a very deplorable one, and the cause of much valetudinarianism, and inefficiency. We hear much said about the "poor, overworked child of the cotton mill," but the poor, hard-worked, ill-clad, untutored child of the cotton field seems to get no sympathy or attention. The environment of the "cotton mill child" is often bad enough, but that of the child of the "cotton patch" is oftimes worse.

About 5 per cent. of all school children have defective hearing. In the majority of cases this defect is due to some
remedial cause. Children are sometimes considered dull and backward, when the truth is they cannot hear more than half of what is said to them. Failing to hear many of the explanations of the teacher, they do not make satisfactory progress in their studies. They ask questions that had been explained to them only a few moments previously, and hence are accused of inattention, and are reprimanded for lack of diligence. Failing to hear the commands of the teacher they are accused of disobedience, and are sometimes punished wrongfully, for they know not what. Impaired hearing is nearly always due to catarrh, enlarged tonsils, or adenoids. The child is seen with the mouth partly open. Perhaps it has sniffles. A child thus hampered in its breathing is in a state of constant partial asphyxiation. It does not get enough oxygen. As a consequence every organ in the body suffers. The blood current is vitiated. The lungs do not expand properly. The appetite is poor. The muscles are pale and keak. The brain is dull. The child cannot think clearly. It cannot concentrate its mind on its studies. It is a dullard—always at the foot of the class. In passing through the nose the air is filtered, warmed, and moistened. This does not occur in mouth-breathing. In the latter case the air reaches the lungs cold and dust-laden. This cold, dry, dust-laden air has an injurious effect upon the lungs, so that these children are more liable than others to contract diseases of the lungs—bronchitis, pneumonia, consumption. The best authorities tell us that 90 per cent. of adenoids are accompanied with more or less impairment of hearing. This is due, of course, to the fact that the adenoid growth occludes the pharyngeal opening of the castachian tube. Now it is an easy matter for the experienced physician to detect these troubles, but parents and teachers seldom or never recognize them. Hence the need of medical inspection to discover these conditions and thus prevent the tremendous amount of evil that follows if they are left alone. These cases, with all this formidable train of symptoms, may be entirely cured if taken in time. In fact many of them may be cured within five minutes time. But if these cases are neglected they sooner or later become incurable, and then the unfortunate child is handicapped for life.

Parents often give children “worm medicine” because they “pick at the nose,” when the real trouble is adenoids. Chronic sniffles usually means adenoids. Night terrors are
often due to the same cause, as are various other nervous abnormalities. Even bed-wetting, as I can bear witness, often stops promptly on the removal of these abnormal growths in the posterior pharynx. I have observed, more than once, a tendency to viciousness in children that were afflicted with adenoids. I have seen this condition greatly improve after I had removed the adenoids.

Many of the gynaecological cases so often seen to-day could be traced to neglect or improper care during childhood. The generative organs are the last to develop, and when a girl is deficient in vitality from any cause, these organs are the first to suffer, and may not, and often do not, attain their full development, and when not, develop they are more prone to disease.

In conclusion, I repeat that if a child is allowed to grow up with any of the more serious defects unremedied, such a person will be irreparably handicapped for life. Weak in body, weak in mind, diseased, possibly deaf, sometimes having criminal tendencies, such unfortunate individuals will be unable to cope with strong men in any calling or pursuit. If a girl, such a child will become a weakly woman poorly developed, an easy prey to disease, probably hysterical, a constant taker of medicines, with irregular functions, unable to bear healthy children or to nurse them or care for them if she have them.

Hence our educational methods should be changed. In bringing up children, and educating them, a sound body should be the first consideration. School inspection should no longer be put off. Sound principles of economy alone justify it. Every sentiment of humanity, philanthropy and patriotism demands it.

SEVEN SEVEN SEX TALKS TO BOYS

By IRVING D. STEINHARDT

New York City

Tonight in the final talk of our series we are going to discuss babyhood first and then give a little time to "summing up" on the course itself. Be prepared, therefore, to ask your final questions. You are not to be limited to just the talk of tonight, but you will be permitted to ask questions on any of the previous talks also, and in fact on anything connected on
or with our topic which may or may not have been discussed
in our meetings. I want each and every one of you to leave
here tonight not only with a thorough understanding of every-
thing that I have said to you but with any question that has
occurred to you fully answered in a way thoroughly under-
standable to you. Every father is interested very deeply in his
baby and should retain that interest throughout the child's
life. It should be an interest for both the good of the offspring,
for even though harm be unintentional it is harm nevertheless
and its results may be such as cannot be corrected. Therefore,
for a father to be properly interested in his baby means that
he must have some knowledge of baby lore, and I am going to
take it upon myself to properly introduce you into this very
interesting garden of knowledge. Like the rest of my talks
to you, the knowledge herein offered is to be spread for the
benefit of all. We are all interested in reducing the number
of infants who die each year from preventable causes—causes
which spell ignorance on the part of parents. You hear a good
deal about paternal and maternal instincts but I am afraid
that in intelligent natural instincts the present generation is
sadly lacking. Our ancestors were, perhaps, better off in this
respect than are we, because they were not "money making
mad" and "society crazy" and took more pride in the welfare
of their children than in the size of their bank accounts or the
latest style in dress or millinery. Oh, yes, even then infant
mortality was very high but that was not because the infants
were neglected but because our knowledge of baby life was
very limited. Now we know more but find a most unreceptive
public to offer it to. The first piece of advice I am going to
offer you is this: It being the duty of every mother to take
care of her child, the employment of a nurse to take the
mother's place should not be permitted. To the possible an-
swer that every mother does not know how to take care of her
baby I would say that she should go and learn. Why should
the nurse know more? There are books, lectures, and many
other ways of acquiring this knowledge and it is positively
just as important to know about as the latest dance, song or
game that may be the present vogue in society. I might also
add that it is just as permissible to be up-to-date in baby lore
as it is to know the latest phase of the newest scandal or mur-
der case. This may seem strange but it is really true. I ad-
mit that judging from many standpoints my statement may
seem untrue but again I repeat that it is true and when we awaken the people to these facts infant mortality will decrease. Do you not think that infants die in large numbers? The answer is that it has been estimated that perhaps forty to fifty percent of all the babies born do not live long enough to celebrate their first birthday, and of the survivors a very large number die before they are five years old. Rather a large harvest for the Grim Old Reaper (i.e., Death) to garner from "the little budding plants of human life" and not a very pleasant fact for the thoughtful to contemplate. The first important thing for the new born baby is the matter of food and therefore the healthiest baby, as a rule, is a properly managed breast fed baby. The milk of the mother is the natural food of all the young of mammals, therefore, the young baby will thrive best if fed Nature's natural food for it. What do I mean by properly managed? This means that baby, just like grown folks, should have regular feeding times and not be given food every time it cries. This refers to bottle fed babies as well as naturally fed babies. Night feedings for babies are unnecessary except when they are very, very young, but never after the fourth month of age. Well trained babies usually allow their parents to sleep undisturbed from about ten o'clock at night until six o'clock or later in the morning. A baby, no matter whether artificially fed or naturally fed, should be fed at the same time every day, even if it has to be awakened from its sleep to be fed. You won't have to do this often for very soon baby will be more reliable than the clock. The only exception to this rule is when the baby is being fed during the night. This feeding may be given at any time the baby awakens for it during the night, providing more than from two hours to two hours and a half have elapsed since the last feeding and that much time is still to pass before the regular time for the first morning feeding. At no age should a baby ever be allowed more than one feeding during the night, and this one feeding should be done away with as quickly as is possible. You can readily understand why. It means a good night's sleep for the whole household. Now, how do we train a baby to proper sleeping hours? A very simple matter, although it sounds like an almost impossible one. All young babies do a lot of sleeping. In fact, the main things for a young baby to do are to eat, sleep and do a certain amount of crying. It has been noticed that these periods of sleep consist of two long
ones and several short ones. And it is by utilizing this fact that we succeed in training the baby. By waking the baby up during the day at the regular short intervals which correspond to the regular times for its feedings it is only allowed to get in its short periods of sleep by day and therefore, at night baby is glad to be let alone to get in the long periods of sleep, and is therefore blessed by the family at large who turn to and do likewise. Sometimes a little trouble is experienced but when the baby is allowed to cry a little without any attention being paid to its protests, baby very soon realizes "something is doing" and acts accordingly. I speak from a somewhat large experience and not from mere theory. The proper feeding time for babies, so far as interval of time goes, ranges from every two hours upwards by half hour steps to a four hour interval. This is adjusted by the baby's age and weight. Please remember this particularly—age and weight. The latter is just as important as the former, and maybe more so. Babies are not figured by actual age but by the age their development makes them, and weight is a part of their development. The only food babies require is milk and water. Of the latter only water that has been boiled and then kept in covered holders which were boiled to render them thoroughly clean before the water intended for baby's use was put into them. Babies fed with the natural food do not seem to require as much water as bottle fed babies. When a baby arrives at nine months of age by development we begin to add other things to its diet or food list but this we will mention again later. When a mother finds she cannot give her baby the natural food, an artificial food or substitute must be employed. The best substitute we have for practical use is cow's milk properly diluted until the baby gets to such a stage that it can take the milk without any dilution. This usually takes several months. Remember this foregoing statement particularly. All the patented baby foods that you see advertised have practically no place in the proper feeding of the average infant and most infants come under this heading. You would find, if you investigated, that the manufacturers of these foods do not use them in their own families when there is an infant to be fed. They call in a doctor who understands infant feeding. Therefore, I say to you, don't you take any chances either, follow their example and do likewise. It saves trouble and expense in the long run. Get the best cow's milk you can
for feeding purposes. This don't mean the most expensive nor the richest. It means the cleanest milk whose daily average will always be about the same, running a butter fat content of from 3.50 per cent. to 4 per cent. Never buy loose milk in the cities, but always that sold in sealed containers. I hope the time is coming soon when these containers will be other than expensive glass bottles so that they will be only used once and then destroyed. Then the cleanliness of the containers will not have to be worried about. Always be sure milk is sweet and fresh before giving it to a baby. This is ascertained by putting a little in a spoon and tasting it. It is never ascertained by putting into your mouth first what is later going to be put into baby's mouth. The bottles for the baby and the nipples to be used must be kept scrupulously clean, like everything else that is going to be used in or around a baby. I do not go into any details as to how the milk should be diluted for the various ages because this is a general talk about babies, and my idea is not to make of you finished baby specialists, but to give you such information in a general way that will in the future make you able to take an intelligent interest in your own babies, and which will also permit you in the present to spread sufficient baby lore to interest present parents to realize their shortcomings in this line and to go more deeply into the subject with their regular medical advisors because they have the best interests of their offsprings at heart. In fact, many of you have parents to whom this general knowledge can still be imparted with profit for younger brothers or sisters. Babies, like grown folks, should be treated under the very old saying that "cleanliness is next to Godliness." They should have at least one bath a day and at certain warm seasons of the year at least two. Baths may be given immediately before a feeding time but never after one until at least one hour and a half to two hours have elapsed. Baby should have clean clothes at least once a day and a soiled or wet diaper should be changed immediately upon discovery. Do not overdress a baby but do not under dress it either, a mistake favoring the former is, to me, preferable. Do not buy fancy things to wear. Babies do not like to be all dressed up like show window dolls and besides babies outgrow things very rapidly. Buy simple, good, substantial well made material for the baby's clothes. Babies thrive on sunshine and fresh air, and the latter is as necessary by night as by day. Likewise, at
night, care must be taken not to over dress nor under dress a baby. To err under the former heading is better than not to have enough on. Babies wax fat and healthy on love and happiness but that does not mean that they are to have their own way in everything, and are not to be corrected when doing wrong. They must be trained to understand in their baby minds that there is a right and a wrong, and they can be trained properly. They understand very quickly how they can get their own way which indicates a certain amount of thought. This thought might just as well be utilized in the right direction. The time to commence the education of a baby is immediately after it is born. A baby should have at least one voluntary bowel movement a day, and to the trained mind this movement tells a good deal regarding the baby’s health. If the baby does not have this bowel movement the food should be regulated to bring it about. Babies can be trained at a very early age to cease soiling diapers; likewise the wetting of diapers can be done away with. In my lectures to the girls this and other matters which I just touch lightly upon with you, was gone into in more detail. As I said before, to you I am giving only the proper ideas, whereas to the future mothers I gave details. The actual care of the baby is the duty of the mother, but a father with the right ideas can be a help instead of a hindrance. Baby’s room should be the finest, airiest and brightest of the whole house, but contrary to popular opinion should not be all painted in white. Soft gray tints are by far superior as they do not reflect the light and thereby conserve baby’s eyes. Baby should sleep by day in a well aired darkened room and by night in a well aired room in which no light is kept burning. While baby is asleep quiet should prevail so far as this is possible and he should never be awakened suddenly but always gradually and easy. Never scream at a baby in anger and never really strike one to correct it. Shocks, either sudden or great, of pleasure or otherwise are harmful to a baby. Babies need plenty of sleep and should go to bed with the chickens, as it were. It is nothing short of criminal to keep them up to all hours of the night to suit the convenience of the parents or for any other reason. Babies are not interested in moving pictures, vaudeville, or other like amusements, but are very much interested in and are benefitted by outings in the parks and woods and also to quiet beaches under which heading does not come such
crowded places as Coney Island and like places. Merry-go-rounds, shoot-the-chutes, swings, whirligigs, etc., are not meant for babies nor are they conducive to healthy nervous systems, and pop-corn, frankfurters, sundaes, ice cream soda and like articles alone or in combination are not helpful to good digestion in a baby. Babies have no place in crowds, whether in door or out of doors. They want plenty of space around them and the less people they come into actual contact with so much the less chance of "catching" something. Never allow a baby to have the undertaker's friend—the so-called "baby pacifier." It certainly quits them all right. But it is the sort of a quietness that lasts forever. The so-called baby pacifier is the finest distributor of disease germs known. Babies should never be kissed on or near the mouth and the fewer people that kiss them at all the better for the babies. It is better for the babies, and safer also, if they show their affection for them in some other way. The only thing that the ordinary domestic animals, such as dogs and cats, do for babies is to convey to them the germs of many diseases, therefore, babies should not be permitted to handle them at all. Families with babies certainly should not require any other pets in the house. The present fad of "toughening" babies by exposing them to all kinds and classes of weather seems to me rather a silly one, only likely to be good for the doctor and undertaker. If the baby survives the toughening process all right it is very nice, but if it don't—well, I can only say that most parents will prefer an alive "untoughened" baby to a dead "toughened" one. Short stockings may be all right for the warm weather season but I cannot indorse them for all year round use. Do not try to force the development of a baby. Certain events such as getting teeth, talking, crawling, walking, etc., start at certain ages of the baby and in the great majority of babies need no outside interference. In fact one might say that outside interference works harm in many cases where it is permitted. Never mind what the baby next door can do, yours will "get there" also. If you think something is really wrong consult your family physician, and not your next door neighbor. When a baby is sick do not consult the corner druggist or the circulars of patent medicine manufacturers. Consult a competent doctor. That's what they do when their babies need medical attention. Babies must not be constantly handled and pawed over and when very young they should hardly
be handled at all. The baby who cries, and all babies cry, cries for various reasons and by studying, these reasons can be learned by the tone of the cry. Many babies cry to be picked up or to get their own way in something. This kind of a cry is to be disregarded so that baby learns to obey. Babies must never be rocked or sung to sleep. The proper way for a baby to be put to sleep is to feed him, see that he is comfortable, clean and dry, put him in bed, put out the light and leave baby to go to sleep. At about eight months of age every baby once a day should start taking the juice of a fresh orange in small amount, but increasing gradually until the juice of an entire orange is being taken daily. A little while later we begin the introduction of solid food to the baby’s diet, beginning usually with a little strained oatmeal or other cereal, in small quantities and proceeding very slowly both as to increased quantities and introducing new things. That’s about all I am going to say to you about baby lore. Some may think that I was very foolish to have said anything at all. I am willing to be so considered, however, and furthermore, wish to state I regret that the limitation of time prevents me from saying more to you on the same subject. Our talks are finished. No claim is made for them that they are the very best nor the fullest talks that could have been prepared on this subject, but I have tried hard to instruct you in matters of sex hygiene and to give you a proper knowledge of your genital organs and their proper functions. I have tried to show you that the best path for you to follow is one of strict morality. This is not only for your own sake but for the well being of future wives and children. I have tried to show you the proper respect you owe the sex of your own mothers and sisters and the members thereof, for remember, ‘‘Do unto others as you would have others do unto you.’’ And how many of you are willing that your own dear ones should be sacrificed on the alters of immorality? I have tried to show you what being a real man really consists of and how empty is the title ‘‘being a sport.’’ I have offered you food for thought with the hope that you should profit thereby and I hope you will. I have given you these talks not only in the hopes of benefitting my auditors alone, but also with the hope that you will go forth willing, able and anxious to spread the gospel of morality and right living, and not only by word of mouth but by actual personal practice. Those of you who do this thing will find that a good invest-
ment was made which will pay big dividends in the future in the matter of health and happiness to your future children, to your future wife and yourself. You will never have any vain regrets like those who do live immoral lives and make innocent others, besides themselves, pay very dearly for the "sowing of their wild oats" in the past. If you lead a decent moral life there will be no blind babies to point their little fingers at you and say "You robbed your child of its eyesight and condemned me to eternal darkness;" there will be no dead babies on whose tombstones will appear "You killed your child even before it was born;" and there will be no sick, suffering wife, lying on the operating table to say to you after a serious operation, "You robbed me of my sex and murdered my babies." Think it all over most carefully and ask yourself very earnestly and seriously not only is morality right from a religious and humane standpoint but "Does morality pay"? Personally, I think it does from a religious, humane and every other standpoint of view, so I preach it to you. Let the final words of my talks be this statement, already mentioned several times—The sexual relation is absolutely unnecessary to either sex—Keep your mind and thoughts off things sexual and you will not be bothered by sexual thoughts and therefore not by sexual desire, false or real.

No. 310 West 99th Street.
Dr. M. A. Clark, of Macon: There is no subject in the realm of medicine that needs more consideration than does the treatment of diseases of children. I used to hear our family physician say that any old woman knew more about babies than he did. I made up my mind then that if I could learn something about them, I would do so. If you will pardon the presumption on my part, I believe that I have demonstrated that a man in general practice can learn something about children; and he ought to, or not undertake to treat them. Treating children is not so difficult. There really is an advantage in having a child for a patient. True, the baby cannot tell you where the pains is; nor then too, it cannot mislead you. By giving time to study, you can generally tell where the pain is. You can decrease the mortality and save life, and especially in doing good work by encouraging the mother in the proper management of her children. Just to show you the effect of careful examination, I will say that a short time ago I was called to see a baby about to have convulsions. The patient was a very well-developed child of eight months. The mother had him lying on his stomach, and was patting him; and the more she did so, the more he yelled. I took the child in my arms. I am the oldest of ten, and know how to hold a baby. Examining this child thoroughly, I found no evidence of illness. I said so, and the mother was disgusted with me. The more she patted him the more he had cried. I said, take the baby's diaper off, and I found on examining him an erythematous condition. Naturally, every time she patted it, it stung him; and therefore, the baby would cry. Ordinarily she would have given castor oil, and the baby would have grown worse; but by a little examination, with time and sense, the business was done. If you treat children successfully, you must love them and
have them love you. Then your thorough examination of the child inspires confidence in the mother, who will be ready to follow your directions. Occasionally I find a new mother, who does not feel willing to do so. I demonstrate to her that I know more, and if that does not convince her, I advise her to get some one else to treat the child. The general practitioner is often in a hurry, or thinks he is, and thinks that the baby does not deserve attention. I heartily commend the doctor for feeling that this Association should show more interest in children. If our efforts this afternoon can encourage that, we shall feel repaid for what we have done and said.

Dr. Charles L. Williams, of Columbus: I have listened to the paper of Dr. Rhodes, and have paid close attention to the discussion on this subject, and I have enjoyed it greatly. There is one thing that I want to add, it is about a little child three months old, whom I was called to see, and found that it was continually crying. I could see nothing wrong with the baby. On making a thorough investigation and inquiry, I ascertained that soon after it was born, it began to cry; and that the attending physician had told the mother to give it some paregoric. Why did he do so? He dismissed the case and saw the child no more; but the mother continued, day after day, to give paregoric up to the age of three months. When I saw the child, I was under the impression that it was an habitue—if I may so term it—of opium; and the question is, was it chronic or not? Why cannot a child get into the habit of taking opium, and whenever they do not have it begin to cry and fret? I believe that they do.

Dr. Rhodes: I have very little to add gentlemen, except that if this paper which I have presented has a little stirring influence on the Medical Profession of Georgia, and causes them to pay more attention to Pediatrics, I shall feel well repaid. Probably some of you do not agree with me about the Medical Profession in the South knowing so little about Pediatrics. Nevertheless, what I say is true. We have no progressive men in the South. I know of no one down here that belongs to the American Pediatric Society, or who has ever read a paper on Pediatrics. We have in the South men of international reputation in every other branch of medicine, except Pediatrics, and I have brought this subject before the Association in order to awaken an interest in this branch. In At-
lanta, we have worked for years to try to get certified milk; but men who should have been interested in it, have voted against it; on what grounds I know not. It was certainly a progressive movement for the betterment of our children. Atlanta has no milk station. Every city of its size in the country, except Atlanta, has a society for the prevention of infant mortality. Atlanta has more people for its size than any other city in the South, and the men there are doing nothing. They seem to fight against anything of the kind. Why, I do not know; but these are the facts. Maybe there are some things in my paper that sound a little strong, but they are all absolutely true from the standpoint of men interested in Pediatrics. No one can deny these statements who takes the trouble to look over the field. We are doing nothing for the babies of the South. We have a national society for the prevention of infant mortality; but I think that there are not six men in our sixteen southern states that are members of it. We should have our men in the South taking an interest in these matters, and we must get rid of the old fogies before we can do anything.

THE CLINICAL SIGNIFICANCE OF THE STOOLS OF INFANCY AND CHILDHOOD.

Dr. Herman W. Hesse, Savannah: There are several salient points in the consideration of the stools of infants and children: These are (1) frequency, (2) size, (3) consistency, (4) color, (5) reaction. A normal breast-fed infant should have from two to six bowel movements every twenty-four hours for the first month of its life. After this time until late childhood, two stools a day are considered normal. The color of the nursling's stool is bright yellow or orange. After the nursing period the color is a dark yellow. Normal stools are homogeneous in consistency. Mushy or lumpy stools are pathological. The odor depends on the character of the food, the degree of digestion of one or more of the elements, and the intestinal bacterial flora. Certain common abnormal microscopical features of the child's stool will, if interpreted correctly, frequently furnish a valuable aid in the diagnosis and treatment. The most frequent of these is mucus. Any mucus in a stool, that is visible to the naked eye is pathological. An-
other important element is curds. These are of two kinds: Protein curds and fat curds. The former are the larger. The curds of fat are white to grey, and those of protein are white to yellow. The presence of blood in the stools is significant, but has not especial diagnostic value.

I have amended the subject of my paper so much as to include the stools of childhood with the stools of infants. My excuse is my interest in the subject of infant stools, and the fact that too many pay too little attention to them.

Dr. C. A. Rhodes, of Atlanta: I do not think that I could add a thing to Dr. Hesse's paper, except to say that he is to be congratulated on bringing such an important paper, as he has presented, before this Association. We all recognize and know the importance of a close inspection of the infant's stool. Dr. Hesse has so thoroughly covered the subject, however, that there is nothing left for me to say, except to congratulate him on the most excellent paper which he has presented.

Dr. M. A. Clark, of Macon: I certainly wish that I could have heard that paper twenty years ago. It would have saved me much trouble, and would have helped me greatly in the management of children. The mothers will show the stools to you; I used to look wise, but I did not know what they indicated. I was not taught anything about them, and did not know where to find out anything about them. The textbooks did not give any information, I want to thank Dr. Hesse for this paper. It is the best article that I have ever heard on the subject. In fact the practical side of it is, what I am particularly interested in. I am sorry that he said something about the teaching of the general practitioner. I am one myself, and hate to hear that remark made. The surgeon wants to teach the general practitioner, and the eye, ear, nose and throat specialists want to also. Dr. Hesse spoke of the healthy infant's having from two to six stools a day; and every text book that I have seen makes the same statement. I think, however, that that is not my experience. The majority of healthy infants seem, indeed, to be constipated. I have tried to reason that out. In the twenty-three years of careful examination I have found that the majority of infants are constipated. I do not attempt to correct this by change of diet, but by encouraging the giving of an increased amount of water by the
mother, and prescribing occasionally, a slight laxative. In the majority of the infants' stool one can see that there is some fault in their diet. With the nursing infant that is gaining in weight and developing well, it is wise to make no change. If the mother has plenty of milk let him alone. Do not wean him. If it is a bottle-fed baby, however, and is not doing well, then something is wrong in the cow. Next to mother's milk, modified cow's milk is the best thing for the infant. We have had a great deal of discussion on the question of percentage feeding. As a matter of fact, it is the ideal method of feeding, an infant; but you must have some regard for the percentage of protein and fat. The normal infant requires the protein in one ounce of milk to each pound of weight of the infant, to keep up a normal equilibrium. It would be well to add a little to that in feeding the normal infant. Start with an ounce and a half to each pound; you must consider the fat also. The great thing used to be to get a large percentage of fat and a small percentage of protein. One would think the trouble was that it was the proteid that was producing the difficulty and would increase the fat, and of course, this would increase the difficulty. There is a marked difference now. They used to recommend ten to twenty per cent cream. Now, it is recommended not to use more than ten per cent. If you put the milk, immediately after being taken from the cow, on ice, you will find that the upper third of it ten per cent., and the upper half of its seven and a half per cent. The normal three and a half or four per cent milk is forty per cent calories.

Dr. John W. Daniel, of Savannah: I think that this discussion is not exactly in the line of the examination of the stools of children, but will bear on it in this respect. In this day of the soda fountain, and the corner candy store, we probably have a great deal of indigestion among children from carbo-hydrate food. To illustrate the importance of looking into that in young children, I want to cite this case. A child was brought to me sometime ago that had had the tonsils and adenoids removed on account of a constant hacking cough. He continued to cough after this operation, and rapidly lost weight. The mother became alarmed and brought him to me with a diagnosis of incipient tuberculosis. I found nothing the matter with the child's lungs, but found a typical pot-belly, as we call it. The child was eight years old. I found that he
had a few nickles given to him each day, and that he visited the soda fountain and the candy store. The mother stated that she had noticed the stools, and that they were frothy and fluid, in the toilet. Dr. Hesse did not bring this out, but it is important and is almost pathognomonic of carbo-hydrate indigestion. On examining the stools, I found that this was the case with the child. He had the starch in his stools under microscopic examination. By putting this child on a diet and stopping him from getting candy and soda, I secured a gain of fifteen pounds in his weight within two weeks; and his cough and the gastric irritation ceased. He made an uninterrupted recovery.

Dr. Herman W. Hesse, of Savannah, closing, said: I did not want to appear too enthusiastic regarding the results of a routine examination of infants' stools, but intended simply to impress the fact which you probably know already. The most important fact you remember was that when there was a disturbance in the bowel movement function of the child, there was some disturbance in the digestion; and in order to correct that intelligently, we had to arrive at a correct conclusion as to the nature of the substance causing the indigestion. With regard to Dr. Daniel's reference to frothy stools, I would say that I thought I mentioned them in my paper and said that such stools are frothy. Whenever you have the frothy mixed stool there is this excoriation of the genitalia, and we can say that the form of indigestion is from carbo-hydrates.

THE CARE OF THE NEW BORN.

Dr. M. A. Clark, Macon: Immediately after birth the child is wrapped in a blanket and placed on its right side, with its body slightly elevated. The mouth and eyelids and eyes are then cleansed with a warm solution of boric acid; and if there is any danger of infection, a few drops of a two per cent. of nitrate of silver or a ten per cent. solution of argyrol or protargol are instilled into each eye. The cord is then tied in two places and cut; a piece of sterile gauze or cotton being placed over the stump. If the child does not cry the usual methods of restoration are employed. The infant should be placed in a separate bed from its mother, on its right side. When the
bath is given remove the skin-coating with sweet oil, sterile vaseline or lard. The child is now carefully examined to see that it has no defects. In dressing the child a flannel band, six or eight inches wide, is fastened around it; and a soft diaper is securely, but loosely applied. A woolen shirt of medium weight, in winter, and of very light weight in summer is used. The skirt is linen or cotton in summer and woolen in winter. With a little thin dress the child is clothed. Eyes and mouth should be washed morning and evening and protected from the strong light. The child should nurse only every four hours during the first day, and once at night. If it is fretful, a little warm water should be given it; and it should spend the greater part of the first twenty-four hours in sleep. Nursing is then allowed every three hours a day until the flow of milk is well established; after that, every two hours, waking the child to nurse, but allowing it to nurse only once during the night. After the first week, the interval of nursing should be two and a half hours; and at the end of the fourth week, three hours. If there is a superabundance of milk, the three-months' colic will not be evident unless the length of time between the nursings is shortened. If the infant is a boy, the prepuce is examined at the end of ten days or two weeks. If found long and constricted, circumcision is advised. The child should sleep without being rocked or handled. An occasional cry does not harm the baby, but really helps it. It should be left alone during the first month, except when it needs attention or it is time for it to nurse; and it should not be taught to cry and laugh.

DISCUSSION ON DR. CLARK'S PAPER.

Dr. Henry C. Whelchel, of Douglas: Gentlemen, I am sorry that I did not hear all of Dr. Clark's paper; as it is, I was very much interested in it, and enjoyed very much the part of it that I was able to hear. One point that I did not hear referred to, by Dr. Clark, though he may have mentioned it when I was not present, is the thorough examination of the baby soon after its birth. We frequently overlook injuries by not examining the new born children as thoroughly as we ought to. I recall a case which I once saw of subperiosteal hemorrhage, that was treated by puncture and pressure. I do
not know whether Dr. Clark brought that out or not. I do not think that it was good treatment. The child was infected and had quite a trauma. I believe that in injuries at that time, if it is necessary to treat them, one should make an inspection under aseptic conditions, of course. Again, I want to endorse what Dr. Clark said in regard to cleansing the mouth and washing it too frequently, or too roughly, on the first washing. Very often we find that aphthous patches in the newborn arise from too rough cleansing of the mouth, and breaking the mucus surface. The light cleansing with a soft cloth is all very well. I want to offer my protest against what Dr. Pritchard (?) called the statutory growth of castor oil. These are a few little things that I wanted to mention, after hearing what I did of Dr. Clark’s address.

Dr. Barton W. S. Daniels, of Savannah: I want to endorse what Dr. Clark says about the washing of the mouth and will cite a couple of cases that occurred in my practice, in which I am satisfied that the children died of general sepsis, through abrasions of the mucous membrane of the mouth, the nurse, probably, not covering her finger well with cotton in cleansing the mouth, and scratching the roof of the mouth in that way, thus permitting the entrance of streptococci. I do not know whether Dr. Clark mentioned anything about the dressing of the umbilical cord. He probably did so before I came in. I have made it a practice to use glycerine, and have never had an infected cord at all. I use glycerine with one and one-half per cent. of formaldehyde in it. This is not enough to produce skin irritation, and the child does not cry. The glycerine being hydroscopic, draws the cord up and lessens the probability of any infection through the cord, or any putrefactive process. I do not know whether Dr. Clark mentioned jaundice in children, which, in my practice, was often caused even by graduate nurses, as well as the mother, who became alarmed when the baby become jaundiced and wanted to dose it. That condition is not of hepatic origin, but is due to blood changes. There is no need of dosing. Jaundice does no harm, and occurs in all cases. The laity expect us to dose the children, and if we do not, they think that we do not know our business. I always take the position that I will not do so. Dr. Clark mentioned regularity of nursing in newborn infants. That is a question, to my mind, open to a great deal of discussion. I
found that the best way to nurse a child is to resort to the old method of nursing it when it cries. I used to have the babies nursed every two hours, and found that they would become colicky and erudate their food after nursing. I do not see any difference between an infant and an adult spitting up their food. It is due to overloading the stomach. An infant, if they are laid on their left side after nursing, will probably have re-gurgitation due to the liver’s flopping over on the tube and pushing the milk into the mouth. Of late years, I have not had the babies nursed at regular intervals, but when they woke up they were nursed. I find that they get along with less indigestion and less colic, and thrive very well with this method. It seems like going back to the old granny idea, but experience has confirmed the notion in my mind, and I find it a good one.

Dr. J. G. Dean, of Dawson: I want to endorse what Dr. Clark has said, and to agree with him in almost everything; but there is one thing that I do not agree with him about, and that is with reference to divulsion of the prepuce. He spoke of it at the earliest age of the infant, instead of circumcision; because, he said, there would probably be a readhesion of the prepuce to break up. I have frequently had this divulsion, but I always instruct the mother or nurse to practice retraction every day, cleansing properly with sterile wicks. That will prevent any adhesion, and do away with the necessity of circumcision. I am inclined to agree with a certain competent physician in New York City, who believed that the foreskin was put there for a purpose, and did not believe in making a Jew of a child. If early divulsion and retraction are practiced and repeated daily, there will not be much use in the average case for anything else. I want to dwell on the idea of Dr. Daniels’s as to irregular nursing. I do not agree with him as to keeping it up every two hours. I think that two hours and a half apart is often enough to nurse a very young infant, from almost the outset, and after a few weeks, say two months, I advise a three hours interval and have even advised them to be nursed not longer than fifteen minutes. Another thing that I should like to mention is the weaning of the baby on the nipple at night. It is much better to wean them at night after they are three or four months old. If they cry during the night give them a little water. Certainly do not nurse them more than once. Most mothers can get them not to nurse during the night if they make up their minds not to yield to their sympathies.
If the babies wake up and cry, do not nurse them. In this way the baby and mother will both get more sleep, and the baby's stomach will have a chance to rest. Increase the period between nursings to four hours after the baby is eight or nine months old, and it will never have an overloaded stomach and very little regurgitation of the stomach.

Dr. C. A. Rhodes, of Atlanta: I want to endorse the part of Dr. Clark's paper which referred to the intervals between the nursing. It has been definitely proved that a normal baby left to itself, will nurse five or six, and rarely, seven times a day; and also that mother's milk takes two hours to digest, and cow's milk three. We are thus shown the fallacy of feeding at very short intervals. Dr. Heuber and Dr. Keller, the two greatest German Pediatrists, say that five times a day are sufficient Nursing every two hours the mother has no chance to attend to her social duties. Every four hours is often enough. When the baby is nursed every four hours only, if the mother wants to go out, she can do so. It has been my practice to put the baby on a three hours feed in the beginning; and by the time it is three and a half or four months old on a four hours feeding. All the best Pediatrists in the country recommend that procedure. After the proper time has elapsed, wake the baby up and feed it; and it will go to sleep again. Nurse the baby at a regular interval, and but for fifteen or twenty minutes at a time.

Dr. W. L. Champion, of Atlanta: I have enjoyed Dr. Clark's paper very much. It is foreign to my line of work, but I must disagree with him in regard to circumcision. I think that every male child should be circumcised when two or three weeks old. No healthier people live than the Jewish people and largely it is due to circumcision. It can be done before you can say Jack Robinson. There is very little pain to the patient, and it certainly saves trouble in the future. It relieves the genito-urinary surgeons of a good deal of work later on.

Dr. J. O. Elrod, of Forsythe: I endorse Dr. Clark's paper, and especially the giving of water, not sweetened. The greatest trouble that I find is that to have the mothers give water after the milk has been started. The mothers leave off the water, and there is no way of getting them to give it. I
tell them to give water as long as the baby lives. We find that in very fretful, crying babies, if they, have given them sufficient water, even after they begin nursing, we get rid of a great deal of the fretfulness. That was one of the most important points. A great deal of the trouble is due to lack of water. Sweetened water causes colic. I wish to endorse all that Dr. Clark said on that point.

Dr. Clark, closing: I thank you, gentlemen, for the discussion of my paper, and wish that I had more than five minutes to reply to one or two things. With reference to the examination of the child soon after birth, I would say that I mentioned that. Every infant should be thoroughly examined. I never give castor oil; for I never shall forget how I used to have to take it. If you want to be a good child’s doctor, tell the parents not to threaten the child with the doctor. My little fellows all wave their hands to me, as I pass. If you give castor oil, you will soon have trouble. I never give any medicine that tastes bad. If jaundice occurs, my experience is that small doses of mercury will overcome it. In infancy, the liver is larger than at any other period of life. Small doses of mercury has a tendency to prevent the frequent jaundice. Instruct the parents not to dose the child for this, and impress upon the nurse not to do it unless you advise it. I remember that on one occasion the nurse—a graduate of Guy’s Hospital—insisted on doing so; but I told her that I would not have her nurse for me unless she carried out my instructions. The reason that I advise regular feeding is for the comfort of the mother. There should be an abundance of food, and the child’s stomach is so small that it cannot empty the breast. Therefore, the mother is uncomfortable. We better run the risk of letting the child get a little too much than to discomfort the mother. After the child has got into regular habits, we let nature take care of the matter. Most parents will let the child nurse whenever it cries, and the mother thinks it is hungry every time it does so, and thus lets it nurse too frequently. If you begin regularly you will have no trouble. You should start right, and teach the mother, no matter if she has had fifteen children, how long she should nurse the baby. You can determine how long she should nurse it after a short time. I agree with the views that after three months, it is well to have three hours interval between nursings. I do not agree with
those who say four hours. I should like to go into the ques-
tion of the real cause for circumcision as having been recom-
mended in the Bible by our All-Wise Creator. It was not on
account of health, but was a religious rite. The great object
of worship in olden times was of the prepuce. When Abraham
sent out his servants to find his wife, he made the servant
swear, with his hand on his foreskin. When David was sent
by Saul against the Philistines, he brought back their fore-
skins as a proof of valor. This was the part that they wor-
shiped. Now, the Great God saw that the only way to do
away with that worship was to deprive them of the object of
this worship, and turn them to the true religion. There was
a time when circumcision was needed. I thank you, gentle-
men.

Discussion on Dr. Allen’s Paper

Dr. A. G. Fort, of Atlanta: I consider that there is no sub-
ject presented before this Association of more real value than
that presented by Dr. Allen. He has brought out the points
which are so often impressed upon us when we visit the rural
districts of our State; for instance, the necessity of sanitary
privies in the rural schools. He has not impressed that upon
us as forcibly as I think it should be impressed. He hails from
North Georgia, where the conditions are just the same as they
are in South Georgia, although they do not think so. South
Georgia does not think that they are as bad there as they are
in the Northern part of Georgia. Nevertheless, it is all one
sort of thing.

We recently took occasion to have inspected the schools
in Stewart, Webster and Wilcox Counties, in order to learn
the physical condition of the children in the rural districts.
We found that in one county there were forty-seven school
houses, and at these school houses there were only seventeen
privies, and not a single one of those was even in the least
sense sanitary. They were all of the tenth per cent. type, as
specified by the Rockefeller Commission,—open-back surface
toilets. That this thing impressed upon us the idea of the
necessity of some kind of inspection of the sanitary condition
of the school buildings and surroundings, goes without saying.
I might go one step further and say that it is not confined en-
tirely to the schools in the rural districts, where they have no
toilets; because I have seen a magnificent brick structure with only one for the girls and none at all for the boys. The latter had to go to the woods, which meant the spread of all intestinal parasites transmitted through the soil.

We found a very high percentage of anemia and of adenoids, a large percentage of defective vision and defective hearing. One other point impressed upon us was the fact that the white children of our country have tuberculosis on an average of one white to two negroes; and that the anemia was two in the white to one in the negro. Why this was the case, we do not know. Perchance the negro is more or less immune to malaria and more or less to the effect of hook-worm infection. An explanation for that, I have not; except that if I were a mosquito or a hook-worm, I should certainly choose the white man to penetrate the flesh of, in preference to that of the negro.

In regard to the question of the saving of finances by the school authorities, I will say that I was much impressed just a day or two ago, at Brunswick, where they have medical inspection. One teacher told me this: "I used to consider that it would be a great burden to have placed on me the necessity for the examination of the eyes and ears of my school children; but since they have been examined in this school, I have been able to do away with about two-thirds of the inattention on the part of my students. I can now have the large girls on the front bench and the small ones on the back bench, or vice versa, and both can take advantage of everything." She takes into consideration their hearing and sight, instead of only their size, as formerly. Those that are near-sighted and hard of hearing can be placed on the front seats instead of according to age or size on the back seats. I do not know of anything that would offer us a broader field for work than the school inspection of the rural districts of Georgia. France has recognized it and it is a national thing there. Germany has it, and so does Japan; and in the United States there are numbers of states which have it. I might mention Pennsylvania and New Jersey as probably leading in that direction. Massachusetts has a department, but not as good as that of Pennsylvania or New Jersey. I appreciate very much the paper of Dr. Allen, and hope that the gentlemen will give it the consideration which the subject really needs; I believe that it should be made some man's business to examine the children in the
school, but he should be taken away from the general practice of medicine while at that work; for, on account of our ethics, there is criticism of any doctor who examines school children gratis.

Dr. Malcolm L. Currie, of Vidalia: Dr. Allen's paper is one of the most timely that we have had, and I think that it is in the place where it is needed. It devolves upon the medical profession to correct the matter, and I think that Dr. Allen has shown us the way to do it. I hope that the time will soon come when we shall have a health officer in every county in Georgia. If we can get that we can do better. I think that it would be a good idea for that health officer to have, as one part of his business, the task of looking after schools in the rural districts. Nearly all towns in Georgia have good schools. They are well attended, also, but a great many of the children have catarrhal condition, adenoids, tonsilitis, etc., and they go for months without medical attention. I believe that there ought to be a close connection between superintendent of these schools and the health officer, whose business it is to look after these things; because the teacher knows better which children need medical attention, than the doctor does, and sometimes than the parents do. The mother frequently does not pay much attention to the child, and the father is often away. In the school, it is different; if it has bad eyes, catarrhal condition, etc., the teacher is apt to discover this. She should then notify the physician or parents, and have the child looked after. I remember a girl who was quite apt and learned anything as quickly as any other child, but could not read; and they did not know the cause of the trouble. It was finally discovered that she was deficient in eyesight, and could not get hold of the words on the board in order to memorize them. There is a great deal of this trouble in the schools today; and what we need to do, as medical men, is to work this thing out, and not stop until there is something done. I believe that one of the best things to do is to try to get a health officer in each county and let that be a part of his business until we have a special man to look after these things.

Dr. Vincent D. Lockhart, of Maysville: I am very glad indeed, that Dr. Allen has taken up this subject. He is better qualified, I think, to push this matter before the attention of the people than is any other man that I know of. He has re-
Recently been elected as a member of the Legislature from Jackson County, and that is the smallest part of Dr. Allen's life. He is a man who knows what the people need by his contact with them in their daily life, and he has been with them in all departments of this work. I have known him for a long time and have never known a man more directly concerned with the educational interests of our State than our friend, Dr. Allen, here; and I wish to say that the State of Georgia needs today more attention paid to the examination of school children than to any one other thing. We have lots of little children in our town, whose eyes are deficient, whose hearing is more or less impaired, and who have adenoids, tonsilitis, and other troubles of that kind; and little attention is paid to these conditions. Moreover, even when the doctor told the teacher that it was important that these things be attended to, she said that although she had reported cases it seemed that nobody was concerned particularly about it. If, however, we can bring it to the attention of our State Board of Health or those in authority, we shall be able to bring the school children of our state into that forward movement which will make Georgia the grandest state in the Union. I say this much merely in praise of what Dr. Allen has undertaken. I know that he is well equipped for this work, and I also know how patriotic he is. I wish to approve of his start and the way in which he has directed matters.

Dr. Allen: I want to thank the gentlemen who have discussed my paper, and with your permission I will just read a little more of the paper in the time allowed me for closing the discussion, as I did not have time to finish it before. (Here Dr. Allen finished his paper, then went on speaking as follows):

If parents were all sufficiently intelligent to have their children looked after, medical inspection of schools would not be necessary; but they are not sufficiently intelligent, and here is where the usefulness of the school physician comes into play. The remedy for this is to educate the public. If we had medical inspection today, unless the people realized the importance of it and the need of it, it would be a failure. The general public must be educated to the need of these things before they will ever be put into successful operation. I thank you, gentlemen, for your attention.
MOST PREVALENT INTESTINAL PARASITES FOUND IN GEORGIA.

Dr. A. G. Fort, Atlanta: These facts were revealed by a microscopic examination of the stools of twenty-one thousand people in Georgia. Among the round worms, the hook-worm led all the others in its prevalence and damaging effects. The next most prevalent of the round worms was the stomach worm. Several other round worms were found in smaller numbers. Among the flat worms we have found the large tape worm, occasionally, and the smaller tape worm quite often. We often found the larva of the fly in the feces examined. So important do I consider the question of intestinal parasites and their bearing upon many masked symptoms of disease, especially epileptiform seizures, that I recommend that each physician always have the stool of his patient examined just as he does the urine.

Dr. M. A. Clark, of Macon, Ga: It does us so much good to have the president announce our names that we like to have him do so often. As I listen to these papers, I am very much like the old lady who went to the circus, and remarked: ‘I am so glad that I am living.’ I almost marvel that I escaped childhood and lived to manhood. I do not know what became of my adenoids. I must have had hook-worm, but I know I had no ground worms. I had what you call ‘round worms,’ (but I have forgotten the technical name for them), because they gave me medicine that made me very sick. They say, however, that there is a special providence that watches over little children; and I was a little child. I would not detract at all from the work that is being done along this line, but I do think we are going a little too far. We are getting too much toward patronism. As a man in general practice, I am getting along in years, and am afraid that I will have to take a specialty in order to make a living. There will be nothing left for me to do in general practice. I cannot advise the children, because they have to have medical inspection at school. After a bit they will have a lunch at the school and put more clothes on the child at school; also furnish free books, pretty soon. Talk about educating the parents; we are educating them to be careless of their responsibilities. Chil-
dren used to mind their parents, but now the children are rude and the parents mind the children.

Another thing that we are doing is exploiting the hookworm and pellagra. By doing so, we are giving those opposed to us an excellent opportunity for fighting immigration into the South. A prominent senator told me, when I was in Europe year before last, that that was the great objection against immigration into the South. Arguments of this kind have been used for commercial purposes.

With reference to educating the parents, I would say that unless they are taught not to rely on the medical inspection too largely, there will be nothing left for the family doctor to do.

A doctor was inspecting the school where my little girl attended. He said that she had trachoma and adenoids, and that she could not keep up with her class unless these were attended to promptly. Well she has not been treated for them. Her eyes are well and she has no adenoids; and she has passed with honor. The doctor was mistaken in his diagnosis. Our friend, Dr. Fort says that because of ethics a man in general practice ought not to undertake medical inspection of schools. I think that it is because of a lack of ethics that there is criticism along that line. The code of ethics of the medical profession is one of the grandest ever written; and if the medical profession of Georgia would follow it, the people would soon know what it is and would know when it was abused. Then we would not have any trouble in that direction. I am heartily in favor of the education and instruction of the parents, but I maintain that there is a duty devolving on the parents toward the child. The greater the tendency to legislate morals and education, the greater the tendency is to get the parents careless of their duty. There is also a duty toward the family physician. After a while general physicians will become as scarce as hen’s teeth. Within a few years, I shall be very lonely, when I come to the sessions of the Georgia Medical Association. There will just be a few of us general practitioners left doing general work. The specialist must bring the baby into the world, and the Pediatrist takes charge of it afterwards. If the child does escape the school inspector, he must then be looked after by the throat and nose men. When he is grown up the internal medicine man takes charge of him. I think that we have failed to take a view of the whole situ-
ation, and have overlooked the thing most needed for the care of the child in the state.

Dr. Arthur D. Little, of Thomasville, Ga.: I should like to say that the results of this work of Dr. Fort’s have been shown by the benefit given to those who have been treated for hook-worm. The parasites have been found on examination, and have been gotten rid of; but the greatest good the work has done is to the farmer. We all owe the ruralist more than any other man in the country. He produces, and the people of the cities are parasites living on what he does. He has never got much benefit from the state, although he does the work. We are going to remove his children’s adenoids and hook-worms, as we do those of the children in the cities.

So far as preventing immigration is concerned, I think that the only thing that has kept South Georgia from being the greatest place in the world is because it was advertised all over the world that the people here all got hook-worm. When we can prove that a man can live here as long as anywhere else, the immigrants will come in so thick that we shall have to go to work to keep them from pushing us out. I cannot commend too highly the paper of Dr. Fort.

Dr. Bohmar, of Myes, Ga.: I just want to say in connection with this paper of Dr. Fort’s, that I have been treating cases of hook-worm since it was first discovered, and find that in the rural districts of South Georgia that seventy-five per cent. of the children are infected. I have found in treating it, that thymol is the best treatment for tape worm, as well as for hook-worm. I have not seen that mentioned in the text books, and should like to ask Dr. Fort to tell us in closing the discussion whether he has found it of use, and a good treatment.

Dr. J. H. Burns, of Clarksville, Ga.: The Health Officials came to our county, they found the hook-worm, and at the same time, they tried to rid our country of the cattle-tick fever. When they found that the cattle were infected, they told their owners if they took their cattle out of quarantine, they would be arrested. They did have several arrested and put into jail for removing the cattle that had been infected with the ticks; but our health officer could not control the parents in order to eradicate the hook-worm, for there was no law to make them carry out instructions. Therefore, it seems to
me that it is most important to go through the State of Georgia with authority, such as we have in regard to our cattle-tick eradication. The cattle-tick eradication was so thoroughly performed that there is now no cattle-ticks in our county. They had authority to go through the country and tell the farmers to obey the quarantine of their cattle or they would be arrested. It is more important to have authority behind our health officers than to have it behind the officials who have charge of the work of inspecting cattle, it seems to me.

Dr. Stewart R. Roberts, of Atlanta: I want to disagree with what my friend, Dr. Clark, says. We cannot afford to cast any disparaging reflections upon a movement that is more to the health of the children of Georgia than anything else that has been done in a long while. We must get into our minds the fact that an effort must be made to relieve the health of the people in mass, and not merely that of a few people who come to us as private patients. First, Dr. Clark contends that soon the general practitioner will be removed altogether. That will never happen, because the most necessary person in medicine today is the general practitioner; and he always will be out of sheer necessity. In the second place, no harm will be done to immigration because movements are on foot to bring greater health to the children. If immigrants want to stay away because we reduce the disease, let them stay. I think that one of the most supreme incidents in all history is that a great, rich man should devote millions to relieving the children of a whole state, and the whole South of a disease; and anyone who interrupts or casts disfavor on this movement is not helping the children of the State of Georgia. I once had the experience of examining ten thousand children at one time, and I did not get much out of it except a study of human nature. Most of this human nature was exhibited by physicians whose children I found to be suffering with the disease. I approached them with a gloved hand, and sometimes not at all. Sometimes the children of physicians are diseased, like those of anybody else. Let us get the idea of health in the mass in our minds, and not only in our private patients. No one of us has many when compared with the number in the whole state. In Washington, they have started to run a hospital train through the whole district. As Dr. Little says, the children of the rural districts are suffering
with disease and have not had what is coming to them; but with the running of a hospital train over every inch of that state, I hope that there can be great improvement made in these conditions. The children of the country are entitled to health just as much as are those in the cities.

**Dr. Vincent D. Lockhart**, of Maysville: I want to most heartily endorse every word that Dr. Roberts has said, because our country people need this so much. A great deal has been said about hook-worm in South Georgia, but I want to say that it is also here in the foothills of the Blue Ridge. I know of families that come here to the hospital from that region, who are crippled in their family life daily on account of hook-worm.

As to a specialty, I do not believe that it is necessary to have a specialist for the treatment of this hook-worm disease; but I think that it is necessary for every doctor of the South to co-operate with the board of health and send in his specimens thereto, have them examined. Let us know the trouble with the poor children whom we see going around looking so pale and so weak that they have not energy enough to even look up to the good that is coming to them; but some day, some great man will tell them that he has come to them through a great charity, and I tell you that the mountain people of Georgia today, are people who have it in them to appreciate a charity, and to appreciate a great work. Let me tell you, gentlemen, that all the insinuations that have been cast upon the investigation of this hook-worm treatment and all other affairs of this kind, are merely due to a sentiment that should be stamped out by every doctor in Georgia.

**Dr. C. A. Rhodes**, of Atlanta: I do not think that we can commend the work done by Dr. Fort and the Health Department too highly, for they have worked for the education of the people of the South. I had occasion to look into the amount of appropriation made by the State Legislature for this work and other work for the betterment of conditions in Georgia, and found that twenty-seven thousand dollars had been appropriated for the State Board of Health and twenty-one thousand for the eradication of disease in hogs, which goes to show that only six thousand dollars more was appropriated for the health of the people than was appropriated for the care of cattle. The calves and pigs are looked after, while our
children have to wait. This is the state of affairs in our Legislature, and it is up to the doctors to get busy and see that better laws are passed and more appropriations are made for this work. Our State Department of Health is doing great work, and Dr. Fort and the Department should be congratulated; but they need more money in order to give more efficient service, and it is up to us to see that they get it.

Dr. Allen: With regard to the question of immigration, I am not so sure that we want so much immigration. The purest Anglo-Saxon blood in the American Continent is right here in the South.

Dr. M. M. Johnson, of Waycross: In vindication of the work that Dr. Fort is doing in our section of the State, I want to say that prior to the time he came to our section, we had been doing work in this line, but had found it practically impossible to handle the situation. I do not know that we have more hook-worm in our section to contend with than in some others, but we have it in great quantities; and although we were doing what we could and holding public meetings, at which we exhibited stereopticon views in an effort to educate the people, we were utterly unable to handle the practical side of it. Dr. Fort and his co-workers came to Waycross, and the Ware County Medical Society took them under its wing; and then we went after the disease. I am here to say that while the work has not all been completed, yet they did a great work, and covered the county; we treated hook-worm following it up. I think the matter of following it up is very important. In most cases the people have been treated only once, and I find from microscopic examinations, that they often are not cured. Every treatment helps them, of course; but in the ordinary run of these cases, it don't cure them. It generally takes from one to three treatments to completely eliminate the worms. We found the work that the State Board of Health has done very valuable, and would be very glad to have them come back. I just want to endorse, with the strongest terms possible, the work they are doing, and to wish them Godspeed.

Dr. A. G. Fort, of Atlanta: I wish to thank you all very much for the discussion of this paper. As you know, I had not quite finished, and I want to call attention to the fact
that we have in Georgia a tape worm, known as the Taenia solium, which is less than an inch in length and about the width of a number one thread. If you treat for tape worm, you see none, because you do not know what to look for. A year ago, I stumbled on it by accident. You have the same symptoms as from the large tape worms. The treatment is also the same. Thymol will often get the tape worm, but not so often as other preparations. Soda Beta-naphthol will occasionally get rid of this parasite. During our examination, we found that the larva of a fly was quite often present in fecal material upon examination, and when you hear the statement made that maggots are found coming from the intestinal tract, do not deny it. The larva must have been taken in by means of food that had not been screened. I cannot answer all the questions brought up, in fact, I feel myself that the remarks made are more on another man's subject than on mine; and I do not feel that I have a right to take up your time to answer them. The greatest campaign for the eradication of parasites is that of education and by actual demonstrations. I defy any man to say that we have brought a breach between the family physician and his patients, I do not care who he is. There has been in our minds all the time the wish to bring a closer relationship between the family physician and their patients; and I believe that in a large measure we are successful. In various sections where we have carried on the campaign, the people, after we have left, have been going to their family physicians and following up this line of treatment in a very large measure; and it has made necessary the general practitioner more than the specialist. The Health Department has created more work for the benefit of the individual and for that of the pocketbook of the physician. Now I should state this relative to the matter that physicians in the cities do not appreciate as they should the people of the rural districts or the diseases with which they are suffering. I lived in a small town and thought that we had a great deal of disease and suffering there, and we did; but when I visited some places in the mountains of North Georgia, then, gentlemen, I felt that I would not raise my voice to keep a single child there from being brought from the position that the natives are now in—they are infected with malaria, have enlarged tonsils, feverish, filled with malarial parasites, and unable to partake of their limited educational opportunities, or
to earn a livelihood. The ordinary poor, down and out farmer in the northern districts of Georgia is in a pitiful condition. The people there are called "poor white trash." They are of as purely Anglo-Saxon blood as we are. They are poor from disease, which keeps them constantly so; but our department will go out and help these people, to a higher plane of living, to be higher and better citizens. I thank you all for your kind words regarding our work, and for your free and open discussion of the paper.

Dr. M. A. Clark, of Macon: I was just about as serious in regard to the disappearance of the family physician as I was about the feeling of the old woman in the circus. I had no meaning except to carry my point about taking the duty of providing for children away from the parents.
RETROSPECT OF CURRENT PEDIATRIC LITERATURE.

Diseases of the Alimentary System.
Under the Charge of
JAMES WARREN VAN DERSLICE, M. D.
Assistant Professor of Pediatrics, Rush Medical College, Chicago, Ill.


Souttar finds that the condition appears most commonly in children which are well nourished and in perfect health. The onset is sudden; and as a rule the condition starts with a severe and sudden abdominal pain; which comes on in attacks with intervals of complete relief. Vomiting, as a rule, is not a feature, the child straining incessantly, but only passing a little blood and slime. At first there may be a motion or two, but after this obstruction becomes complete and no trace of bile will be found in the stool. The sign is almost infaillible, and should be a part of the routine examination. Blood and mucus are exuded from the intussusception in sufficient quantity to soon clear the lower bowel of its contents in view of the violent peristalsis which is occurring. In a typical case the abdomen is fairly lax, unless the child is straining. A tumor may be felt in the course of the colon. This tumor is in the region of the transverse or descending colon. It gradually shifts its position, advancing along the colon and increasing in extent. It is sausage shaped and of a horseshoe form, the concavity being toward the center of the abdomen. Manipulation causes it to contract and become hard. The hardening is accompanied by an attack of pain and an increase of tenesms. It is characteristic that although the tumor may not be very tender and manipulation may cause no instant pain, the pain rapidly follows and continues long after manipulation has ceased. The presence of a tumor is the essential sign of intussusception. The apex of the tumor may be felt by the rectum.

Dr. Souttar found that in 70 per cent. of the cases a definite cause could be found; they tend to be chronic; the symptoms are irregular. Elliot and Corscaden in an extensive series of cases found the following direct causes: (1) tumors were found in 40 per cent. of the cases. Of these 24 per cent. were innocent. (2) Ulcers were found in 14 per cent and were due to typhoid fever, dysentery and tuberculosis. (3) Meckel's diverticulum (inverted) was the cause in 12 per cent. (4) Trauma, such as a severe blow or a violent strain, was a definite cause in a few cases. More or less acute attacks are followed by intervals during which the patient is free from any acute symptoms and only complains of general poor health. The attacks become more frequent as time goes on, but may cover a period of from a month to a year. Pain is always a prominent symptom. Vomiting occurs in two forms. With the pain there is a bilious vomit, due to dragging on the mesentery. In the later stages there occurs the dark vomit of intestinal obstruction. Wasting and anemia are present in the chronic type. Constipation or diarrhoea may be present in chronic forms of intussusception.

Frightening Children.—How careful persons ought to be when correcting their children not to raise in their minds any imaginary fears, and above all, not to make a "bogey" of any person or thing. In some
cases we fear it is the doctor that is made use of in this way. At any rate, it is within our experience that a little child was taken seriously ill, and the doctor was sent for. The moment he arrived, and the little one knew, she went into a violent fit of screaming, and when she heard his voice she went into convulsions. The astonishment of the family knew no bounds until they discovered that the nurse had been in the habit of telling the child, when she was disobedient, that the doctor would on the next occasion come and cut her into little pieces, this being the punishment held out by this wretched person for child-ish disobedience. The child had never been ill before, knew nothing about doctors, and so when one arrived she at once came to the conclusion that Nemesis had overtaken her. It required much time and patience to disabuse her mind of this unreasoning terror. There is no doubt that many children have been seriously injured by frights of this and similar kinds, and we fear that parents themselves are not always blameless in this connection, the result being that they bring up a race of timid, shrinking, cowardly children, who are good for nothing in the emergencies of life. Cowardice is easy to cultivate, but is sadly out of place in this life of ours.

The Child and Its Teachers.—Every trace of useful information is carefully concealed from the very young child. A rattle, or at most a rubber doll, is its only plaything. As it grows older it is very slowly and gradually introduced to the various forms of the animal kingdom. Of the mysteries of numbers and of language it has as yet no conception. Its constant questions are for the most part answered "humorously" and hence incorrectly, or they are not answered at all. This eternal "humor" is most galling of all. Why should a human infant be such an irresistible joke? The lower animals take their young seriously and train them from the start with a very definite purpose in view. Yet their possibilities are infinitesimal as compared with those of the average baby. And we sit calmly by and enjoy the "humor" of childhood and insist that the child is enjoying itself also, even though its little soul may be thirsting for information which is laughingly denied it. And we continue to put off the inevitable day when the child will have to take life seriously and hence according to our tradition, sadly. One important point which is quite overlooked by the upholders of the brainless child is the fact that nonsense and silliness are just as taxing to the infant mind as useful information would be. It requires no more mental effort to realize that A is A than to grasp the extraordinary fact that a mass of brownish softness is a "fuzzy little Teddy-bear, yes it is." In fact, the letter A has a dis-tinct advantage. And at a more advanced age it is certainly less puzzling to be told that five and five make ten than to have one's own respectable pink toes described as a series of pigs going to market or en-tering into the various other activities of life.

Parental Care.—The rapid advance of the idea that the State ought to care for the physical, as well as for the mental, growth of its children, draws attention to the discussion brought out by a paper on "Medical Inspection of Schools," at the latest meeting of the Massachusetts Association of Boards of Health. That here is a very wide field for enthusiastic, competent physicians who are fond of children and interested in hygiene and in education, cannot be doubted. Primarily, perhaps, the school medical inspector will concern himself with communicable diseases. But in Massachusetts at least, he must now go further. There are very many remediable physical defects among school children. Hearing, vision, speech, breathing, posture, growth, walking, sitting, standing, teeth, lungs, heart, skin, nervous system or circulation may any of them be at fault. Some of these defects may be very serious. Skilled medical observers alone can detect them; but shall the State also assume the task of seeing that they are remedied.

To many this form of "paternalism" has seemed to be the natural
CURRENT PEDIATRIC LITERATURE

even the necessary result. But Boston's experience proves that the parents of her children are not yet ready to yield their prerogative, or to put it more accurately, still appreciate their duty as parents.

Thus the records show, that while 65 per. cent. of children examined in 1911 were defective in some physical way, only 30 per cent. showed defects in the examination of the following year, 1912; 54 per cent. of those found to have defective nasal breathing last year are relieved this year; 50 per cent. of the cervical glands, 40 per cent. of the defective teeth, and 42 per cent. of the hypertrophied tonsils, have been relieved. These are not complete figures, but are from a large enough group to point the lesson. If the State will furnish the medical examination and will then notify the parents of the physical needs of their children, these parents will, to a very large degree, attend to the matter. They are surely as anxious as any official board can be, that their children grow up strong physically as well as mentally.

On sloughing corneae in infants; an account based upon the records of thirty-one cases ('The Ophthalmoscope,' 1910, p. 782). Sydney Stephenson, in the course of a long paper, fully discusses this disease. The condition is by no means infrequently met with in certain parts of the world, and is not unknown in this country. The author estimates that kerato malacia is encountered in 1 per 1000 of the eye cases attending a children's hospital in the poorer part of London. It affects children whose ages usually range from three to twenty months, and is especially frequent at about the eighth month of life. It chiefly occurs in children of the poorer classes, and according to Knaebel it is disproportionately frequent in twin children, and illegimates are more apt to be affected than legitimate offspring. There is no definite seasonal incidence. The disease is much more frequent during the warmer months of the year. In London its seasonal incidence closely follows that of zymotic enteritis. Without exception the victims of kerato-malacia are marasmic; the vitality of the infants affected has been seriously reduced by "epidemic" or "zymotic enteritis," congenital syphilis, athrepsia, or tuberculosis, named in their order of frequency. About 50 per cent. of those affected succumb, the immediate cause of death being usually broncho-pneumonia or exhaustion. Blindness results in about one-half of the children who survive. The condition is generally bilateral, both corneae being affected. The first sign to be noted is a slight dullness of the epithelium in the lower part of the cornea, but the disease quickly spreads, and in bad cases the entire cornea becomes converted into a soft, greyish-white, pulpy slough, resembling damp wash-leather. At first there is very little inflammatory reaction, but later well-marked panophthalmitis, as a rule, supervenes. Xerosis of the conjunctiva is associated with this affection in about 50 per cent. of the cases. If the baby's nutrition cannot be improved the cornea is likely to perforate. There are two conditions which may cause some confusion in diagnosis: (1) Keratitis xerotica (Feuer), and (2) tropho-neurotic keratitis. Kerato malacia is associated with no specific micro-organism, although in scrapings from the cornea the pneumococcus may be found in about one-half of the cases. Treatment must be both general and local. The general treatment is that, broadly speaking, suitable for marasmus. The proper feeding of the infant is of great importance. In the author's opinion the giving of alcohol in the form of brandy is most useful. Cod-liver oil has a distinct value, especially if given by inunction. Neat's-foot oil is more economical, and is apparently quite as valuable as cod-liver oil. If syphills be present mercury must be given. Mercury with chalk, one-half to one gr. three times daily, should be given, and each dose may be usefully combined with one-half gr. of bicarbonate of sodium and one gr. of aromatic powder of chalk. Mercurial inunction should also be practised. The local treatment of the eyes will include the frequent use of douches of hot saline or boric lotion. Antiseptic drops frequently instilled were most ser-
viceable; of these, argyrol, 15 to 25 per cent., quinine (4 gr. of quinine sulphate to the ounce of distilled water, just enough sulphuric acid being added to ensure a clear solution), and hydrogen peroxide are the best. Physostigmine (one-half per cent.) in vaseline or oily solution should be applied. In certain cases surgical measures may be required. In an appendix notes on the thirty-one cases are given, and at the end references to the literature on this subject.—J. Allen.

Orthopedic Surgery
Under the Charge of
JAMES K. YOUNG, M. D.
Professor Orthopedic Surgery, Philadelphia Polyclinic; Clinical Professor Orthopedic Surgery, Women’s Med. College, Philadelphia.

Assisted by
A. BRUCE GILL, M. D.
Assist. Surgeon to Widener Memorial Industrial Training School for Crippled Children, Philadelphia.


The orthopedist is interested in the subject of visceroptosis because this condition is invariably associated with disturbance of the pose of the body. Imperfect poise results in strain of various of the joints; feet, knees, sacroiliac, lower spinal, and shoulder; and it produces a gradual weakening of the trunk muscles which support both the spine and the viscera. When the shoulders droop and the chest becomes flattened, the lower border of the ribs moves downward and backward and the viscera that lie behind the ribs and beneath the diaphragm are necessarily pushed downward. Thus imperfect poise tends to produce visceroptosis. On the other hand, many chronic joint diseases are probably due to abnormal physiological functioning of displaced abdominal viscera, and the treatment, therefore, of the joint diseases must include treatment of the accompanying visceroptosis.

The author explains in detail how from anatomical causes an imperfect poise produces downward displacement of all the abdominal organs and a consequent abnormal pressure upon the pelvic organs. Therefore, if a displaced organ is sutured in place and the general condition is not corrected, an unsatisfactory result will be met with. In fact, the operation may only make matters worse by throwing the one organ out of adjustment with the other misplaced abdominal organs.

The ideal treatment aims to restore, as far as possible, the normal poise of the body so that all parts of the body may be in normal relationship to one another. In the congenital type of visceroptosis this result is not to be obtained completely, but the conditions may be very much improved by removing the strain upon the viscera that has resulted from the acquired imperfect poise.

The author describes various measures that may be employed to correct the poise. These include the use of exercises and assumed positions, apparatus, massage, and hydrotherapy.

In this article the physician and surgeon will find much food for thought and practice.


The question of what ultimately becomes of transplanted bone
grafts is of much present interest and has given rise to differences of opinion that have divided experimenters and surgeons into two groups. At one extreme are those men who state very positively that bone grafts serve only as a scaffolding for the growth of new bone which takes place from the living bone or bones with which the graft is in contact, and that the graft itself is ultimately absorbed. At the other extreme are those who say that the bone graft loses nothing in being transplanted, and that it itself is the active center of new bone formation.

The author believes that neither of these views is a complete and correct statement of the facts. They have experimentally transplanted portions of the condyles of the femur in cats and rabbits, e.i., a part of a condyle has been replaced by the corresponding part of the opposite femur. The technique has consisted of real asepsis, fair approximation of the transplant to its bed, and reasonable fixation of the graft.

The following results are noted: The transplant rapidly becomes fixed in its new position. The articular cartilage of the transplant shows no gross changes in color or texture. Histological preparations show (1) the early disappearance of the bone corpuscles in the trabeculae of the transplant and in the trabeculae of the host bone for a short distance from the surface of the wound; (2) the transplanted bone, without any loss of substance, is rapidly and completely covered by a layer of new endosteal bone which unites with new endosteal bone from the host; (3) the new bone is formed in all portions of the graft, center and periphery; and (4) practically no changes occur in the transplanted cartilage.

The Spinal Column as Affected by Traction and Hyperextension—a Radiographic Study. By Nathaniel Allison and Archer O'Reilly. This study was undertaken to determine by means of skiagrams the precise effect exerted upon the spine by traction and hyper-extension and by both combined, in normal cases and in cases of Pott's disease.

It was found that vertical traction produces a considerable separation of the vertebral bodies both in healthy and in diseased conditions. Hyperextension produces a wide separation of the vertebral bodies at the point where the force is applied, but also a compensatory increase in the other curves of the spine. The two methods together secure a wide separation of the bodies of the vertebrae without so large an increase in the compensatory curves as occurs when hyperextension alone is employed. In Pott's disease there occurs a diminution of the kyphosis and a separation of the bodies of the diseased vertebrae.

Therefore, it may be concluded that vertical traction combined with hyperextension gives the best results obtained by the use of apparatus in the treatment of Pott's disease.


This article, which is a continuation of several previous articles, deals with chronic arthritis.

The author classifies chronic joint diseases into two main divisions; the first characterized by a proliferation of the synovia and the lymphoid marrow with a resulting atrophy of the cartilage and the bone, and the second by an inflammation and degeneration of the synovia and of the lymphoid marrow with a resulting hypertrophy of the cartilage and the bone.

The first division includes tuberculosis, chronic gonorrheal and syphilitic arthritis, arthritis deformans (the proliferative form of Nichols and Richardson), and certain cases recently described as "infectious arthritis."

The author then enters upon a full discussion of joint tuberculosis, as to etiology, pathology, etc.
Under the discussion of the pathology of the disease he enumerates and criticises the various reasons that have been ascribed for the occurrence of tuberculosis near the ends of the long bones. He then advances his own theory as follows: Tuberculosis throughout the body manifests an affinity for epithelial, endothelial and lymphoid tissues. The red marrow is a lymphoid tissue that occurs in the ends of long bones (yellow marrow is present in the shafts, except in those of young children), short, and flat bones, the vertebrae, the sternum, cranial diploe, carpus, tarsus, etc. The synovia is also a lymphoid tissue. Therefore, tuberculosis occurs in the ends of long bones and almost never, primarily, in the shafts. It occurs also in the other places mentioned above and in the synovia of joints. As age increases less and less red marrow is present in the bones, and bone tuberculosis is less frequent. When bony ankylosis occurs in a joint, the red marrow disappears and the tuberculosis condition is cured. The disease finds its pabulum in the two lymphoid tissues, (the lymphocyte is the food of the tubercle bacillus), and all other tissues are unaffected by an unmixed tuberculosis infection except as to their nutrition. The disappearance of these two tissues is accompanied by a cure of the disease. All therapeutic measures must be based upon this principle.

In children the disease begins more frequently in the lymphoid marrow; in adults it begins in synovia and in marrow with about equal frequency.

In treating a tuberculosis condition in the region of a joint the rules must be (1) to deprive the joint of function, as this causes a disappearance of the two lymphoid tissues, and (2) avoid secondary infection, which infection prolongs the course of the disease indefinitely. In children, radical operations are not to be employed; the treatment should almost invariably be conservative. In adults, conservative treatment is rarely successful. The best result to be hoped for is a stiff joint; and this can be secured by operation, with a cure of the disease. The object of conservative treatment is to deprive the joint of function temporarily; the object of radical treatment is to destroy the function of the joint permanently.


Cleanse the flexon surface of the forearm. Dip the flat end of a sterile wooden toothpick into the tuberculin and apply it perpendicularly to the desired spot. While gently pressing it upon the skin turn it to and fro twice between the thumb and index finger. The result is a small round abrasion of the epithelium without the appearance of blood. The toothpick is burned after being used. Another pick is used for the control abrasion.

Surgical Diseases of Childhood.

Under the Charge of

WILLIAM A. EDWARDS, M. D.

Professor of Pediatrics, University of California, Los Angeles, Cal.

Appendicitis in an Infant Sixteen Days Old with Appendix in an Inguinal Hernia Sac.—Charles M. Remsen, of Atlanta, Ga., reports this interesting condition in a male baby admitted to Johns Hopkins Hospital, May 24, 1911, on account of persistent vomiting, with red colored stools.

The infant had been born 16 days before in the obstetrical service of the hospital after a normal labor.

When twelve days old the patient began to vomit, and this per-
sisted "every two or three minutes for first two days." Following this vomiting became much less marked, but stools were lumpy and red. May 23 a lump was noticed in the right inguinal region which was extremely tender on palpation.

When admitted to the ward the infant was very restless, continually crying, and jerking its extremities about very actively. From the right external abdominal ring protruded a swelling which filled the ring completely on the one hand, and on the other extended well down to the lower limits of the scrotum and surrounded the testicle and cord so that it was impossible to palpate these.

On operation the aponeurosis of the external oblique was divided parallel to its fibres from the external ring upward a distance of 4 to 5 cm. Underlying this was the continuation of the tense sac which had been felt as the portion of the tumor above the constriction. Below this was an entirely separate sac reaching along the cord to the bottom of the scrotum, which proved to be merely a hydrocele involving the tunica vaginalis and a part of the cord. In the upper sac was a definite hernial sac in which there was a markedly inflamed, indurated and reddened appendix, on the surface of which were numerous splotches of fibrin. The distal half of the appendix, which was quite long (about 8 cm.), was caught in the hernial pouch and glued in this position by an outpouring of fibrin and the presence of some early delicate adhesions. The proximal half of the appendix was contained in the general peritoneal cavity and the hernial sac, at its neck, approximately bisected this organ. No bowel was in the sac, and the neck of the sac was neither strong enough nor tight enough to have caused strangulation of the appendix. On loosening the latter from its bed in the hernial sac there was no difficulty in withdrawing that organ from the peritoneal cavity; and enough caecum was forced through the neck to allow the turning back of a peritoneal cuff on the base of the appendix, to crush and ligate the muscular and mucous coats at this point, to ligate, excise and to turn in the base after carbolizing the stump, with a purse-string of fine black silk. The vessels in the mesoappendix were ligated with the same material. After tying off the sac high up and allowing it to drop back into its bed after excising the redundant portion, the lower sac was attacked. This was for the most part excised, a small portion being left—enough to manufacture a small tunica vaginalis in order to avoid perhaps any difficulties in the future development of the testicle on this side. The closure of the canal was affected by drawing the cremaster under the internal oblique, the lower leaflet of the external oblique aponeurosis over the internal oblique and finally the upper leaflet of the external oblique aponeurosis over the lower leaflet of the same structure.

The patient made an uneventful recovery and left the hospital in 10 days. Inspection of the child about six weeks later showed its general condition to be normal. Locally the seat of operation showed a firm ring, through which the cord passed into the scrotum. The cord and testicle were normal. There was no evidence of any existing hernia.—(Annals of Surgery, December, 1912.)

Rupture of Mediastinal Lymph Node into Bronchus.—Dr. A. L. Goodman, in New York Medical Journal, described a case showing practically no symptoms until the sudden onset of the acute condition, which required almost instant surgical intervention. He thought the cases were properly divided into two classes, tuberculous and non-tuberculous, and that the non-tuberculous were due to streptococcic, or staphylococcic infection or a mixture of the two. He said that prognosis depended upon whether the node remained small or went on to suppuration or perforation. He considered that where medical treatment could be used it would be practically that used for incipi- ent tuberculosis and guaiacol and arsenic given for a period of a year or more, but where the condition was sudden in onset and violent, surgery should be resorted to at once.
Dr. Willy Meyer, of New York, said that the case reported had been his and that he considered the prompt surgical intervention the means of saving the patient's life. Such conditions were not rare in adult practice, and he cited the case of a young woman of his practice who was brought to the hospital following a slight accident from an automobile and developed a cough and symptoms of lobular pneumonia and thoracic trouble, probably tuberculous. From the x-ray picture it was determined that she had a cold abscess which had perforated into the bronchial tree. He thought that in such cases, unless there was immediate outlet for the mass, the condition proved fatal.

Report of a Case of Staphylococcus Meningitis in a Child.—Dr. Frank Spooner Churchill, in the New York Med. Jour., read the report of a case in a 21-months-old child with history given by the mother pointing to intestinal rather than meningeal symptoms. The only meningeal symptoms were slight rigidity of the neck and drowsiness. Lumbar puncture showed the presence of staphylococci. Two more lumbar punctures were made and from the last an autogenous vaccine was prepared, after a single injection of which the temperature immediately became normal and the child made an uneventful recovery with no relapse after four years. He called attention to the fact that no conclusions could be drawn from the single case but he wished to report it, hoping others would try similar treatment in like cases.

Dr. H. Lowenburg, of Philadelphia, said that in a case of lobar pneumonia that developed streptococcal synovitis in which he used a stock vaccine there was a marked reduction of temperature for about three days. He said that his patient was extremely emaciated and died following the operation, but he thought the vaccine had a marked influence in reducing the temperature.

Dr. G. P. Gengebach, of Denver, said that he thought if the skin was well washed and if the site of the puncture was touched with tincture of iodine there was practically no danger of contamination. He called attention to the necessity of avoiding deep puncture so as not to enter the blood stream.

Dr. Churchill thought there must be some therapeutic advantage in repeated lumbar puncture and regretted that in his case it had not been done oftener. He used a stock vaccine until he could obtain the autogenous, but had made no comparative studies between the two. He did not believe contamination from the skin was likely if ordinary asepsis was practised. He urged practitioners to perfect their technique of lumbar puncture.

Treatment of Inguinal Hernia in Children.—Dr. Arthur E. Hertzler, in New York Medical Journal, advances the idea that all hernias were congenital and said that he did not believe that any hernia was ever cured by a truss and advocated operation at once as the presence of the hernia was a constant hindrance to the activity of the child and sometimes even a menace to life. He said that no reports of cure by wearing a truss could be accredited until at least twenty-five years had elapsed as the hernia was apt to reappear at any time. He said that so far as his experience went the only patients who had not progressed satisfactorily were those allowed to go home immediately after the operation where the dressings had become soiled and infection had resulted.

Dr. C. G. Buford, of Chicago, said that the treatment of hernias in children and in infants was entirely different, that in infants it was practically impossible to put on a dressing that would not get soiled and endanger the patient through infection. He thought that many cases of hernia in very young children were not congenital but acquired. He deplored the advising of operation for anything that could possibly be either treated or tided over in young infants because of their extreme liability to infection. He said that the only hernias that should be operated upon were those in which for some reason or an-
other the baby could not wear a truss, or the parents insisted upon an operation, or where the hernia came out in spite of the truss. He said that if physicians would take pains in adjusting the truss, would superintend its adjustment themselves, there would be found few patients who could not wear them satisfactorily. His experiences indicated that the hard rubber truss, with a pad to suit the individual needs of each patient, kept strictly clean and properly placed could be worn comfortably and without hampering the movements of the child.

Acute Acid Intoxication in Children.—Dr. Thomas C. McCleave, in reading this paper called attention to the prevalence of a fairly definite symptom complex in which acidosis was a constant factor, occurring in children of from two to ten years. He thought that the clear clinical picture presented made a differential diagnosis fairly easy, but called attention to the obscurity of the etiological factors and the fact that because so few cases resulted fatally, there were few confirmatory data obtainable through autopsy. He had determined from his experience that while the attacks were always due to intestinal toxemia, nervous conditions were a large element and no other single remedial measure so important as attention to the throat. He called attention to the fact that when children suffered from repeated attacks there was sure to be some degree of toxin absorption which acted upon the liver and by nervous, vasomotor or other disturbance precipitated the attack. This being the case, he said, they offered excellent opportunity for satisfactory therapy through the removal of causative factors, the regulation of diet and hygiene and the periodical administration of alkalies. He said that as the condition was more common than was generally supposed it was necessary that physicians should be familiar with it.

Dr. J. Zahorsky, of St. Louis, took exception to the descriptive term "dusky" as applied to the appearance of the faces of these patients. He said he was almost uniformly mottled and flushed. He thought that one thing would often prove of diagnostic value. He reported a case in his practice that had entirely cleared up after circumcision, and thought this pointed rather to the fact that any slight operation would be of benefit in the condition because of its result upon the nervous organism of the child rather than that the removal of adenoids, tonsils, or appendix was curative. He considered the disease directly related to migraine because his cases usually presented in families showing general metabolic disturbances. He urged physicians to pay particular attention to the liver because his cases all showed enlargement readily discernible by palpation.

Treatment of Hemorrhagic Conditions in Infancy and Childhood.—Dr. Thomas E. Cooley, in New York Med. Jour., said that temporary or permanent lack of some one or more elements of the blood was probably the cause of the inability to clot, there being probably different elements in different cases, although calcium had not been proved to be lacking in any case. He said that so generally was this the accepted theory that almost the only treatment now being used was that which supplied the lacking elements to the blood. He had used human serum, horse serum, and whole blood with good results, but said that in melena his results had not been as good as Clay's, probably because he had not used enough. He said that surprisingly little had been written on the use of human blood, but he thought it scarcely reasonable to suppose that the small amount injected supplied all of the lacking elements in the blood and rather leaned to the idea that the injected reacted as a stimulant to the patient's blood. He urged more frequent use of transfusion in these cases, and the use of it early in the treatment rather than as a last resort. He said that since the simpler technique had been worked out this could be used by almost anyone and as it supplied all of the elements of the blood it was the most surely beneficial. He had found the amount really necessary to be injected quite small and it was deserving of trial in any of the hemorrhagic diseases of a toxic nature.
Report of a Case of Fecal Tumor Associated with Hirschsprung’s Disease.—By Alois B. Graham, A. M., M. D., of Indianapolis, Ind.

Dr. Graham reported before the Amer. Proctological Society a case of fecal tumor associated with Hirschsprung’s Disease, the clinical history of which is unique and exceedingly interesting. The patient, a young French woman, aged 27, stated that she had undergone three abdominal operations for Hirschsprung’s Disease, or Megacolon.

Present illness dates from birth. Not unusual to go a week or ten days without a stool, and then evacuation was produced only by enemata.

At the age of 12, her condition was diagnosed as one of pregnancy on account of the vomiting and the appearance of the abdomen.

At the age of 19, she suffered an attack of complete intestinal obstruction due evidently to fecal tumor. She was operated, and a large fecal tumor was removed from the sigmoid. Six months later, she was operated for post-operative adhesions. No resection of the bowel or short-circuiting operation was performed.

At the age of 25 she suffered an attack of complete intestinal obstruction. She was operated and a large fecal tumor was removed. Patient stated that the bowel was plicated in closing. Wound healed promptly, but she remained in the hospital for three months purely for clinical purposes.

August, 1912, she, for the third time, presented symptoms of complete intestinal obstruction. She had been absolutely constipated for seven days. Abdomen enlarged and everywhere tympanitic except in the lower right quadrant, where there was a dull area corresponding to a large tumor which could be readily palpated. Tumor, a fecal mass, was exceedingly hard and did not pit on pressure. It could be easily moved in every direction throughout the abdomen. Attacks of violent, colicky pains were frequent. Vomiting was persistent, pulse 120, temp. 101 F. Hydrogen peroxide, introduced into the rectum, had no effect on the tumor, but produced excruciating pains over the entire abdomen. Patient consented to operation with the promise expected that nothing radical be attempted. She requested that the fecal tumor be removed, but refused to give her consent to any short-circuiting or resection of the bowel.

Median incision. No adhesions. Fecal tumor in sigmoid. Tumor of “stony” hardness. Its greatest circumference was 19½ inches, its weight was 64 ounces. The dilation which was confined to the sigmoid was very marked, the greatest circumference being 20 inches.

Patient made an uneventful operative recovery and was discharged from the hospital on the 10th day. She gained in weight and appeared to be in the best of health. She experienced no difficulty in procuring daily evacuations with the aid of small doses of cascara.

December 15th, 1912, was the date of her last visit to the writer’s office. At this time she was doing nicely. Inquiries as to her whereabouts were made and the reports were to the effect that she has returned to France. Information was received the latter part of April that patient had gone to Chicago from Indianapolis. She evidently suffered another attack of intestinal obstruction. She was operated there April 19th, 1913, and died three days later.

Further Observations on the Surgical Anatomy of the Large Bowel.—By Granville S. Hanes, M. D., of Louisville, Ky, (Amer. Proctological Society.)

Few realize that the capacious portion of the colon is at its cecal extremity. The diameter of the average cecum is estimated at three inches, which is about the same as the rectum, though the cecum and ascending colon have a much greater capacity than the rectum and lower extremity of the sigmoid. The large intestine gradually decreases in size from the cecum to the rectum; the descending colon measuring one and one-half inches, or even less, at its narrowest point.
These physical conditions explain in a measure, the locality to which large quantities of fluids are transported when injected into the rectum.

The question of antiperistalsis in the large intestine in man is yet to be settled. It has been suggested that anastalsis may be inferred to exist in the proximal human colon for the reason that rectal enemas have been observed to traverse the entire length of the colon and escape through an artificial opening in the cecum. Also, because surgeons have attempted to stop a fecal-fistula discharge by transplanting the ileum into the transverse colon and sigmoid, but without success. The fact that rectal enemas have been seen to pass through the cecal fistula is, he is confident, little evidence of the operation of an anti-peristaltic force.

An ordinary colon tube was introduced two or three inches into the rectum of a dog, and through a funnel inserted into the proximal end of the tube was poured in bismuth-buttermilk, and by the x-ray the author observed it traverse the large intestine to the ileo-cecal junction with no sign of anti-peristaltic movements. Similar experiments were made on children with corroborating observations. He has seen a pint of bismuth in suspension, when introduced into the rectum of an adult, pass around to the cecum in a few minutes with no evidence of aid by anastalsis.

Under normal conditions peristalsis in the large bowel is a slow process, and it is no more than natural to suppose that anastalsis is also slow in its operation. The brief time, then, required for fluids to pass from the rectum to the cecum compels us to consider the influence of other and more potent agents on the intestinal contents. Two factors are in operation when fluids are conveyed from the rectum to the cecum. The first is the distensible and elastic nature of the intestinal tube; the second is the hydraulic principle which controls fluids wherever they may be. If fluid is forced rapidly into the rectum, that organ will be seen to be widely distended; but this same fluid can be seen to make its way up the intestinal tube along the path of least resistance. The distended rectum, because of its elastic nature, presses upon the contents till every drop of fluid within its lumen is subjected to an equal pressure. So if additional fluid is forced into the rectum the same factors will continue to operate.

If the ileum is transplanted into the transverse colon or sigmoid the watery intestinal contents will be forced by the elastic intestinal tube in the direction of least resistance. The right segment of the colon is the capacious portion of the large bowel, so if fluids are under greater intestinal pressure in the lower bowel the fluid contents will travel up to the cecum.

The author says, that even if we do admit the existence of anastalsis in normal conditions of the colon, he does not believe it to be an important factor in conveying fluids from the rectum up into the colon.

Hanes had a series of three x-ray pictures made on the same individual to show what actually happens when tubes are introduced into the bowel. The first shows a thirteen inch spectroscope introduced its entire length. The distal end is one inch above the umbilicus. The second shows an ordinary colon tube introduced its full length after the removal of the proctoscope. The tube passed along the sigmoid up to the highest point, (one inch above the umbilicus), and then turned upon itself, the distal end passing back into the rectum. The third radiograph shows the bowel injected with bismuth buttermilk, and the thirteen-inch sigmoidoscope introduced again. This picture shows that it is impossible to pass any instrument high up in a normal colon, except by the greatest accident. The sigmoid is lifted up into the abdominal cavity; its lower arm is occupied by bismuth and the metal tube; while the upper segment of the sigmoid is seen very distinctly where it has dropped back from a point opposite the umbilicus into the pelvis to its junction with the lower extremity of the col-
on. He claims the latter radiograph proves that it is impossible to pass a non-flexible instrument beyond the first half of the sigmoid.

To control the outflow of fecal material in colostomies the author has found, in five cases operated since January of this year, that the hard rubber rod can be allowed to remain permanently, when used as in the Maydl operation. The opening in the intestine is above the rod. A thin gauze dressing is applied over the bowel, and a strip of gauze is thrown around the knuckle of the intestine and overlying gauze is then tied under the supporting rod. The strip of gauze constricts both the upper and lower segments of the bowel, and exerts a most satisfying control over these artificial openings.

Infectious Diseases.

Under the Charge of

ST. GEO. T. GRINNAN, M. D.

Associate Professor Pediatrics, Medical College of Virginia; Visiting Pediatrist, Memorial Hospital, Richmond, Va.

Atypical Forms of Meningitis (Posterior Basic Meningitis; Aseptic Meningitis).—Dr. A. Sophian, Medical Record, read this paper, giving the clinical symptoms, laboratory diagnosis, and treatment of posterior basic meningitis: the etiology, clinical symptoms, laboratory findings, diagnosis and treatment of aseptic meningitis. He said that in practically every case of posterior basic meningitis the prognosis was fatal, and urged most careful diagnosis so that if the physician in charge did not wish to treat the case he would not aggravate it by wrong treatment. He reported that out of fifteen cases two definitely recovered, so that there was some little hope of recovery which should not be mitigated by wrong treatment.

Dr. John Lovett Morse, of Boston, said that a few years ago it had been expected that very definite diagnoses could be made in all cerebrospinal conditions by lumbar puncture, but as it was studied more carefully it was found that differential diagnosis was not easy. He reported a case of posterior basic meningitis seen recently in which the fontanel had been depressed. He punctured the ventricle and the fluid did not run out under pressure. He considered the condition almost hopeless and said that his experience with serum had been discouraging. He did not consider lumbar puncture at all dangerous.

Dr. Sophian in closing said that in tapping the ventricle the stilet should be left in the needle this would become clogged with brain substance. He thought the only dangers possible were injury to the basal ganglia and hemorrhage, but these were overcome with selection of the proper site.

The Hospital Management of Contagious Diseases.—Dr. D. L. Richardson, Medical Record, said that his object in presenting this paper was to give the technique and results obtained by rigid asepsis in the care of patients suffering from contagious diseases. He said that no matter what the method of separation was the nursing employed was the greatest factor, and it was therefore necessary to get the fullest co-operation of the nurses to prevent the spread of contagious diseases, but once this was done and the technique carefully followed there was no danger in admitting contagious diseases, with the possible exception of measles and chicken pox, into any general hospital. He said that the theory of air transmission of disease had been practically exploded in the French and German hospitals so that the matter was one of absolute sterilization of everything that came in contact with the patient. He described in full the arrangement of buildings, construction of rooms, care of apparatus, utensils, and garments used in the Providence Hospital and said that with their method no pro-
phylactic antitoxin had been used, nor antiseptic by the attendants in washing their hands, nor was fumigation necessary.

**Intradermal Tuberculin Test in Pediatric Practice.**—L. Jeanneret asserts, after experience with the Mantoux intradermal tuberculin reaction in 1,012 cases, in which altogether over 5,000 tests were made, that this reaction is of great value in the diagnosis of tuberculous disease in children less than seven years of age. A positive reaction reveals the presence of any tuberculous focus, whether active, torpid, or healed. It may fail, however, in cachectic states, and in the presence of measles, typhoid fever or influenza. The size of the area of reaction on the skin generally parallels the extent of the tuberculous focus, though the state of activity of the focus, the cutaneous sensitivity of the individual, and the degree of resistance of the organism to the infection are to be thought of also as modifying factors. Series of tests, which can be made without any risk, may be of prognostic value, the reacting area becoming smaller as the condition improves. They also proved of distinct value as a guide in tuberculin treatment, the area enlarging where excessive or too frequently repeated doses of tuberculin were being given, and becoming smaller again as the amounts administered were diminished. The test was carried out every two weeks.—New York Med. Jour.

**Antityphoid Vaccination in Children.**—The use of antityphoid vaccine among children has, as yet, received scant attention. Osler says that "typhoid fever is a disease of youth and early adult life. Of the 1,500 cases treated in Johns Hopkins Hospital, there were under 15 years of age, 231; between 15 and 20, 253; between 20 and 30, 689; between 30 and 40, 227; between 40 and 50, 88; between 50 and 60, 11."

In a recent issue of The Journal of the American Medical Association, Major Russell, of the Army Medical Corps, discusses the inoculation of 359 children, between the ages of 2 to 16 years, who have been vaccinated by fifty different physicians in many parts of the United States. No harmful effects have been reported in any of the 353 children and, so far as known, none has contracted typhoid fever, although some of the vaccinations were made over three years ago. Major Russell regards it as a particularly valuable method in the case of children and young people leaving home for summer vacations, school, college, etc. The importance of checking typhoid among the young is shown by the fact that in the registration area of the United states there were in 1909, the last year for which complete mortality statistics are available, a total of 3,356 deaths from typhoid fever in patients under 20 years of age, out of a total of 10,722 of all ages, or almost one-third of all deaths from the disease. They were distributed according to ages as follows: under 2 years, 97; under 3 years, 139; under 4 years, 132; under 5 years, 110; 5 to 9 years, 647; 10 to 19 years, 2,174. A very large proportion of these deaths can, without question, be prevented by the more frequent use of antityphoid vaccine.—J. A. M. A.

**Cutaneous Reaction to Tuberculin in Childhood.**—Lapage, of Manchester Children's Hospital, believes thoroughly in the use of tuberculin in children and emphatically states that all tubercular cases give a reaction. He finds the cutaneous method more suitable for practical purposes, even though the subcutaneous methods give the highest percentage of results. He summarizes his experimental investigations as follows:

The results of the clinical examination and the tuberculin test are confirmatory of one another, the reaction occurring far more frequently in those showing symptoms pointing to tuberculous infection.

The x-ray examination and the cutaneous tuberculin test correspond fairly closely if their results are properly interpreted.

A reaction indicates that the subject has been infected with tu-
berculosis and does not mean that the disease is progressive or even active.

We have at present no method of performing the test to afford us a means of distinguishing between active and passive disease.

A marked reaction or a reaction in a healthy person may be of good import and need not bear a sinister interpretation.

Slight reactions seem to occur more often in cases negative or only possible clinically.

A negative result may follow the test in children infected with tuberculosis: (1) if the disease is advanced; (2) if there is cachexia; (3) in very acute disease; (4) in mixed infections or cases complicated by acute disease.

A single negative test does not exclude tuberculous infection, repetition of the test increasing the percentage of positive results considerably (28 per cent.).

Even a negative result on repetition of the test does not always exclude infection, because some cases are only positive on the third application and others, positive to x-ray examination, but neither advanced nor cachectic in nature do not react to repeated tests. Therefore, judged by the x-ray examination, the cutaneous tuberculin test cannot be regarded as absolutely reliable in excluding tuberculous infection. There is greater difficulty in diagnosing occult tuberculosis after the age of two years. In indicating tuberculous illness the test is of greatest value in young children.—(Brit. Jour. Child. Dis., December, 1912.)

The Incidence of Ophthalmia Neonatorum in London.—N. Bishop Harman (British Med. Jour., N. Y. Med. Jour.) bases his statistics upon the official report of the Health Officer of the London County Council, which covers only nine and a half months, the first period during which the reporting of the disease was compulsory. The corrected figures for the year would be 850 cases, an incidence of 0.834 per cent. of all the reported births, excluding stillbirths. This is in close accord with an analysis of the frequency of the disease based upon the records of 12,680 live births in private practice, the incidence in this series being 0.867 per cent. Of the entire number of cases mentioned in the official report 231 were followed to their ultimate issue. Of these, 218 were reported to have recovered completely, leaving thirteen cases in which there was some permanent impairment of sight. The incidence of permanent injury is 5.6 per cent. in this series. In the series from private practice the incidence was found to be 5.4 per cent. In every case but one the eyes were cleansed immediately or shortly after birth. In 125 of these, however, the only antiseptic used was boracic lotion and in twenty-two others sterile water only. In fifty of the cases there was an interval between the birth of the child and the use of the solution in the eyes. It is of interest to note that by far the largest number of the cases occurred on the third or fourth day of the puerperium. In forty per cent. of the cases there was a history of vaginal discharge in the mother. In his conclusions based upon these findings Harman states that the very small incidence of the disease, and the extremely slight likelihood of the permanent injury of the eyes, seem to render the prophylactic use of potent disinfectants unwarranted. He believes that the proper way to approach the prevention of the disease is to treat the mother prior to her delivery, so as to cure the vaginal condition which is usually present. He feels that the danger of injuring the infant's eyes by the antiseptic solutions is such as to render their use almost as dangerous as the disease which they are intended to prevent.
BOOK REVIEWS

The Modern Treatment of Nervous and Mental Diseases.—By eminent American and British authors. Edited by William A. White, M. D., Superintendent of the Government Hospital for the Insane, Washington, D. C.; Professor of Nervous and Mental Diseases in the Georgetown University and in the George Washington University; Lecturer on Mental Diseases in the U. S. Army and U. S. Navy Medical School, Washington, D. C., and Smith Ely Jelliffe, A. M., M. D., Ph. D., Adjunct Professor of Diseases of the Mind and Nervous System in the Post Graduate Medical School and Hospital; Visiting Neurologist to the City Hospital; Consulting Neurologist to the Manhattan State Hospital, New York, N. Y. Two octavo volumes, containing about 800 pages each, illustrated. Per volume, cloth, $6.00, net. Lea & Febiger, Publishers, Philadelphia and New York, 1913.

The second volume of this unique work has made its appearance within a few weeks after the publication of the first. It deals with matters of great interest and extreme practical value, and its pictorial department is fully up to the high standard of the text. Among the many subjects discussed are the Neuroglia and Neuritides, Injuries of the Peripheral Nerves, Muscular Atrophies and Dystrophies, Headaches, Spasmodic Disorders, Epilepsies, the Meningitides, Syphilitic Diseases of the Nervous System, the Use of Salvarsan and Neo-salvarsan, Cerebral Hemorrhage, Embolism and Thrombosis, Disorders of Expression, Stuttering, Diseases of the Cranial Nerves and Lesions of the Spinal Cord, Diseases of the Optic Thalamus, Midbrain and Cerebellum, Paralysis Agitans and Multiple Sclerosis, the Toxemias of Dangerous Trades and of Drugs, and the Surgery of the Brain and Spinal Cord. While these volumes go fully into the most modern medical phrases of the issues under discussion, they devote a large amount of space to the broader question of prophylaxis, which is obviously the department where the greatest and most far-reaching results can be attained. This work marks a new departure in giving full consideration to such subjects as Eugenics and Heredity in Nervous and Mental Diseases, Education, Sexual Problems, Educational Treatment of the Feeble-Minded, Delinquency and Crime, Immigration and the Mixture of Races and Alcoholism and the Alcoholic Psychoses. It then takes up the treatment of the various forms of nervous and mental diseases, and discusses them conjointly, for the authors and editors regard the nervous system “as inclusive of the mind.” It exhibits throughout the most modern points of view, and the most advanced methods for handling these cases. It is of prime interest not only to all medical men, but also to hygienists, government, State and municipal officials, legislators, military men, social welfare workers, charity organizations, and all those who have to do with the betterment of these unfortunate classes.

In these two volumes the practitioner now has, in most convenient form, the latest and best knowledge concerning a very puzzling and difficult class of cases.


All are agreed as to the value of the nurses’ work in the school, in the factory, in the social part of dispensary work, milk stations and in general preventive work. In all these activities a fundamental
knowledge of the principles of hygiene and public health is necessary for intelligent work and usefulness. This work is an attempt to give the nurse a working knowledge of the elements of hygiene in all its varied branches.

All medical men have for years realized the great possibilities of hygiene and preventive medicine, and though much good has everywhere been accomplished by the institution of hygienic measures, a great deal remains to be done, and this must be largely achieved through the education of the public. In the attainment of this end, no factor is as important as the nurse. Every day she has opportunities to impress upon the laity some of the principles of hygiene and their practical application, and it is therefore one of the most essential elements of her training that she should be well informed on a subject of such universal importance. This new work from the pen of Dr. Price is admirably suited to the needs of the nurse in the discharge of her professional duties and its simplicity of diction renders it equally valuable for home use. It is a work to be recommended to all persons interested in the prevention of the spread of disease.

Diet Lists of the Presbyterian Hospital.—Compiled, with notes, by Herbert S. Carter, M. D., Assistant Visiting Physician to the Presbyterian Hospital, Associate in Medicine at Columbia University, etc. 12mo of 129 pages. Philadelphia and London: W. B. Sanders Company, 1913. Cloth, $1.00 net.

The diet lists contained in this booklet were prepared for use in the Presbyterian Hospital, New York City. The comments of the different diets being supplemented by the author. The aim of the compiler is to show the rational menu in the quantity of protein recommended allowing a sufficient margin of safety and still be within reason or below the standard of supposed protein requirements. The compiler delineates menus required for men and women patients on purin free, low calcium or salt free diets. This volume is a very handy one, at the same time very valuable to physicians, and we beg pleasure in commending it.


This handy little manual, while written primarily for laymen, will be found of value to physicians and especially those engaged in the medical inspection of public schools; intended primarily for their use, the effort of the authors has been to give a clinical picture, as complete as possible, of the leading features of the various infectious diseases; questions of pathology have been only lightly touched on and the treatment only referred to in a general way. It is a book we can recommend to physicians and nurses engaged in school work.
K. & O. DOUCHE FOR THE APPLICATION OF
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children has shown conclusively that they are by no means infrequently subject to these diseases. Not only the rarer infections of the bladder (eg., colon bacillus cystitis, upon which an editorial comment appeared in Pediatrics last year,) are to be feared, but many others as well. There would be fewer reports of "gastric fever," "typhoid," and "congestion of the lungs" in babies, if the urine were examined. An intelligent mother or nurse can almost always save a few drachms of urine if taught how; and a few drachms are quite enough for examination as to albumin, sugar, leucocytes and casts, which are the chief points in any ordinary clinical analysis. When the trouble is so small and the comfort of knowing what the urinary system is doing is so great, one wonders at the blindness of the man who waits for dropsy or uremic convulsions before "suspecting" that something is wrong with the baby's kidneys. A safe practical rule, and one from which there should be no deviation, is to examine the urine of every patient, regardless of his age and of his apparent disease. The result of every examination will be "more light." Leube's words on the subject should be framed and hung where the professional man can see them every day: "The omission of a urinary examination I heed to be nothing short of a capital error."

TREATMENT OF FRACTURES AT THE LOWER END OF THE HUMERUS

The successful treatment of these fractures depends almost entirely upon the accurate adjustment of the fragments and their subsequent retention in the proper position. Reduction may perhaps be most readily accomplished by flexion of the forearm at a right angle, combined with extension and manipulation while the parts are in this position. As this is the position of greatest relaxation of the joint, it is necessary to adjust the dressings very carefully to avoid recurrence of the displacement if the usual method of fixation at a right angle be employed. All fractures at the lower end of the humerus, however, may be treated by putting them up with the forearm flexed at a very acute angle after reduction has been accomplished. The fragments are then held firmly between the coronoid process in front and the ligaments and muscles behind. H. S. Smith maintains this position with a broad figure-of-eight bandage around the chest and the acutely flexed up-
EDITORIAL

per extremity. R. Jones simply makes a few turns of a roller bandage above the angle formed by the forearm and arm, and suspends the wrist from the neck. Occasionally the extreme flexion will interfere with the circulation in the forearm. Should swelling occur the angle must be increased. The arm is kept up for about four weeks before passive motion is begun. This method is easy to apply while the results obtained are quite as satisfactory as those from the old method of fixation at a right angle.

BACKWARD, TRUANT AND DELINQUENT CHILDREN

In speaking of our modern school systems, a prominent educator says that three criticisms of modern day schools of all classes have been and were being made. He said that it was alleged that "we are pulling all sorts of children through the same kind of a hole; that we are attempting so many things that it is not within the range of possibility for us to do anything well, and that we do a little in many cases, and in others do nothing to fit the child for useful work." It is said, he continues, "that some children are tall and some are short; that some are brilliant and others are stupid; some are versatile and can grasp many things; others can do but few things. It is charged that instructions are furnished for average children in an average way and that a general makeshift takes the place of individual attention to individual needs."

These statements might all be true, and yet they are far from covering the situation. He also said that in the schools under consideration there are three distinct classes of children. In the first class, which is the largest, are what may be called the intellectual children, those who love to go to school, have a liking for books, settle to their desks and do their work in a fairly creditable way—the boys and girls of the old-fashioned time and of the blood that flowed in our ancestors' veins, boys and girls who have intellectual strength, power, stamina, backbone, resolution and capacity to do and do well.

In the second division are those children who dream dreams and see visions, and if they are fortunate to fall into wise hands, grow into poets, musicians, painters; those wonderful people who know more about the future than all historians know concerning the past, who see days that have not yet dawned, people who are difficult to handle, uncertain in management and liable to drift into all sorts of strange ways if the
teacher is not wise enough to see what these sensitive, emotional, delicate children need to make them what God made it possible for them to become.

In the third class we have the physical child—the child that wants to see, to manage, to handle work, and to work over, to work in and to work out, and then to enjoy what is possible for him to become.

Reference was then made to three other classes, but few examples of which are to be found in Maine—the deficient, incompetent and delinquent. In the state during the past year there were 425 children between six and fourteen years of age who applied for admittance to the common schools who were considered unfit for the instruction given. To arrive at the number who properly belong in this class the speaker multiplied by four the number thus ascertained.

In one class are the strays, the freaks and the odd ones, children who are everything by turn and nothing long; children who are saints today and far from being sweet sinners tomorrow; children never to be counted upon. Dr. Stetson told of such a child in a Maine town who became such a pest that the teacher, in a moment of irritation expelled him. As he went along the highway the boy fell into a bitter mood, thinking he had been abused. He came upon a group of people about a balky horse. The owner had tried various means unsuccessfully. The boy gathered some damp snow, moulded it into a hard, smooth snowball, and held it under the horse’s nose. The horse became restless, then started with the load. The owner turned and thanked the boy. “Don’t bother,” said the lad; “the next time that horse stops give him a new sensation.” It was the impression of the speaker that the boy had exactly diagnosed his own case. He was strung with so many strings that he needed not infrequently a cold snowball pressed against his nose.

Prominent eugenists advocate that such influences be brought to bear upon fathers and mothers that intelligent and sympathetic study of children be made a part of the regular responsibilities of fathers and mothers. The present curriculum of the common school, with its twenty-seven or twenty-eight subjects, ought to be condensed. “Give the teacher time to set the intellectual boy upon his feet. open the windows for the poet and artist, put the physical child in contact with life and nature, to determine who are the incompetents and criminals, and to hold steady the child that walks all right sometimes and
all wrong many times. One of these days, through philanthropic agencies, through local assistance, through state aid, we shall have specialists whose business it will be to work with the children and with the teachers, to tell us what to do and how to do it, and then we shall have that condition of affairs which will make it possible for every child to have a fair chance to make the most of the best in him.

DEPARTMENT OF AGRICULTURE ADVISES THAT MILK BE PASTEURIZED AT LOW TEMPERATURES

Washington, D. C., In order to determine the best way of pasteurizing milk so as to kill the disease germs and yet not give the milk a cooked flavor or lessen its nutritive value, the Department of Agriculture, through its dairy division, has been conducting a series of experiments, treating milk at different temperatures and for different lengths of time. According to the report on these experiments in bulletin 166 of the bureau of animal industry, when milk is pasteurized at 145 degrees F for thirty minutes the chemical changes are so slight that it is unlikely that the protein (muscle building element) or the phosphates of lime and magnesia are rendered less digestible than they are in raw milk.

Moreover, from a bacteriological standpoint, pasteurizing at low temperatures is found to be more satisfactory than pasteurizing at high temperatures. According to bulletins 126 and 161, where low temperatures are used, the majority of bacteria that survive are lactic acid organisms which play an important part in the normal souring of milk. When milk is efficiently pasteurized at high temperatures, the bacteria which survive are largely of the putrefactive kinds, and milk so treated, if kept for any length of time, has a tendency to rot instead of sour. From the standpoint of economy, the technologist of the Dairy Division finds that pasteurizing at low temperature calls for less heat. It is found that it takes about 23½ per cent. less heat to raise milk to the temperature of 145 degrees F than to a temperature of 165 degrees F. A similar gain is a saving of the ice needed, because it will require 23½ per cent more refrigeration to cool milk to the shipping point when it is pasteurized at the higher temperature. The department, therefore, recommends that "when market milk is pasteurized it should be heated to about 145 degrees Fahr. and held at that temperature for 30 minutes."
Probably the greatest progress in diseases affecting the nervous system has been made in recent years in those now classified under the infectious diseases. The meningitides from the diagnostic standpoint can now receive the most careful scrutiny and exact bacteriological determination by lumbar puncture and examination of the spinal fluid. In this respect the meningeal infections have reached greater diagnostic precision than the respiratory or alimentary infections. It is necessary, however, to issue a word of warning in regard to the indiscriminate use of lumbar puncture in doubtful cases presenting brain symptoms. Thus in the several forms of bacteriemia, including pneumonia, the puncture of the spinal canal may result in infecting the meninges with a virulent microorganism. Such instances have come under my observation. In feeble infants the resulting shock may endanger life. In poliomyelitis the extreme hyperesthesia of the patient renders even this trivial operation exceedingly difficult, and I do not believe it should be used unless the clinical symptoms render the exclusion of meningitis impossible.

The treatment of cerebrospinal fever by Flexner's serum now rests upon sufficient experimental and clinical evidence to declare it a positive boon to humanity. However, in other infections of the meninges little progress has been made. It is true the intraspinal injection of hexamethylenamine hts seemingly cured cases of septic meningitis following otitis media in the hands of Haskin and McKernon. Dr. Dwyer reported three cases of meningitis with recovery after the use of urotropin and

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the Hiss extract of lekocytes. This winter I tried the injection of urotropin-salt solution in a case of pneumococcic meningitis, but without success. Nevertheless, there can be no doubt that intraspinal medication in various infections of the meninges offers a large experimental field, and the success so far encourages use for more careful search for the proper antiseptic.

A number of deaths have been reported as the direct result of the injection of serum into the spinal canal. Some of these may be due to anaphylactic shock, and it is well to bear in mind that 20 or 30 CC. of serum in a sensitized infant may do harm. From some recent experiments it is possible that the antiseptic in the serum may do harm, and it is to be hoped that a harmless preservative may be found.

It is scarcely necessary to review the brilliant researches made to determine the etiology of acute poliomyelitis anterior. It is enough to state that much has been learned; yet to the clinician the researches are still defective in that the mode of transmission and the origin of sporadic cases have not been determined. The theory that the stable fly may carry the disease is attractive, but unless the source of the infection can definitely be fixed little can be done in the way of prophylaxis. We had quite an epidemic of this disease in St. Louis last summer, but the cases were so scattered that any suggestion as a possible source of the virus seems hopeless. There are still many clinicians, among whom is my friend, Dr. Saunders, of St. Louis, who cling to the theory that paralysis in animals, especially chickens, is a source of the virus which attacks human beings. Recently before the St. Louis Medical Society he promulgated his theory. It is as follows: Limber neck in chickens is produced by chickens feeding on the larvae of flies which grow in the carcass of any animals dying of the specific paralysis. When these larvae develop into flies the latter may carry the disease by biting persons. He suggests that an intermediary host, the stable fly or its larvae is necessary in the life of the parasite which causes infantile paralysis. It is parasites in animals which have caused the numerous sporadic cases of the disease all over the United States through the last quarter of a century. A general epidemic occurs when the virus becomes "humanized," that is, may be carried from one person to the other without the intervention of the insect host.

While this hypothesis is very interesting and would ex-
plain the erratic appearance of the disease, it lacks experimental support. In fact, the paralysis in animals and that in man has not been proven to be identical; on the contrary there is much observation to show that they are diseases of different origin.

The treatment of the acute stage of infantile paralysis by the internal administration of the hexamethylenamine has received the support of many practitioners. Personally, I feel convinced that it has no curative or ameliorative effect. Two of my fatal cases last summer had this drug given in moderate doses for several days before the onset of illness as a prophy-
lactic. In one case distressing dysuria and hematuria warned me that the average dose should not be exceeded. In three cases remarkable good results were obtained from large doses of quinine. The suggestion of Netter that the blood serums from human subjects who have had the disease be utilized as a curative agent presents practical difficulties and its therapeutic value is by no means established. We have, therefore, made no advance in the therapy of this dreadful disease.

Considerable interest has been manifested in the treatment of chorea by the use of salvarsan. The few cases reported indicate that valuable addition has been made to our therapeutics of the disease. However, if the theory that chorea depends on the same virus as rheumatism proves correct, it is likely that the most radical and effective therapy will be found in the use of bacterins or sera and experiments in this line are greatly to be desired.

Considerable confusion still exists in regard to the classification of the various forms of paralysis. Neurologists continue to find new types of this syndrome. Unfortunately, since the etiology is unknown of most of the various forms, many of these types may be only different clinical manifestations of the same disease. As soon as some one points out a clinical group of symptoms, other observers see a similar group, and soon other cases appear in the literature. Opponheim's disease, amyatonia congenita, has apparently become a generally recog-
nized entity, but variations in the clinical symptoms are very noticeable, and its separation from certain forms of idiocy not always possible. Its differential diagnosis from the Werdig-
Hoffman type of paralysis may occasionally be difficult. Quite a number of cases of the latter form of paralysis have been re-
ported in the last few years.

This disease begins in young children and ends fatally, and
thereby offers a peculiar syndrome which may or may not be etiologically related to another fatal disease of infants, amaurotic family idiocy, of which disease new cases are continually reported, and it has been discovered outside of the Jewish race. As to the etiology of Sach’s disease we are still in the dark, and the analysis of Mott showing a destruction of the nucleoproteids is evidently merely the result of the widespread destructive process.

Very recently Clark (Amer. Jur. Disease of Children, June, 1913,) has made a very convincing effort to separate another symptom group from the mass of phenomena that makes up the cerebral diplegias of children. This only goes to show the obstacles which are beginning to be placed before the pediatrician who is trying to maintain a practical knowledge of recent advances in diseases of the nervous system. Formerly it was sufficient to diagnosticate a Little’s disease; now so many forms of cerebral palsy have been separated that it is difficult to recognize the original symptom-complex. And the treatment remains as unsatisfactory as ever.

Another clinical syndrome which is having some attention is the pseudobulbar paralysis of Oppenheim. This, as a rule, is merely a glasso-pharyngeal palsy, connected with other symptoms of a cerebral dipisia. It may, however, be an isolated symptom and produce dysphagia and difficult speech, and merits attention when a young child will not take food properly or who learns to speak without the proper intonation.

The increasing attention given to the prevention of injury to the brain in infancy is manifested by surgeon, neurologist and obstetrician. The main problems in the high mortality of infants have been elucidated and society has not been slow in attacking the evil wherever it is found with substantial victories everywhere. A much more serious problem is offered by the prophylaxis of mental deficiency and cerebral palsies in infants. A dead child is a loss to the community and a source of sorrow to the parents, but an idiotic or helpless child becomes a greater loss and a constant source of pain and sorrow to relatives. We pediatricians encounter this awful condition daily and infantile mortality really—at least to me—is a minor problem. It is, therefore, gratifying that the subject of intracranial bleeding in the new-born has been the subject of several studies particularly those of Seitz and Pott who point out that in more than half the cases the hemorrhage occurs above the tentorium.
at the base of the brain over the cerebellum and the medulla, and is caused by a laceration of the tentorium.

The propylaxis of cerebral palsies is an obstetrical problem of great magnitude. The post-natal treatment has been taken up by the surgeons, and there can be no doubt that prompt surgical intervention is indicated in all cases of cerebral hemorrhage sufficiently, intense to cause brain symptoms. The pediatrician is especially concerned with the diagnosis and this is by no means easy. We can not rely on the examination of the eye grounds since Paul has found retinal hemorrhages in full half of all now born infants. The examination of the spinal fluid may be of value but one can not depend upon it. The diagnosis must rest principally on a very exhaustive study of the symptoms and signs and the neurologist should be consulted to assist in discovering and interpreting the symptoms. The leading symptoms are somnolence and a refusal of food. Symptoms of cerebral pressure and irritation, of paralysis and hyperesthesia, convulsions and coma—all need interpretation and it must be admitted that normal variations in the nervous manifestations of the new born are not all clearly laid down. Muscular rigidity in itself has no significance and hence irritative symptoms are usually overlooked.

It may not be amiss in this connection to recall some recent experiments on the surgical treatment of hydrocephalus. Payr a few years ago described an operation for draining the lateral ventricles into the longitudinal sinns by means of a transplant-ed artery or vein. Drainage into the subarachnoid or subdural space has been recommended. For this purpose gold or platinum tubes may be used, but Andrews successfully employed a glass tube. Cotterill succeeded in opening the foramen of Magendie which resulted in gradual improvement of all cerebral symptoms. Marmion used a novel method of draining the lateral ventricles into the parotid gland by means of silk. Altogether there are several promising methods of alleviating hydrocephalus which has hitherto been regarded as hopeless.

Perhaps it may not be out of place to mention briefly the great interest being manifested in disorders of growth. Quite a large literature has been accumulated and an interesting group of clinical forms have been proposed. The dependence of most of them on some defect in internal secretions is generally admitted; but this has only been proven in the case of sporadic cretinism. There is not even a hint as to the possible origin of
mongolism, although it is by far the most frequent of the disorders of growth. The experimental discovery that thymectomy produces marked deterioration in osseous development has suggested the therapeutic use of thymus extract in mongolism, achondroplasia and ostrogenesis imperfecta. My own observation does not lead me to be very enthusiastic in praise of this remedy in such cases.

The French writers especially have been busy trying to classify the different forms of infantilism. Some of these do not concern the pediatrist, as the abnormal development may not be noticeable before puberty, as in dysgenitalism. Yet the Lorain type may exhibit peculiarities even in the child, and its diagnosis in the young must become a task of those engaged in the study of children.

We will not be far wrong when we give the functional nervous diseases a prominent place in our studies. The subject is so vast and its elucidation of such great practical importance that numerous observers all over the world are gradually exploring this unknown field. One need only recall the clinical and experimental work on the convulsive disorders of children. The term spasmophilia seems to have come into general use to designate a diseased condition of nutritive origin that is characterized by hyperexcitability of the nervous system. It is curious that milk for a time seems to increase the tendency to spasms, as Finkelstein has shown, but my own experience strengthens the view that a persistent use of fresh milk causes the hyperexcitability to disappear sooner than any other diet in the rachitic infant. The nutrition of the young infant cannot be maintained without resorting to milk, although at the onset the doses must be small. To nourish the young infant properly on a diet without milk is possible, and Raabe last year constructed such a diet list, but all his cases were infants about one year old.

The etiologic relation of disturbed calcium metabolism and spasmophilia is by no means established. The experimental results are so contradictory and the chemical analyses are not uniform. The administration of soluble calcium salts seems to have little influence on the nervous excitability. Hitherto the chemical analyses have been made in order to determine the quantity of calcium in the central nervous system. Aschenheim following the researches of Loeb, proceeded another step: He ascertained the ratio of the alkalies to the alkaline earths in
the central nervous system of infants dying while suffering from spasmophilia. He concluded that a disturbance of metabolism is present in spasmophilia which consists in an increase in the quotient—alkalies divided by the alkaline earths. In all of his cases the earths were either diminished or the alkalies increased. The cure, however, cannot be accomplished at once by the administration or withdrawal of certain salts. No doubt the primary cause lies in a faulty nutrition of the cell, in consequence of which the absorption of the salts and their retention in the physiological relation is not maintained.

That the action of parathyroids are etiologically related to certain convulsive states has been clearly established. Brandenstein in a study of seven cases of tetany which ended fatally found hemorrhages in the parathroids. The researches of McCallum on this subject are well known. It would be too much to draw the conclusion from present researches that spasmophilia depends altogether on a disturbed parathyroid function.

The use of lumbar puncture in frequently repeated or prolonged eclamptic conditions is a very valuable adjunct to our therapeutic procedures. It should be employed in all severe cases not only for diagnostic purposes, but the withdrawal of a few cubic centimeters of the cerebro-spinal fluid almost invariably results in an amelioration of the cerebral symptoms.

Considerable attention has been given the study of the functional diseases of the nervous system. To this class belong several forms of convulsions—such as anger spasms, which must be carefully separated from spasmophilic laryngospasms. The group of tics has also been enlarged and in young children their differentiation from chorea may give considerable difficulties.

The neuroses of childhood are constantly being distributed over a wider field. Hochsinger in 1910 studied the nutrition neurosis of children. In this group belongs anorexia nervosa, a disturbance which may have dangerous consequences and even lead to fatal inanition. From this there is only another step to the nutrition neuroses which, according to Siegert, are caused by over indulgence of the protein element in the food. Probably closely related to this is the lithemic diathesis of the English and French writers and a formidable list of symptoms has been collected which are ascribed to faulty protein metabolism. Overlapping these conditions is another diathesis which Czerny has made prominent—namely, the exudative dia-
thesis, which, in addition to its nutritional changes is characterized by some phenomena that are often placed under the neuroses, e.g. asthma and mucous colitis.

So much in this field is speculation and theory that it is impossible often to separate cause and effect. Does the nervous disturbance arise from faulty nutrition, or does the neurosis prevent the proper action of the digestive and assimilative organs? The pediatrician, naturally, in all neurosis at once inquires into the state of nutrition and tries by every means to correct the fault in the nutritive condition. It is gratifying to note in so many nervous conditions of childhood the abatement of the symptoms as soon as digestion and metabolism are normal.

Hochsinger also emphasized another neurosis which in childhood becomes a great obstacle to proper alimentation, namely, an incapacity for mastication. The child who chews vigorously may be considered safe with almost any reasonable diet, but how often do we meet children who cannot or do not masticate well. This neurosis may depend on an improper condition of the masticatory muscles. The imperfect chewing function may be associated with an inability to swallow certain articles of food. Thus some young children gag and vomit over some of the simplest foods as pieces of bread. Finally the peculiar sensitiveness of taste in which certain articles of food generally relished by children produce expressions of repugnance further complicates our efforts to feed some children.

A still more difficult subject is that of the psychoses and psycho-neuroses in children which has been discussed in many articles in recent years. The classification will not be attempted here, but stress may be laid on the influence of training and example. The fears of the child often depend on a violent fright produced by some careless person. The anger is often imitative of some one else's outbreaks of passion. Suggestion and imitation are here the fundamental processes in the causation and cure of morbid cerebral activities.

1460 South Grand Avenue.
One of the characteristic features of colon bacillus infection of the urinary tract as it occurs in infants is acidity of the urine—indeed it has become customary to base a diagnosis of pyelitis and colon bacillus cystitis upon the occurrence of pus in an acid urine. John Thomson in his article in the Quarterly Journal of Medicine, 1910, describes the characteristic features of the urine, in his 25 cases, as containing a considerable number of pus cells and clumps of bacillus coli and as very distinctly acid. My own ten or twelve cases have, with the exception of the one I shall report, all shown a distinct acid reaction of the urine and I have not seen a case reported as due to the colon bacillus in which the reaction was noted as alkaline. Dr. Thomson says that he has never seen a case of acute pyelitis in a young infant in which other organisms were found along with the bacillus coli.

On May 17th of the present year I saw, in private practice, an infant girl of ten months—The baby had been ill about two weeks. According to the previous history she had never grown well and at three months had had a running ear. There was no history of stomach or bowel trouble. The illness began with what was described as much fever and two days later a "spasm occurred." At this time a physician was called who attributed the trouble to the teeth. Two days later muco pus or mucus appeared upon the diaper and there was a great gush of urine which "sounded as if something broke." The infant seemed to have pain and strained. The baby appeared ill when seen, but the temperature taken by rectum was not found to be above 100.5 at any time while under my care. Since there was no nurse in attendance the thermometer was infrequently employed. The diapers showed muco pus several times during the early part of my period of observation and gas was passed with a loud report from the bladder before and after urinating. Specimens of urine examined as soon as practicable after passage were always found to be strongly alkaline, with the exception of one passed on May 26th, two days after the institution of a treatment with boric acid in the hope of doing good by rendering the urine acid until June 5th when conditions were improving.
On May 20th Dr. Warren B. Stone reported a profuse growth of a bacillus which he described as conforming in appearance and staining peculiarities exactly to the colon bacillus, and a later report from the Bender laboratory of Albany, to which a specimen had been sent by Dr. Stone for confirmation, gave the colon bacillus as present together with the staphylococcus albus to which was attributed the alkalinity. The white staphylococcus is described as a urea splitting organism, and might thus account for both the alkalinity and the gas formation. The urine contained no sugar.

When last seen, about July 1st, the baby had practically recovered. The treatment was principally with Formin to which the result was credited. The dosage was limited to about eight grains daily with no bad effect upon the digestion, the infant’s general condition improving steadily during the treatment.

111 Union Street.

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FRACTURE OF THE FEMUR WITH ESPECIAL REFERENCE TO DIVERSITY IN MEASUREMENTS OF INJURED AND UNINJURED LIMBS

BY GEORGE A. HENDON, M.D.,
Louisville, Kentucky.

As a result of an automobile accident in August, 1912, a boy of sixteen sustained a fracture of the femur at the middle third, which was treated with a modified Hodgen splint for eight weeks. Measurements were made from time to time, and the two limbs appeared to be of the same length. This was true when the boy was dismissed from the hospital.

A damage suit was later filed against the automobile owner, and another doctor was employed. A month after the boy left the hospital it was reported there was 1½ inch shortening of the fractured limb. The court appointed a physician to examine him in the presence of myself and the family doctor. The limb was measured with linen tape, and an apparent shortening of 1¾ inches was recorded. At my suggestion a steel tape was used, and the shortening amounted to 1½ inches. The femur and tibia being then measured separately, revealed that the former was one inch, and the latter (which had not been injured) was ½ inch shorter than the bones of the opposite limb.
The circumference of the injured limb was one inch less than its uninjured fellow.

The chief interest in this case centers about the diversity of measurements of injured as compared with uninjured bones, and suggests the possibility of pre-existing shortening. The diversity in measurements immediately after the patient left the hospital may be explained by the swelling present, and the thickened points over which the measurements were necessarily taken. The shortening later observed might have occurred after the patient began to bear his weight on that limb. However, there was no angulation nor over-riding of the bony fragments and the symmetry was perfect in comparison with the other limb; the only asymmetry present was the shortening of about one inch.

Investigation of the older literature of this subject reveals quite a number of reports anent the asymmetry of the limbs of otherwise normal individuals, shortening varying from $\frac{1}{2}$ to $1\frac{1}{2}$ inches. One report stated that a Brooklyn surgeon had measured sixty patients and in that number found only ten that had a parity in length of the limbs. Another interesting feature was that wherever asymmetry is noted the left limb is longer in about twice the number of cases. In the case reported tonight it was the right limb which was injured.

Shortening may be explained on the basis of arrested development of the injured limb due to non-use, as well as by accepting the hypothesis of normal asymmetry. In making measurements of this kind, we ought to measure the uninjured as well as the injured bones, and do so separately with steel tape.

Dr. A. M. Vance: I have had considerable experience in the measuring of bones, and the point made in the closing remark of the reporter is a good one. I have always contended that, particularly in joint disease, the bones of both limbs should be accurately measured. In six months a boy at sixteen grows considerably, and the accident might have temporarily arrested growth of the bone. My observation has been that quite a large proportion of people have limbs of different lengths, but I was unaware that the percentage was as great as ten in sixty. If accurately measured, it is believed about one in ten will be found to have limbs of different lengths. My experience is that females have this defect oftener than males. It is a common occurrence for young women to apply for treatment
of supposed lateral curvature of the spine, and careful measurement will show that one limb is from \( \frac{3}{4} \) to \( 1\frac{1}{2} \) inches shorter than the other, with only compensatory spinal deformity. This defect is usually noted on their first visit to the dressmaker. In the case reported there may have been a congenital shortening of the femur, just as was found in the tibia. As the tibia was found shorter than the opposite side, it is quite natural to presume there might also be a proportionate shortening of the femur.

SPECIAL POINTS OF INTEREST IN PNEUMONIA IN INFANCY AND CHILDHOOD

BY J. FINLEY BELL, M.D.,
Englewood, N. J.

The term pneumonia is derived from the Greek word pneuuo—lung. A more correct term would be pneumonitis, meaning inflammation of the lung. However the term pneumonia has become so general that it probably will remain the expression of a group of pathological processes occurring in the lung tissue known as lobar fibrinous or croupous pneumonia or the varied or ill-defined group of changes in the lung called catarrhal or broncho-pneumonia.

In childhood both forms prevail, while in adults the former prevails. In fact so rarely does broncho-pneumonia occur in the adult that it is looked upon universally as a disease of infancy and childhood, being uncommon after the seventh year of age, except in the debilitated and aged in whom there is a marked difference in etiology, prognosis, symptomatology and pathology from a broncho or lobular pneumonia, as observed in the child.

There are many sub-varieties of pneumonia designated either from supposed etiology, association, or location, such as, abortive, adynamic, alcoholic, apoplectic, aspiration or deglutition, bilious or intermittent, cerebral, cheesy, traumatic or contusion, cirrhotic, creeping or migratory, crossed, dissecting, embolic, erysipelatous, gangrenous, gouty, grippal or influenza, hemorrhagic, hypostatic, acute and chronic interstitial, larval, latent, septic or malignant, malarial, sewer gas, glandular, necrotic, pyogenic, tubercular, wandering, white or syphilitic.

In infants and children it may be stated in general terms

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that broncho-pneumonia occurs as a complication or sequel in the debilitated and those children affected with wasting disease, malnutrition, etc., while in the acute infectious diseases such as measles, pertussis, scarlet fever or diphtheria, either broncho or croupous pneumonia may complicate; or, as is commonly the case, the mixed type occurs, in which the pathological conditions of both croupous and broncho-pneumonia prevail in varying proportion and degree. This is notably true when there has been present a bronchitis with more or less edema. Moreover the apparent frank pneumonias of childhood are frequently the mixed type when occurring independently of other disease.

Larval and abortive pneumonias are invariably lobar in character and undoubtedly more common in childhood than adults. These cases are characterized by brevity of symptoms without definite physical signs and terminate by sudden drop in temperature and crisis without marked depression or by rapid lysis in from 24 to 50 hours.

A review of the anatomy of the infantile lung in contradistinction to the fully developing adult lung will assist in understanding the difference and diversity in pathology, symptoms and physical signs of the disease as it occurs in infants. First it should be appreciated that in the infant the bronchial or tubal passages of the respiratory system as compared with the cellular portion is much greater in the infant than in the adult, and this relation gradually diminishes as the child grows until the seventh year to adolescence.

In reviewing the embryology of the respiratory system we find the post natal and infantile period merely one of the stages of development of the lung from the fetal to the adult. The respiratory system is developed from the entoderm and the mesoderm; from the former is derived the epithelium and from the latter the connective tissue elements. During the first month of fetal life a bud-like process is differentiated from the surrounding structures by the dipping down of the entoderm of the pharyngeal floor. This forms a tube which divides into two tubes, one long and large corresponding to the right bronchus and a smaller one corresponding to the left. The right tube finally divides into three tubes, one for each lobe of the right lung, and two tubes corresponding to the upper and lower lobes of the left lung. As development progresses further subdivision of the tubes takes place, not entirely, but for the most part
dichotomously, until finally the entire bronchial system is developed; later the respiratory divisions of the bronchial tubes with their alveolar ducts and sacs, and lastly the alveoli are formed. During the early stages of development the epithelial lining of the alveolar sacs and alveoli is entirely of the fetal cell type; the flat epithelial cells are not present, until respiration has been established.

The predominating structure in the early fetal development of the lung is the mesoderm or connective tissue element, which gradually gives way to the rapidly developing tubular portions until finally in the adult lung it is restricted to the frame work of the lung and blood vessels.

The blood supply of the lung consists of two systems, pulmonary and bronchial. The pulmonary blood is received from the right side of the heart and carried through the pulmonary artery and vessels subdividing into minute vessels in the interlobular spaces supported by the interlobular connective tissues, where they divide. They then subdivide into minute vessels, each of which encircles an alveolus, in the walls of which they split up into a fine capillary network. The pulmonary veins begin immediately in this fine capillary network in the alveolar wall, unite into smaller veins and finally into the large pulmonary veins and enter the left auricle.

The bronchial system comprises the bronchial arteries given off from the thoracic aorta, and in some instances receiving branches from the first intercostal and internal mammary arteries. These arteries accompany closely the bronchial tubes, giving them their blood supply, also the walls of the large pulmonary vessels, the bronchial lymphatics, the connective tissue of the lungs, and finally ends in the fine cellular capillary network where they anastomose freely with the pulmonary system.

The bronchial veins which, contrary to the rule, are somewhat larger than their corresponding arteries, empty into the azygos and pulmonary veins. It is claimed that the venous radicals from the ultimate bronchials empty into the latter, while those corresponding to the arterial branches of the bronchi and lymphatics empty into the azygos vein.

The lymphatic supply of the lungs has been divided into three systems—peribronchial, perivascular and sub-pleural. The small lymphatics arise in the alveolar septum. There are stomati opening directly into the alveolar cavity between the
PNEUMONIA IN INFANCY AND CHILDHOOD

epithelial cells. Immediately in the submucous tissue they unite to form plexi, the ducts from which accompany the branches of the bronchia, as well as the pulmonary vessels, and finally empty into the bronchial glands at the root of the lungs.

The perivascular system of lymphatics, as well as the subpleural, begin in the lymph-canalicular system of the alveoli, follow the course of the pulmonary artery and terminate in the bronchial glands at the root of the lungs, or join in the perivascular lymphatics in the interlobular connective tissue septa. These lymph channels are all provided with valves and have numerous sacculations.

With this brief survey of the development and anatomy of the lung we can more readily appreciate the pneumonic conditions as they occur in childhood.

Lobar pneumonia may be defined as an acute infectious disease caused for the most part by the diplococcus pneumonia of Frankel, more rarely by Freidlander's bacillus, by the streptococcus or staphylococcus pyogenes, or by the bacillus typhosis or influenza. It is a noteworthy fact concerning the bacteriology of pneumonia that in by far the majority of cases the diplococcus of Frankel's is present in association with other micro-organisms, and in many instances is the predominating variety. This is a feature which is well worth remembering in connection with serum treatment of the disease. Keller estimated that about 60 per cent. of all lobar pneumonias occur among children and predominates in male children. Lobar pneumonia may occur in childhood as an independent disease or may complicate other diseases, such as scarlet fever, influenza, rheumatism, nephritis, malaria, meningitis, measles, whooping cough and typhoid fever. Both the diplococcus of Frankel and the bacillus of Freidlander are found in the throat and mouth secretions of normal adult individuals. The bacillus of Freidlander is not found frequently in the saliva and throat secretions of children, neither is it found in the sputum in health or in the alveolar exudate in pneumonia of adults as frequently as the diplococcus of Frankel.

According to the writer's experience, the few cases of pneumonia in which the bacillus of Freidlander was demonstrated, the associated pneumococci exhibit less clinical malignancy than with other bacterial association. Since these organisms normally inhabit the upper air passages, there should be some explanation as to why they so rarely enter the lungs, or
if they do so, are so rarely followed by exudate into the air sacs.

Recent experiments with the bacillus of whooping-cough have shown that the recently discovered bacillus of this disease locates among the cilia of the columnar epithelium of the trachea and bronchial mucous membrane mechanically, interfering with their normal wave-like motion. Is it not probable that in other infections diseases locally affecting the upper air passages, bacteria not now recognized as causative factors, may locate and act in the same manner, and by interfering with the ciliary function, encourage the entrance of pathological or bacteriological substances into the deeper recesses of the respiratory system? Evidence in support of this theory is the form of pneumonia which usually prevails with pertussis, which selectively is a mixed type closely simulating in physical signs and symptoms the lobar type. The modification of the lobar type is probably due to the continuance of the pertussis which delays or interferes with resolution, plus the peculiar anatomical structure of the infant lung. So far the presence of the pertussis bacilli has not been demonstrated in the pneumonic exudate, and it is possible that they constitute the disabling factor in ciliary function and thus encourage the migration of other bacteria into the alveoli, which in turn gives rise to the exudate. Bacteria, thus entering the pulmonary alveoli can pass through the lymph stomati into the lymph capillaries and there form coagula. It would seem logical therefore to reason that the clogging of the lymph capillaries, thereby breaking down the approximate delicate blood capillary wall and thence invading the capillary blood stream, might easily account physiologically and mechanically for the alveolar exudate in the lung.

Reference to the infectious diseases, pertussis, scarlet fever and diphtheria; and noting the character of pneumonia which most frequently complicates them, teaches a valuable lesson in regard to the route of the pulmonary infection, and why in pertussis we most frequently meet a lobar or mixed lobar type of pneumonia, while in scarlet fever we usually find a lobular or a mixed lobular type is almost invariably the rule.

Pertussis is a disease with little or no glandular involvement. Here the lobartype or mixed lobar type prevails and infection takes place by way of the bronchial tubes. There is little impediment to an entire lobe becoming involved if the cilia-
ted epithelium in one of the larger tubes is disabled, allowing bacteria to readily invade the alveoli; enter the lymphatics through the stomati and cause a mass consolidation. On the other hand the last two diseases are accompanied by marked engorgement of the lymph nodes of the neck and upper mediastinum. The probable route of infection here is through these engorged lymphatics, either direct into the alveolar lymph capillaries or hematogenously from one or more of the engorged lymphatic glands. It is readily conceivable that an infection from this source is less direct and instead of a mass consolidation of the lobes, scattered lobular consolidation would be probable.

A form of pneumonia occurs in diphtheria of a certain type and should be noted in this connection. I refer to the laryngeal diphtheria, with respiratory obstruction. In this connection there occurs more or less collapse of the lung, due to the deficiency of air which can pass through the obstruction. When this becomes marked there will be formed inspiratory recessions above and below the sternum. The persistence of this condition, if permitted, will promptly eventuate in hemorrhagic exudate into the alveoli.

Until recently it was believed that lobar pneumonia did not occur in very young infants; we now know that it does occur in the first few weeks of life. A septic type with infarctions into the lungs, kidneys, liver and suprarenals, occurs in the first days of life and is rapidly fatal.

Primary lobar pneumonia occurs frequently during the last half of the first year, but more frequently during the second. The right lung is most frequently involved probably because the entrance into the right lung from the upper air passages is larger and more direct, the bifurcating angle being much less acute. The lower right lobe is more frequently involved, next the lower left lobe and next the upper right lobe and last the upper left lobe. The middle right lobe is rarely involved.

Apical pneumonia in children is much more frequent than in adults. So also is double pneumonia.

Kellar states that 60 per cent. of all pneumonia occurs in children and about two-thirds of these occur in the winter and spring months. Pneumonia may assume the properties of an epidemic, frequently attacking several members of the family or a school. There are some that believe that pneumonia poison can be harbored in a room, or building. Where these epidemics
occur they are probably due to close contact with one who harbors pneumonia organisms in his upper air passages and distributes them by sneezing and coughing in close contact with other people.

Pathology—Whatever may be the nature of the bacterial invasion or through whatever channels pneumonia is transmitted, there is always fibrinous exudate in the alveoli, bronchi and lymph spaces. This is composed of epithelium, blood cells and fibrin. The consistency and color of the exudate varies. If there is a small amount of fibrin present the exudate may be fluid, in these cases there has been an antecedent catarrhal inflammation. The first stage is one of red hepatization which is preceded by serious congestion, followed by discharging of blood into the alveoli. The lung becomes more firm as coagulation takes place and it is heavy and solid. The stage of gray hepatization is next. The lung is airless and shows a granular surface, the so-called pneumonic granules which consist of the coagulum in the alveoli loosened by necrosis from the alveolar wall and lie in a fluid or semi-fluid capsule. In most cases the pleura is red and inflamed and there may be a serious exudate into the pleural cavity which is always thickened and covered with fibrin. In from five to ten days, if pneumonia pursues an ordinary, uncomplicated course, ressolution takes place characterized by liquefaction of the exudate which is eliminated by expectoration. In from fifteen to thirty days if recovery takes place, the lung may resume its normal functions and the alveolar wall is supplied with new epithelium cells. There may still remain some thickening of the pleural wall.

Gangrene and pulmonary abscess are relatively rare in children.

Bacteriology—The diplococcus of Frankel is now supposed to be the etiological organism in lobar pneumonia. The diplococci have been found in the circulating blood by a few observers and indicates a grave condition in children.

The symptomatology—The symptomatology of pneumonia in children closely approximates that of the adult. In infants and very young children, however, the diagnosis must be largely objective.

The first sign of illness may be a severe chill, which is frequently mistaken for a convulsion. This may or may not be preceded by indefinite illness of a few hours duration. Convulsion may usher in the disease or follow the initial chill. De-
lirium may be present from the onset and continue during the course of the disease and until resolution occurs, continued stupor, hebetude and cerebral symptoms, if present cause much anxiety, particularly if meningitis is epidemic at the time. After the chill or convulsion the temperature rises rapidly and may reach as high as 106 F. (41 C). There is a harsh cough, with dyspnea, which always varies with the extent of lung involvement and its location, the dyspnea being more severe in apical pneumonia than in a corresponding invasion of a lower lobe. Patients with marked stupor and hebetude are more dyspneic than restless patients with the same degree of lung involvement. Young children are not able to localize pain.

More than one pneumonic child has been operated on for appendicitis, and a perfectly healthy appendix removed. Every child giving chest symptoms, notably on the right side, should have the abdomen examined. Conversely, every child with pain in the abdomen should have a thorough chest examination. Pulse, temperature and respiration ratio will here be of great service. Lack of costal respiratory motion on the right side would strongly suggest pneumonia and not appendicitis. Loss of diaphragmatic respiratory motion would, in the absence of diaphragmatic pleurisy, suggest appendicitis. In children rigidity of the abdominal wall may not occur with appendicitis. In infants unable to talk, palpation would probably be more valuable in diagnosis than in those patients able to tell you deceptively where their tenderness is. A rectal examination will frequently be of assistance. Abdominal pain, pallor, nausea and vomiting would suggest appendicitis. Face is usually flushed in pneumonia. Finally it must be remembered that appendicitis and pneumonia may co-exist.

After the fever has persisted for two or three days a false crisis characterized by a sharp brief drop in temperature occurs which promptly rises again and continues five to nine days, terminating by crisis or lysis. Dyspnea may not be marked at the beginning, but during the course of the disease it increases with dilatation of the ala nasi, depression of the peripneumonic groove and frequently recessions of the supersternal notch without evidence of laryngeal obstruction.

Nervous System—The nervous symptoms may be so severe with the onset of the disease as to render a prompt diagnosis between pneumonia and meningitis impossible. Frequently a lumbar puncture will be necessary in the early stages for differ-
entiation. There may be rigidity of the muscles of the neck and opisthotonos.

Blood—Leucocytes range from 15,000 to 50,000, the polys from 70 to 90 per cent., the leucocytosis in broncho-pneumonia is less than in lobar pneumonia and likewise the differential count.

Physical Signs—There is little difference between the physical signs of pneumonia in children and adults. The process of securing and interpreting them differs materially. During the first stage there will be nothing found upon palpation. Fremitus may be negative. However, upon auscultation we may discover rude and rough respiratory murmurs more marked over the affected lung than the other. Careful search should be made for crepitant rales, they may be present over a small area, and only after coughing or crying. The axillary spaces should be carefully auscultated. The examination should be conducted with the child held over the nurse’s shoulders in such a way as not to unduly restrict it and the entire chest area should be examined. There may or may not be slight dullness over the affected area. The dullness occurring at this stage usually has a tympanitic ring and is sometimes deceptive. This so-called tympanitic dullness is quite frequently found and as frequently overlooked in young infants with thin chest walls.

Consolidation—As consolidation becomes manifest over the affected area fremitus, both vocal and tactile, is present. As consolidation advances dullness is more and more marked. If there is pleural effusion flatness will be added to the pneumonic note. When the upper lobe of the lung is consolidated there may be an area of dullness in the lower portion of the cavity, particularly posteriorly with flatness. This is usually caused by an accumulation of fluid in the dependent part of the chest. Above there will be bronchial voice and respiration. A large effusion in the chest will mask the respiratory murmur and diminish the voice sound.

Resolution—One of the first signs is the rale redux. It is not as distinct and does not occur as extensively as in the adult. It frequently does not occur as early, sometimes not until the temperature has been normal for several days. Fremitus gradually diminishes and becomes normal. The percussion note becomes less dull. The return of the voice and breathing sounds to the normal may require days and weeks. This delay is due
to pleuritic thickening and to a latent congestion or hypere-

Complications—Otitis is a frequent complication of pneu-
monia. It may be present in any stage of the disease. I have
found it present with the initial symptoms. It frequently oc-
curs during the first four or five days and is characterized by
restlessness, rolling of head, sometimes rigidity of neck and
other meningitic symptoms. It is frequently, but not invari-
ably accompanied by rise in temperature and increase in pulse
rate. Occasionally the attack of otitis will be apparently pain-
less. In the painless cases spontaneous discharge from one or
both ears may occur with or without a previous rise of temper-
ature. With every acute illness in children the ear should be
examined carefully. Mastoiditis does not frequently follow
pneumonia otitis, when it does it constitutes a very grave com-
lication. Meningitis may occur at any stage of the disease, in
fact it may usher in the disease. Cerebro-spinal meningitis
caused by the diplococcus pneumonia is much more serious
than meningococcus cerebro-spinal meningitis. Lumbar puncture
may be required to establish the diagnosis and etiology.

Pleurisy With Effusion—In the large majority of pneu-
monias there is more or less pleurisy. It is doubtful if pleurisy
is ever absolutely absent. Many children recover without ap-
parent demonstrable fluid in the cavity. Frequently it will dis-
appear with the disease. However, when it persists it is likely
to become purulent. It may be purulent from the beginning;
on the other hand it may remain serous or sero-fibrinous for a
considerable period.

Treatment.—Treatment of pneumonia in children should
be simple but carefully and individually directed, and laid out
under the following four heads:

I. Medicinal: (a) cathartics; (b) sedatives; (c) stimu-
lants; (d) serum therapy.
II. Hydrotherapeutic.
III. Dietetic.
IV. Hygienic.

The doctor should approach his little pneumonic patient
with an open mind unincumbered by cock-sure remedies and
routine procedures. I find it generally a good plan to empty
the intestine with either castor oil, calomel with milk of mag-
nesia or podophyllin and soda.

Hydrotherapeutic—Sponge baths of water at 21 C—32 C or
41 C (70—90—107 F) I usually begin with temperature 32 C (90 F) to 40 C (109 F).

Mustard is frequently dissolved in the bath to the extent of a good straw color. The bath is carried out systematically under blankets in a warm room. Vigorous hand rubbing is continued during and after the bath until there is a thorough reaction. The frequency, length and temperature of subsequent baths are determined by the reaction and condition of the child.

Dietetic—The diet must be selected in accordance with age and needs of the child. The previous methods of feeding, if successful, should be followed as closely as possible. In the very young we are limited to fluids exclusively. Mortality in breast-fed babies I am sure could be reduced if the fact was generally recognized that a dyspneic baby cannot avail itself of a sufficient amount of nourishment by sucking without subsequent exhaustion. The mother’s breast should be pumped and the milk fed by dropper or Breck feeder. The same plan should be followed with the formula if on artificial food. In older children I depart from fluids and give cereals, bread and butter and eggs. I have frequently seen a pneumonia patient sickened to death, relieved by vomiting leathery milk curds. Patients should not be overfed. Tympaitis is a most unfavorable development.

Hygiene—I have found it advantageous to treat all my pneumonias more or less in the open air. If it can be arranged they are put out on a piazza with ample covering incorporated with hot water bottles. They should be brought in for baths. I have frequently seen the pulse, temperature and respirations drop markedly with comfort to the patient within half an hour after exposure to cold air.

The nurse should be patient, even-tempered and not disturb the patient unnecessarily. A fussy nurse, a stuffy room and a stuffed belly is a trinity that will challenge the endurance of the strongest patient.

Medicines—Cathartics have been mentioned. Sedatives are serviceable for pain and harrassing cough. Paregoric is specially suitable for this purpose, codeine and heroin may be used. The less of either the better.

Stimulants—Indiscriminate use of stimulants has probably increased the mortality of pneumonia, more than any one agent in treatment. One of the most pernicious practices is to give frequent hypodermic injections of strychnine during a crisis.
The patient dies frequently as a result of the action of the drug upon his heart.

Professor Jacobi discovered this long ago. When stimulants are necessary I use caffeine for the low muttering delirious cases. Alcohol freely even in babies, and in a serious crisis digalen intravenously. Following Dr. Sajous' suggestion, I have used in a few cases 5 cc. doses of normal salt solution every two hours, adding orange juice and egg white occasionally.

I have used anti-pneumococcus serum in two cases. In one of these antistreptococcic serum was used in conjunction, because streptococci were abundant in the sputum. Large doses were given and the patient did well.

It follows that the earlier the serum is given the better the opportunity for favorable action. Vaccines can have no scientific place in the treatment of pneumonia. The phylaeogens I have not tried; they are, however, open to the same objection as vaccines.

SOME NEW-OLD PROBLEMS IN INFANT FEEDING*

BY HENRY EXOS TULEY, M.D.,
Louisville, Ky

The title of this paper may seem trite and uninteresting, but the question of infant feeding can be approached from so many angles that its problems are always varied and full of interest. The old ones because of the many viewpoints from which they may be considered become new, and the newest ones are of the greatest importance. Then, too, so far as I have learned, the subject of infant feeding has not been discussed before this society before, or at least for so long a period as to make this effort worth while.

It may be considered axiomatic that the milk of one species is suited only for the nourishment of its own offspring; that no matter how changed there is something in the milk which fits it for the nourishment of its own offspring and not for the offspring of any other species. I believe that the profession as a whole lays too little emphasis upon the necessity for maternal nursing. There are so few contra-indications to maternal nursing, so few physical defects and disabilities which will prevent the mother from nursing her baby that it should be insisted upon in every case. I do not believe that the number of mothers

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ligations is as large as some authorities would lead us to believe. But there is something the matter with the latter-day mother, for I am sure it has been the experience of others as it has been mine, that we are prescribing artificial food much oftener than formerly. I believe this is true of babies after the third month more frequently than during the first three months. It is possible in many of these cases to partially nurse and partly artificially feed which is decidedly to the baby’s advantage in most cases.

A few of the contra-indications to breast feeding are as follows: Tuberculosis of the mother, puerperal infection, puerperal eclampsia or severe toxæmia, violent post-parturn hemorrhage, an inverted nipple which is beyond correction, and pregnancy during lactation. A persistent high percentage of fat or a very high percentage of proteid, both of which may materially impair the digestion of the infant, which cannot be corrected by diet or exercise might perhaps be considered as cause enough for weaning.

A word can be well said at this time as to the care of the breast and nipples before labor. A preliminary examination should always be made of the pregnant woman about the eighth month and should include a careful inquiry into the nursing history of multiparas and into the character of nipples and breast of both primaparas and multiparas and if possible correct any natural defects which might be capable of correction. For instance, a flat nipple can be trained during the last few weeks so as to be serviceable and so that it will not be subjected to the laceration or cracking in the early days after delivery. During the last months of pregnancy mothers should be instructed as to the care of the nipple to prepare it for the nursing period. The plan suggested by Dr. J Milton Babbott of applying lanolin to the nipple and the surrounding areola before retiring and washing it off the next morning with a rough towel or wash rag, drying and applying talcum powder will make a much more serviceable nipple than will the application of the so-called hardening solutions which if applied result in cracks and fissures much more frequently. Another reason for the appearance of fissured and cracked nipples is the too frequent nursing during the first three days following who refuse to nurse their offspring because of fancied social ob-
delivery. Practically the entire colostrum content of the breast is withdrawn by the time the child has been nursed two or three times. After this until the milk comes the evening of the second day or the morning of the third the child is pulling and tugging at practically an empty breast and the result frequently is a fissure of the nipple during this ineffectual nursing period. It is very much better therefore, to have the child during the first day nurse every four hours, during the second twenty-four hours every three hours, during the third twenty-four hours every two hours during the day and every three or four hours during the night. Subsequently to the advent of milk the nursing period can very well be lengthened to every two hours and a half during the day and every four hours or once during the night.

I cannot too strongly emphasize the importance of the weight of the child as an indication of its progress. A child may be entirely happy and contented and yet show no gain over a long period of time. During the first three or four months the child should be weighed at least once a week without clothes, and preferably at the same time of day and before a nursing. If the child is showing progress it will show a satisfactory gain in weight. I realize fully the mother's discomfort and distress of mind which may eventuate if the baby does not gain satisfactorily and these cases should be treated accordingly.

The duration of the nursing period is one which should be considered carefully. Where a child is gaining satisfactorily and the mother is holding her own we should be governed in our advice as to when the child should be weaned largely by the season of the year. I think it always is inadvisable to advocate weaning a baby in the middle of the summer. There is no objection at all after the fourth or fifth month for a child to have one feeding of cow's milk or perhaps two, especially if the mother shows a sign of a failing supply. These babies usually do better when later placed upon an artificial feeding entirely than one which is suddenly taken from the breast and artificial feeding begun. In the middle of the summer, we should be satisfied with a slight gain in weight rather than to push the child too speedily and run the risk of a gastrointestinal disturbance by artificially feeding it during the heated term. I have found the following progress chart which is gotten up
after the manner of the one suggested by Dr. L. Emmett Holt, of very great service in keeping track of the babies whose artificial feeding I have directed, especially those which have been referred from out of town. These can be filled in and sent to the physician once a week or once a month and a very accurate record of the progress of the child kept in this way.

REPORT ON PROGRESS OF

<table>
<thead>
<tr>
<th>Name</th>
<th>Date</th>
<th>19</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight</td>
<td>Gain</td>
<td>oz.</td>
</tr>
<tr>
<td>Loss</td>
<td>oz.</td>
<td>Since last report</td>
</tr>
<tr>
<td>Stools avg. in 24 hrs.</td>
<td>Watery</td>
<td>Loose</td>
</tr>
<tr>
<td>Flatulency or colic?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Appetite: Is child satisfied?</td>
<td>Is any food left?</td>
<td></td>
</tr>
<tr>
<td>Is the child comfortable and good natured?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>How much does he sleep?</td>
<td>Date of last report</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>R</th>
<th>F.</th>
<th>S.</th>
<th>P.</th>
<th>Cr.</th>
<th>%</th>
<th>Sk. M.</th>
<th>M. S.</th>
</tr>
</thead>
<tbody>
<tr>
<td>No feed</td>
<td>Interval</td>
<td>Dil</td>
<td>Av.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Each</td>
<td>Total 24 hr.</td>
<td>5</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In approaching the subject of artificial feeding of infants I realize thoroughly that a time limit will not permit of a thorough discussion of all of the artificial foods which are upon the market. They might all be dismissed with the statement that not one of them is worthy of a thought for the continuous feeding of an infant during its first year. They are all lacking in the first place in that life-giving element of nutrition which is present in a fresh milk. The artificial foods may be classed as follows: The partially dried foods, to which may or may not be added an excess of carbohydrates as a preservative, typical of this class is condensed milk which has been evaporated to a very thick consistency, and which is either sweet or unsweetened. The unsweetened is not suitable at all for the artificial feeding of infants as it immediately deteriorates as soon as the top of the box is opened; second, those foods which are entirely dried, and the class which is supposed to be added to cow’s milk to aid in its digestion and modification. Among the dried foods are malted milk and Nestle’s food; among the latter are Mellin’s food and Peptogenic Milk Powder.

Let me reiterate what was said at the beginning of this paper that the milk of one species is at best unsuitable for the perfect nourishment of the offspring of another, hence no matter how adapted or modified, any milk of the lower animal is not as suitable for the artificial feeding of infants as the in-
fant's own mother's milk. In addition to the absence of this natural life-giving property the analysis of mother's milk is very different from cow's milk, and we cannot go amiss in considering for a brief moment the difference between these two milks. Woman's milk is more transparent and is slightly alkaline, while cow's milk is apt to be acid. Average analysis of mother's milk shows fat 4.00, sugar 6.4, proteids 1.50, total solids 13.6, water 86.4; cow's milk, fat 3.50, sugar 4.4, proteids 4.00, total solids 12.0 and water 88.0. The following is an average comparative analysis of the milk from various breeds of cows, showing a problem which confronts us at the beginning as to what character of milk to select for artificial feeding:

<table>
<thead>
<tr>
<th>Breed</th>
<th>Total Solids Per Cent.</th>
<th>Fat Per Cent</th>
<th>Protein Per Cent.</th>
<th>Sugar Per Cent.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jersey</td>
<td>14.70</td>
<td>5.14</td>
<td>3.80</td>
<td>5.04</td>
</tr>
<tr>
<td>Guernsey</td>
<td>14.49</td>
<td>4.98</td>
<td>3.84</td>
<td>4.98</td>
</tr>
<tr>
<td>Ayrshire</td>
<td>12.72</td>
<td>3.85</td>
<td>3.31</td>
<td>5.02</td>
</tr>
<tr>
<td>Holstein</td>
<td>12.00</td>
<td>3.45</td>
<td>3.15</td>
<td>4.65</td>
</tr>
<tr>
<td>Shorthorn</td>
<td>12.57</td>
<td>3.63</td>
<td>3.32</td>
<td>4.89</td>
</tr>
</tbody>
</table>

This difference in analysis of mother's and cow's milk and a thorough understanding of it is an absolute preliminary essential to the use of cow's milk in artificial feeding of infants. The physician must learn to think in percentages of a milk mixture. He must not begin by thinking of a formula as so many ounces of milk and cream, water and sugar of milk. Then, too, he must not think of some formula as suitable to a baby of a certain age. We had best perhaps use the term adaptation of milk for infant feeding rather than the modification of milk for infant feeding, as it carries with it the idea of adapting the various percentages of proteids and carbohydrates to the infant's digestive capacity rather than modifying the milk haphazard to meet the nutritional needs. One must, of course, in deciding upon a formula for the feeding of an infant, seen for the first time, use some discretion and judgment as to what formula shall be prescribed. It should be a rule to begin feeding a baby a formula which we are certain will not upset the digestion and upon which we are equally certain the child will not gain upon, rather than to give it a formula perhaps too strong for its digestion, yet fully equal to its nutritional needs. It is far easier to raise the strength of the formula gradually than it is to correct digestive disturbances caused by too strong mixture at first.

I am not sure that the profession at large realizes the advantages which the babies in Louisville have in a supply of
milk which can be relied upon, both as to its cleanliness and to its chemical standard. The only safe milk for infant feeding is a milk of certified grade. The importance of this to the infant population of Louisville was emphasized in the last annual report of the Health Officer of the city in which he stated that owing to the efforts of the Babies’ Milk Fund Association and clean milk the infant mortality from preventable diarrheal diseases in infants had been reduced 50 per cent. in the last two years. I would like to emphasize the advantage to be had by making more frequent use of the facilities of the organization of the Babies’ Milk Fund Association. We all agree that clean milk is the prime requisite for infant feeding. The importance of the home supervision of an infant’s feeding can also be agreed upon if we think about it. It is very easy indeed for a physician in making a call at the home or in an office consultation to give general directions as to the care of the feeding utensils and the preparation of the milk in the home. It is absolutely impossible for the physician to know that his directions are being carried out. The nurses maintained by the Babies’ Milk Fund Association, acting under the direction of the attending physician or in the case of the pauper patients which are under the association’s care, under instructions from the station physician, visit the homes of these babies and give personal instruction to the mother in the detail of carrying out his directions, going at inopportune and unexpected times to see if these directions are being daily carried out. This home supervision and home education in the modification of milk, when the family is unable to patronize the modifying laboratory maintained by the association, has been a factor in the reduction of the infant mortality of the city which must be reckoned with and acknowledged.

I would call the attention of members of the society to the advantages which we have here in Louisville of having at our command two modifying milk laboratories, one maintained by the Babies’ Milk Fund Association for the babies of the poor, the other maintained by the Neill Roach Dairy Co., the distributors of certified milk. Here one can obtain with accuracy any formula desired, with any diluent, in individual feeding tubes for the twenty-four hour feeding, properly covered and packed in ice in individual containers. All that has to be done to the milk at the time of feeding is warming to the proper temperature and applying a sterile nipple to the bottle. I have found
the use of the laboratory a decided advantage when first starting the baby upon a milk formula. As stated above, it is always wise under these conditions to begin with a formula weaker in all its ingredients than will be sufficient to cause the baby to gain properly, but which will not cause serious digestive disturbances. This formula can be changed as often as necessary, perhaps every other day and be filled with the same accuracy as a prescription for medicine. By studying the case with close inspection and record of the stools any evidence of disagreement can be easily detected and usually as easily remedied.

I have had occasion several times when considering the home modification of milk and the use of the modifying laboratory to make a comparison in the cost of the two methods, and when carefully done it would be found that the expense is very slightly more when the laboratory modification is used. When we consider the wear and tear on the nervous system of the average mother, when in addition to her many other duties she must modify the baby's milk, the result is very decidedly in favor of the laboratory over home modification. Mistakes are less frequent and I think the babies fed on laboratory modifications do better.

When home modification is decided upon one of the problems to be met is the method of modification to be used, whether the top milk method of the use of the centrifugal cream of a definite percentage with the necessary amount of skim milk and other ingredients. I have found one of the most useful methods of modification the one advocated by Baner, a very simply mathematical problem and one which works out very satisfactorily. For the convenience of those who are not mathematically inclined a number of formulae have been worked out by various observers and confirmed by analysis of the resultant mixture, and published in tabular form which give very comprehensively the quantity desired of the various ingredients. In successive columns these tables state the kind of milk to be used in the modification as regards the strength of butterfat and the amount, the amount of diluent, sugar of milk, etc. I cannot emphasize too strongly the necessity for accurate written instructions for the mother as to the ingredients that go to make up the formula, also the necessity for keeping an accurate record of the formula given upon the progress chart or report which has been shown and referred to above.
The bottom of the report contains a blank for the record of the formula, number of feedings, interval, etc.

Another of the problems which must be met in the feeding of infants is the proper interpretation of the appearance of infant's stools. The stool is a very accurate index as to how the infant is taking care of a milk mixture. A great deal of original work has been done upon the digestion of casein and the significance of curds in the stool, notably by Talbot, of Boston, and Southworth, of New York. There is a distinct difference between the fat curd and the casein curd as they appear in the infant stool. The former is usually small and soft, the latter large, hard and firm. The tendency of cow's milk is for the casein to form large tough curds which are with difficulty broken up in the digestive organs of the infant. According to Southworth the study of the chemistry of milk and of its digestion has proven that the addition of an alkali to milk forms new chemical compounds with casein but produces distinct effect upon the process of digestion. The author* has stated that a small amount of the alkali delays curding pending the neutralization of the alkalies by the acid present in, or secreted by, the stomach. This delay alone tends to prevent the curding of the milk in large solid masses and favors the formation of smaller and more flocculent curds, and further, if the alkalinization is sufficient not to be overcome readily, part of the still uncurd ed milk will probably escape through the pylorus to be digested in the intestines and relieve the stomach of part of its work. Lime water to the proportion of 5 per cent. of the total mixture will accomplish this purpose admirably. The addition of a small quantity, say 10 to 20 drops to a six ounce mixture, of the milk of magnesia will do the same work. It has been found also that by the use of citrate of soda infants may be brought to more readily digest larger amounts of casein compound. As shown by Talbot, I have found in certain cases which have large beanlike casein curds in their stools that these may be stopped by bringing the feeding to the boiling point and then allowing it to cool just before it is taken by the infant.

A group of symptoms which calls for thought, a problem to be solved, are those associated with a fermentative diarrhea, an increased number of bowel movements, a slight rise of temperature, a greatly increased quantity of gas, watery move-

*Archives of Pediatrics, February, 1907.
ments, loss in weight, frequently refusal of food. This train of symptoms may be caused by the disagreement of the carbohydrate content of the milk. Mother’s milk contains nearly 3 per cent. more carbohydrate than cow’s milk. In diluting the cow’s milk to bring the fat and proteid percentage within the reach of the digestion of the infant the already less amount of carbohydrate in the cow’s milk is thus diluted way below the needs of the infant. This decrease in quantity is brought up by the addition of some form of sugar—cane sugar, milk sugar or as has been advocated of late, especially by the German school, a malt sugar, a sugar that is supposed to be much more readily assimilated than lactose. Malt sugar has been extensively used in this country by a number of pediatricians and very satisfactory reports are written in regard to it. Of late I have been using this form of sugar entirely in my milk modifications and with entire satisfaction. The preparation which I have used is that which is put up by Meade Johnson & Company under the trade name of Dextri-Maltose, containing 51 per cent. of maltose and 42.7 per cent. of dextrin. Bennett† has adopted a rule of giving a fixed amount of sugar to all babies who have no digestive disturbances, except perhaps a baby under one month of age. This amount of sugar is one-half ounce to the total twenty-four hour quantity of food. He uses the Dextri-Maltose. The fat and the sugar are the great energy providers and together furnish approximately 90 per cent. of the body’s requirement. Hence, it may be frequently found that when one disagrees the other can be used to bring up the total calorie requirement of the food mixture. In calculating calorie percentages it may be remembered that one ounce of whole milk equals 20 calories and one ounce of any sugar equals 120 calories, and that the average baby requires 120 calories per kilogram of body weight, or 64 calories per pound, up to the age of eight months and 100 calories per kilogram, or 45 calories per pound of body weight for babies older than eight months.

The term calorie is used to designate a food value, and is defined as the amount of heat required to raise the temperature of a kilogram of water one degree C. An example: an infant 3 months of age weighs 13 pounds. There being approximately 2.2 pounds per kilogram, the weight expressed in kilograms would be 5.9 kilograms. Multiply this by 70 gives 413 calories,

†American Journal of Obstetrics, October, 1911.
the number of calories per day needed by an infant at 3 months of age weighing 13 pounds

One of the most serious problems which we have to solve is the feeding of infants and children during and after the acute diarrhoeal diseases; to as quickly as possible overcome the nutritional waste incident to the acute toxic or inflammatory condition, and at the same time be unirritating to the digestive tract. One of the most important of he newer hings in infant feeding is the discussion of the protein milk.

Much original work has been done in this country as well as abroad on this subject, both as a food and as a corrective of digestive disturbances. The last issue of the American Journal of Diseases of Children contains articles by Wilcox, Hill and Hoobler upon this important subject. The conclusion of the authors are of interest, showing that protein milk is essentially a therapeutic agent and is not suitable for use as a continuous diet; that it is suitable for use at all ages, but better adapted to children over three months of age. It is indicated in gastric or intestinal indigestions, acute infections or chronic incapacities, fermentations or putrefactions. Its greatest therapeutic efficiency is when made from skim milk, and can be used without preliminary starvation or purgation and in combination with any plain milk mixture. One of its advantages as pointed out is that it may be abruptly changed to a plain milk formula without danger. It should be partially withdrawn when the first sign of digestive improvement is shown. It was also shown that fresh milk and breast milk when taken badly alone are often well borne when combined with protein milk. The principal indication for it was found in acute intestinal infection. The preparation of the protein milk might be mentioned to advantage. The buttermilk from which it is made is from a pasteurized skim milk containing 1.75 per cent. of fat. To one quart of this is added one ounce of buttermilk from some reliable dairy. This is allowed to stand for twelve hours at a temperature of 70 to 80 F., is thoroughly beaten at intervals of two to three hours and then placed on ice till used. Each day’s buttermilk is made from that of the preceding day, a smaller amount of stock being needed as time goes on. The amount of stock used is determined by the degree of acidity desired. The junket is obtained as follows: To two quarts of skim milk, two Hensen junket tablets are added. After standing twenty minutes at 100 F. the precipitated casein is strained
through gauze, washed in water and forced several times through a fine sieve with a potato masher. This process of sieving is facilitated by adding buttermilk to the curd and is continued until the curd is thoroughly broken into fine flakes. One quart buttermilk, one quart water, one grain of saccharin to the quart are added to the curd and the whole thoroughly beaten to form a fine suspension. The requisite of the food is the fine flocculent suspension of the curd which depends chiefly on thorough sieving. Boiling the precipitated casein is of no benefit. The composition of this protein milk is fat 0.8 per cent., sugar 2.4 per cent., protein 2.8 per cent. and the caloric value is 8.5 per cent., to the ounce. In administering the milk it must not be heated too quickly nor above 90 F., in order to prevent tough masses of casein forming. A large hole in the nipple is necessary and the feeding should be interrupted and the bottle thoroughly shaken every one or two minutes in order to keep the casein from settling to the dependent part of the bottle while the fluid portion alone is being consumed. Hoobler's conclusions are similar to those made by Wilcox, and Hill just quoted. He shows that with a decrease in the total acidity volatile acids and fatty acids in the stools and the increase in the formation of soaps, with a decrease in the amount of water lost through the feces, that there fewer stools through lessened irritability and formed stools through the reduction of water and formation of soap. He also emphasizes the point that protein food should be used as a corrective for diarrheal conditions and not as a true food.

Another problem is what to do to ordinary market milk when certified milk is unavailable to make it safe to the ordinary infant. An idea which has been handed down for a generation is that the heating of milk especially to the boiling temperature, so devitalizes it as to render it unfit for the infant's needs and the such nutritional disorders as scurvy is more apt to develop in the infant fed upon a cooked milk than when it is fed raw. Morse and Coit have done a good deal to settle this moot question and have shown that when brought to the temperature of pasteurization, namely 140 degrees F., for thirty minutes, the nutritive value of the milk is unchanged. Ayres and Johnson, of the Dairy Division Bureau of Animal Industry, in Bulletin 161 give the results of a Study of the Bacteria which Survive Pasteurization. They found that "The average temperature used throughout the country with the 'holder' process
is 62.8° C. (145° F.). With the 'flash' process, 71.1° C. (160° F.).' They showed that "Sudden cooling from 62.8° C. (145° F.) or 71.1° C. (160° F.) within 15 seconds to from 1.7°-3.9° C. (35°-39°F.) does not cause any destruction of bacteria. The Ing-prevailing idea that sudden cooling is an essential part of the process of pasteurization is erroneous so far as any increased destruction of bacteria is concerned. Its value lies only in the fact that milk suddenly cooled is not allowed to stand at temperatures between 37.8° C (100° F.) and 10° C. (50° F.), where rapid bacterial development might occur.

Four distinct groups of bacteria—the acid-forming, the inert, the alkali-forming, and the peptonizing—survive pasteurization as differentiated by their reactions in litmus milk after 14 days' incubation at 30° C. (86° F.).

The percentage of the acid group is increased by pasteurization while the other groups are decreased in their percentage of the total bacteria.

A qualitative study of the acid group shows that many organisms giving characteristics of the typical lactic-acid bacteria survive pasteurization for 30 minutes at 62.8° C. (145° F.). Other lactic-acid forming bacteria survive which may form pigment or vary from the typical lactic types in the fermentative reactions.

The few gas-forming bacteria in pasteurized milk, so far as the results of this investigation indicate, do not include organisms of the colon-aerogenes group.

They include that "In view of the results of this investigation it seems that the control of pasteurization should be maintained by bacterial limits for the milk to be pasteurized, together with supervision which will insure the use of the proper pasteurizing temperature and guard against reinfection. A bacterial standard then need not be set for pasteurized milk."

The great difficulty when milk has been pasteurized is that the family is usually lulled into a sense of security from the fact that the milk has been heated, upon the belief perhaps that no more changes can take place in the milk after being so treated. The ordinary commercial pasteurization of milk by the flash process as has been shown by repeated bacteriological examinations, both by our own health department and by the State Pure Food Department, has shown that unless the milk is kept at a proper temperature following pasteurization it will contain many thousands of bacteria and be entirely unfit for
It is just as important, perhaps more important, that pasteurized milk be kept cold after the completion of thorough pasteurization than it is to keep raw milk cold. All of the micro-organisms are not destroyed by pasteurization, nor are their spores. Pasteurization does, however, make market milk safe to be used, providing it is properly cared for afterward, and this method of treatment for this class of milk should be advocated in the home by the employment of one of the accepted pasteurizers on the market or in a dish which will hold the individual feeding bottles and enough water to cover the bottles up to a level of the top of the milk. The water surrounding the bottles should then be cooled quickly and the milk kept cold until it is consumed by the infant. The problem of keeping the milk cold, especially in the homes of the poor, is one which must be solved and the details of this should be considered by the physician. Ice in the homes where there is a baby is an absolute necessity. In the homes of the poor milk can be kept cold by the use of a home-made Hess refrigerator, which is most effective and is cheaply made.

I have not attempted in this paper to give any elaborate case reports of difficult feeding cases; while they are interesting themselves in a full discussion can well take their place.

My plea is for a more careful painstaking study of this important question of infant feeding. It is a reflection on the profession for it to be so often said "he is a splendid doctor, but he doesn't care anything for babies," and this is more often said of doctors in connection with baby feeding than any other branch of pediatrics. It is an important and interesting subject and merits more study and thought than it gets. Above all, be explicit with mothers; don't take it for granted they know all about it, for they don't; take time to give explicit written directions and you will be surprised how soon your interest in the subject will be quickened.
Surgical Treatment of Infantile Paralysis.—Dr. C L Starr, Toronto: I think that it is due to my colleague, Dr. Gallie, to put on record the work that we are doing together, for which he is largely responsible. The difficulty that we found was that very frequently the strand of silk pulls out of its attachments; and Dr. Gallie suggested tying up the feet with the paralyzed tendon. Take a case of talipes, for instance. Instead of putting the silk in, as suggested by Dr. Allison, attaching the tendon Achilles to the heel, we slightly flex the foot to a right angle, and split the periosteum at the tibia, sufficiently to place the tendon Achilles in it. Fastening it in there pulls the foot absolutely into the position of straight-foot and does the business.

It seems to me that this holds out the possibility of correcting these conditions and getting over the disadvantages of the silk implantation. It is adapted to almost any type of paralytic condition. In varus the peroneus (?) can be removed from behind the tibia to the peroneus longus, and the peroneus longus or the peroneus brevis put into the gap behind the malleolus. (?) If that is stitched into the fascia, it forms a good bony attachment to hold the foot in good position. It, the procedure, is equally applicable to any other situation on the foot.

As to the probability of the tendon’s stretching, I would say that the tendon Achilles will not stretch, although the others may. I want to put this on record, as it is a distinct advance, I think, in the treatment of that kind of cases.

With regard to the knee, I would say that in doing back locking to throw the knee back, I am sure that we all have had the experience of seeing the posterior ligament stretch and allow the knee to go too far back for locomotion purposes.

Neglected Infantile Paralysis.—Wr. Walter Truslow, Brooklyn: The title of this paper is “Neglected Infantile Paralysis;” and, to my mind, one of the joints that is most neglected and with the worst results is the hip joint. We all
know that the contraction of those muscles whose origin is at the anterior superior spine of the ilium, and which cause flexion and abduction, is one of the most difficult things to deal with. The common procedure of near the spine is resorted to. I should like to state that the use of a long Plaster-of-Paris dressing from the upper third of the spine to the toes acts automatically in overcoming these contractions of the hip flexors and abductors. It seems, by the weight of the plaster, to overcome the contractions, unless they are severe. If we then add the trolley apparatus, and get these children moving, we can complete the mechanical conditions necessary for recovery. Those overhead runways that wholesale butchers use are, comparatively speaking, inexpensive; and, with the Sayre head-spring apparatus attached to the wheel on this overhead tray, and passing through a harness, many children are greatly improved.

**Tendon Transplantation in Infantile Paralysis.**—Dr. E. G. Abbott, Portland: As I gather from Dr. Blanchard’s paper that muscle and tendon transplantation is of no value, as Lange considers, I wish to disagree with him entirely. I have made muscle transplantation in many hundreds of cases, and in the majority I have had success, particularly in connection with the foot. Many hundreds of patients who had never done so before in their lives abducted the foot afterwards. A society lady in San Francisco who had not walked for five years, was cured in this way. We transplanted the distal end of the bone. That girl danced eight times at the Mardi Gras Ball, and it would be hard to convince her people that she had not been helped.

Regarding the change, the alteration of the joints, I would state that we have never had any trouble in getting proper alignment of the bone. We have always succeeded in getting proper alignment.

**Treatment of Paralytic Conditions Following Infantile Paralysis.**—Dr. R. E. Soule, New York City: Some time ago, I published an article in relation to the joint in acquired valgus of the foot. Since then, I have developed an operation performed in the treatment of this condition; and I believe that it is a very advantageous procedure. Where we have paralytic valgus of the foot, with loss of the entire tibia posteriorly, we can restore the foot almost absolutely by anchoring the foot to the astragalus, which I have found, in a large number of cases in
which I have had my attention attracted to this point, remains in its normal relation to the tibia and fibula. It does not enter into the deformity first seen. It has a great force in restoring paralytic valgus. I have been able, by this method, to remove all supports or correcting apparatus; and the patients have been walking about with a very slightly perceptible limp or deformity.

Surgical Section of Muscles in Infantile Paralysis.—Dr. B. E McKenzie, Toronto: Referring to the remarks made by Dr. Truslow a few months ago, I would say that within the last six months or a year the most of the cases of infantile paralysis treated by us were of the kind mentioned by him, where there was a marked lordosis. In one of these cases, I thought that by the plan he spoke of, keeping the feet in position, the legs extended at the knees, using these as lever power, and keeping the child in training, the contraction of the muscles at the thigh and the tilt of the pelvis forward would be overcome. I found, however, that there was no further progress; so I made an extensive section of the muscles in the front by open incision, keeping the child recumbent with the lordosis fully corrected in plaster until the healing had occurred. In less than one month the girl volunteered the statement that she had made more progress in this time than in years previous. Since then I have followed that practice exclusively, and have had good results. In cases in which there is extreme lordosis, when the patients are allowed to stay in a sitting posture, I do not think that you can have the best success possible without extensive section of the flexor muscles.

Tendon Transplantation in Infantile Paralysis.—Dr. A. H. Freiberg, Cincinnati: I am, I think, as optimistic as any man has a right to be regarding the effect of tendon transplantation for infantile paralysis, but I have come to the conclusion that we have been much too precipitate in our determination to operate in neglected cases of this disease. I make it a rule that we shall not decide to do a tendon transplantation in a neglected case, particularly of the lower extremity, until at least four to six months of patient mechanical and massage treatment have been gone through with; because our experience is that in this time we shall have a considerable gain in function, due to giving the muscles an opportunity for structurally shortening again. Mr. Robert Jones has called attention to this fact in dif-
ferent ways, and we all know it but this fact is lost sight of in concluding to operate on a case that has been paralyzed for a long enough time to make us think that a tendon transplantation is necessary. As the result of this treatment, we have often decided that such an operation was inadvisable in cases that at first had seemed to indicate tendon transplantation. We have seen function return to muscles that seemed at first to be entirely devoid of it. I do not think that I am by any means alone in coming to this conclusion; that if more men would adopt a plan such as this, many operations would be avoided and—what is much more important—many operations would be simplified because of our showing to ourselves the lack of any necessity to substitute others for muscles whose function is not lost, but is only in abeyance.

Prevention of Deformities in Infantile Paralysis.—Dr. Wallace Blanchard, Chicago: I merely called attention to the diverging views of Lange and Lorenz on the subject of tendon transplantation. I gave the views of the men, as I gathered them in their clinics, practically without comment, expecting that this would arouse considerable discussion at this time. The large number of neglected cases of infantile paralysis that are found in every clinic in this country cannot be too strongly emphasized, and we cannot be too strong in impressing upon the general profession and practitioners at large the fact that the deformities of infantile paralysis creep slowly forward and become fixed; and that the prevention of these deformities by an early knowledge of the slow action of the shortening of the unparalyzed muscles and the lengthening of the paralyzed muscles should be watched. The orthopedic surgeon should be called in early, and the prevention of these deformities will be a matter that will be accomplished.

Heliotherapy (Rollier) as an Adjunct in the Treatment of Bone Disease.—Dr. Rowland B. Hammond, Providence, R. I.: Heliopathy of the sinuses has been practiced for many years. Rollier’s method of exposing the entire body is comparatively new. Experiences differ in a high and dry climate, and in a low, foggy land. I believe that Heliotherapy is of marked value in the treatment of bone disease by stimulating the recuperative powers of these parts and shortening the course of the disease. It can be used at the seashore as well as in a high altitude. Sinuses tend to close more quickly with its use than
without such treatment. Combined with sea bathing and outdoor life, it is a most valuable addition to our treatment.

Dr. B. E. McKenzie, Toronto: I have had a large experience along this line of outdoor treatment. We do not expose our patients to the sun for so long a time, nor do we expose the entire body. It would probably be better if we did. I believe that the time of treatment essential for the cure of tuberculosis joint disease is reduced fifty per cent, by the method we follow. Th number of abcesses are also reduced.

Dr. Hammond has brough before us a very important subject, and I must disarm criticism of anything that I may say by indicating that the statements that I have to make are not accurate percentages as those were that were made by Dr. Hammond. Twelve or thirteen years ago, owing to the conditions which I need not now describe, we were compelled to place our patients out of doors much of the time, and noticing the advantages of this treatment we have extended the work. It has now become a habit. Beck, of fame in connection with the bismuth injections, wrote me, as to all members of the associations, and sent me a blank form asking me to state what number of sinuses etc., I had found, and what was the method of treatment used; also what was the success obtained in such cases with his method. In reply I said that I had little or no experience with it, because I had few opportunities to use it. I seldom see a tubercular sinus.

We have generally exposed a large area, which was not limited to the vicinity of the diseased part. In disease, alternately on the face and back. We give rest with the Bradford frame, on which the patients are kept for months, without permission to sit up or make any change in their position. They are also well cared for in every other way. I had intended, two years ago, to compile the statistics that I had on the subject but my tendency to postpone, however, has prevented my doing so. A child of thirteen, with a large abcess on the head of the femur had it completely disappear. She had a history of its presence for several years, and it may have been there some time before it was recognized. At first thought that this collection must be opened; but it was injected with iodoform, and the girl kept in the manner that I have described; and within two months, the abcess had entirely disappeared. Some may say that such an occurrence is uncommon; but I think that it is
not, in the conditions just named. The patient was kept out of doors, and the abscess never opened. I seldom open a tubercular abscess; and they do not open themselves, if we have an opportunity to employ this method of treatment.

When I was a lad, my father's farm lay to the north of another farm, which was not cleared of wood until I became a man. There was a strip of land two or three rods wide, immediately to the north of a dense wood on this farm. Whatever was sown on that strip of land never came to maturity, and this fact has impressed me. This land got the sunlight in the morning and afternoon, and it was out of doors; but the hot sunlight necessary for the complete fruition of the vegetables planted there never reached it. I believe that this is also essential for the development of human beings.

**Foerstre Operation.**—Dr. S. J. Hunkin, San Francisco. In all, we have had eighteen operations on fifteen patients. In our entire series there were but two deaths. Therefore, we may say that the results of our treatment of spastic paralyses by Foerstre's operation have been fairly good. While they have not been so entirely satisfactory in all respects as I had been led to expect, yet all my patients showed greater improvement than I formerly attained with other procedures. To attain the greatest amount of success the operation must be in the shortest possible time. We feel that when we get through in thirty-eight minutes, eight minutes have been wasted; because the nurses were not ready, on account of not being familiar with the operation perhaps. We had no shock in any but two cases. We think that this is due to the rapidity of the work and the method that we used.

**Discussion.**—Dr. J. K. Young, Philadelphia: This paper is so important and these cases are so rare that I think it well for me to refer to two that have come under my observation. Both were operated on by Dr. Frazier. One was visceral; and the other, a lumbar case. Neither was operated upon by me; because the first was under Dr. Frazier's care and the second was also given to him because he was studying the subject very extensively. The operation on the first child was unsuccessful, and the second patient was made worse by it. The latter was a boy of fourteen years; and the shock was so severe that the operation had to be abandoned after performing the
laminectomy. The operation was thus only partially performed.

Dr. G. G. Davis, Philadelphia: I might also mention a third operation of this kind done by Dr. Frazier. The patient was a lad of thirteen or fourteen years old, whom I had under my care for a while; and the condition in this case was markedly improved. The boy is alive today.

Dr. Robert B. Osgood, Boston: I have been looking up some of the results of these operations; and, so far as I can discover, the best result achieved in the shortest time of which we know, is that Dr. Hunkin, which is a source of great satisfaction to this Association. Dr. Hunkin seems to make light of it but he does it in a great deal shorter time than anyone that I know does.

Dr. S. J. Hunkin, San Francisco: The shock of the operation is in proportion to the time taken to perform it. The first operation we did took an hour. Since then, we have never been over forty minutes; and we believe it can be done in thirty.

The following officers were elected for the ensuing year: President, Dr. G. G. Davis, Philadelphia; First Vice-President, Dr. T. L. Starr, Toronto; Second Vice-President, Dr. L. W. Ely, Denver; Secretary, Dr. Ralph R. Fitch, Rochester, N. Y.; Treasurer, Dr. John L. Porter, Chicago.

The place of meeting is to be Philadelphia, Pa., the date to be decided on later by the Executive Committee.
RETROSPECT OF CURRENT PEDIATRIC LITERATURE.

Infectious Diseases.

Under the Charge of
S.T. GEO. T. GRINNAN, M. D.

Associate Professor Pediatrics, Medical College of Virginia; Visiting Pediatrist, Memorial Hospital, Richmond, Va.

Case Simulating Meningitis Due to Escape of Thread-Worms into Peritoneal Cavity Through Perforated Appendix. R. N. H. A. Whitelocke. British Journal of Children's Diseases, London.—A girl, aged 5½ years, was admitted to the hospital with the diagnosis of tuberculous meningitis. A year previously an enlarged lymph-node had been removed from the side of her neck. She seemed very ill, had a temperature of 102.4 F. and a pulse-rate of 112. There was marked converging strabismus, with contraction of both pupils and some photophobia. For thirty-six hours or more she had been sick, was restless, and now and then screamed out when apparently dozing. She was very constipated, and an anemia had produced but a small result. She slept badly and often refused food; any attempt at drinking brought out immediate vomiting. She had urinary incontinence. There was no disease of the ears or air-sinuses. After two days she began to pick at the bedclothes, to throw herself about in bed in a restless, irregular manner, and to wet herself frequently. At this period, Whitelocke noticed for the first time that she kept her right lower limb fully flexed and drawn up to the abdomen, while she moved the left from time to time, often extending it. Palpitation of the lower abdomen gave the impression of increased rigidity in the right rectus muscle, and caused her to call out when even gentle pressure was brought to bear over the cecum. There was no distinct dulness on percussion anywhere.

When the peritoneum was opened a small quantity of semipurulent fluid escaped, emitting a fecal odor. An inflamed process of omentum was found covering in the anterior surface of the cecum and the appendix completely. In peeling the inflamed omentum from the appendix Whitelocke came on a colony of about a dozen dead thread-worms. After the appendix had been cleared and delivered through the wound it was found to possess a pin-point perforation ⅛ inch from its distal extremity on its mesial aspect. Through the minute perforation a living thread-worm was to be seen wriggling until it finally exuded itself on to a swab held to receive it. In quick succession three or four others of smaller size, and presumably of less mature age, passed in single file through the opening. The base of the appendix was crushed and ligatured, and the organ excised according to custom. The omentum was then drawn into the wound and carefully examined, and as a result three more live worms were removed from its meshes at some distance from the inflamed and previously attached portion. In swabbing the pelvic peritoneum with hot saline in search for others, four more live ones were caught and removed. The wound was then closed. The appendix when cut open was found to be crammed full of oxyurids of all sizes and ages. The very small and immature worms greatly predominated. The mucous membrane was considerably ulcerated, especially in the immediate neighborhood of the perforation. The opening was so small that a fully grown oxyuris squeezed itself through with decided
difficulty. After the operation the nervous symptoms and sickness very soon disappeared, the pulse and temperature fell to normal on the following day, and from this time onward the recovery was rapid and complete.

**Tonsillitis Following Use of Staphylococcus Spray.** Clara M. Davis, A.B., M.D. Lansing, Mich., Exchange.—In view of the recent numerous reports regarding the use of staphylococcus cultures for the purpose of clearing the throat of diphtheria bacilli, it seemed that a report of the following case might be of interest:

**History.**—L. L., aged 18, schoolgirl, on Oct. 26, 1912, sought medical advice for the relief of continuous colds and constant nasal discharge. The immediate family of the patient were well and had never suffered from any throat or nasal diseases. There were three cases of cancer in the mother’s family and there was history of Bright disease on the paternal side. The patient was well and strong. She had whooping cough, measles and mumps and had always suffered from frequent colds and tonsillitis. Four years previously she had had adenoids removed and tonsillotomy done, with partial relief of the condition. She had had no attacks of tonsillitis since. For the last three months, following acute rhinitis, there had been constant nasal discharge.

**Physical Examination.**—Patient was a large, well-developed girl; both tonsils were large and the crypts contained cheesy exudate. Nasal examination showed a markedly deflected septum with obstruction of left nasal passage.

**Treatment and Course.**—October 31, the septum was straightened by Dr. M. L. Cushman. Recovery was rather slow and there was slight persistence of nasal discharge. November 14, the patient had a chill and complained of severe sore throat; November 16, a small patch of membrane appeared in the nasopharynx, culture from which, November 17, showed pure growth of Klebs-Loeffler bacillus. The membrane by this time had extended forward in the nose and was present on the right tonsil. The uvula was extremely edematous but showed no membrane.

Three thousand units of antitoxin were given with immediate improvement; November 22, the throat and nose were free from membrane. The patient’s general condition was excellent throughout and at no time did she feel particularly ill. Swabs from the nose and throat on November 26 and December 2 both showed pure culture of Klebs-Loeffler.

As the patient was anxious to get back to boarding school at the earliest possible moment, a pure culture of Staphylococcus aureus emulsified with sterile normal salt solution, prepared by Dr. M. L. Holm, state bacteriologist, was given her with directions to spray the nose and throat three times a day. She began to use this at 8 a. m., December 3, the throat being normal in appearance.

December 4, at 10 a. m., the patient had a slight chill and sore throat. December 5, she was confined to bed, had complete anorexia, was nauseated and vomited; the bowels were constipated; temperature was 101.7; pulse was 120; there was profuse nasal discharge; there was no membrane in the throat and nose but the tonsils were much swollen and covered with discrete yellowish spots. At 7 p. m., the temperature was 103, pulse 122, and the cervical lymph-nodes were markedly enlarged.

One grain, broken doses, of calomel and five-grain doses of aspirin every three hours were ordered; during the night, the temperature steadily dropped to 99.5 and the pulse to 92. Recovery was uneventful but slow. The cervical lymph-nodes were enlarged and tender for about ten days. The nasal discharge continued profuse during this time and about five days after the beginning of the attack there was some swelling of the uvula. The patient felt much sicker during the attack of tonsillitis than during the initial attack of diphtheria.
Smears and culture from the throat and nose, December 5, showed abundant staphylococcus growth with a few diphtheria bacilli from the culture in the throat; December 10, the culture showed no diphtheria bacilli but showed numerous staphylococci with a few pneumococci and streptococci.

**Diphtheretic Paralysis.**—In the British Medical Journal August 9, 1913, we find the following on Diphtheretic Paralysis: Rolleston (Archives of Pediatrics, May, 1913) records his observations upon the occurrence of paralysis among 2,300 cases of diphtheria under his care. As none of the children admitted with diphtheria were discharged before the end of the sixth week, opportunities for observing onset of paralysis were exceptionally favorable, seeing that it is rare for the condition to develop later. Of the 2,300 cases, 477 (20.7 per cent.) showed some form of paralysis, 184 being severe and 85 fatal, and in each series of 100 the percentage of paralysis cases was never less than 10 or more than 31. By classification of the cases into six groups according to the severity of the initial attack, it was seen that there exists a close relationship between the acute attack and the subsequent paralysis. Of the 216 very severe cases, 50 died of toxæmia before any paralysis developed, so that all but 13 of the survivors had some paralysis; and, with the exception of these toxæmic cases, of 107 showing haemorrhagic diphtheria, all had paralyses of a severe kind. Paralysis was found to be much more frequent and severe in cases in which the nostrils as well as the throat were involved than in those in which the fauces alone were affected, and not only is actual paralysis more common after severe than after mild diphtheria, but the tendon-jerks are more likely to be affected and Babinski's sign to be present. Of the total cases, 31 (1.3 per cent.) suffered relapses which were separated from the initial attack by periods varying from three to fourteen weeks, and of these two showed palatal and ocular paralyses after the first attack, but none followed the relapses. The invariably mild character of the relapses is shown by their not being followed by paralysis, due in part to the administration of antitoxin and to the immunity conferred by the primary attack. Fifty (2.1 per cent.) had second attacks separated from the primary attack by intervals varying from three months to fourteen years. Early injection of antitoxin undoubtedly cuts short the disease and tends to diminish the occurrence of subsequent complications. The only paralyses occurring during the first fortnight are cardiac and palatal, the heart failure being secondary to vaso-motor paralysis, and no case proved fatal in which the symptoms had not developed before the end of the second week, after which no serious paralysis usually occurs before the end of the fifth week—for example pharyngeal and diaphragmatic—these later generalized paralyses being much less frequent and shorter in duration than the earlier forms of post-diphtheretic paralysis. The older the patient the better the prognosis. Closely associated with the cardiac paralysis is a progressive hepatic enlargement, partly due to congestion and partly to fatty degeneration, the untoward significance of which is seen in the fact that of 111 cases showing such signs 71 died—a mortality of 63.9 per cent., as compared with 6.7 per cent., among cases of diphtheria in whom a routine examination of the liver had been made. A well-marked serum reaction is a favorable sign, it being exceptional for those cases to die from cardiac paralysis in whom a well-developed urticarial eruption has occurred. Treatment consists in the early injection of antitoxin, rest in bed in recumbent position, and in cases of cardiac, pharyngeal, or diaphragmatic paralysis adrenalin, by the mouth or subcutaneously, should be given to combat the vaso-motor changes.

**Blood and Cerebrospinal Fluid in Mumps.**—In the Jl. of the A. M. A. August 9, 1913, we find the following abstract of the article by A. Feiling in the London Lancet of June 12, 1913: From the results of his observations Feiling thinks the following conclusions are justi-
fied: (1) That the blood in mumps shows definite changes in the cor-
puscular content; (2) that these changes consist (a) in a slight in-
crease in the total number of leukocytes, and (b) in a lymphocytosis
which is both relative and absolute; (3) that this lymphocytosis is
present on the first day of the disease and persists for at least fourteen
days; (4) that the occurrence of orchitis does not invariably alter the
blood-picture, and (5) that the changes in the blood are of distinct
diagnostic value in differentiating mumps from other inflammatory
swellings of the parotid or submaxillary salivary glands and from
cases of lymphadenitis. In one case of mumps, a clinical picture
strongly suggestive of meningitis is presented, and the clinical diag-
nosis is supported by the examination of the cerebrospinal fluid. The
two together constitute a fairly complete proof of the existence of an
inflammatory lesion of the meninges of the brain and spinal cord
which undoubtedly followed mumps and for which no other cause
could be found.

From this case and from the accounts of the other quoted cases
the following conclusions are drawn: (1) That a lymphocytosis of
the cerebrospinal fluid occurs in mumps, when that disease is compli-
cated by meningitis or by lesions affecting the cranial nerves; and (2)
that a lymphocytosis has been found in cases of mumps which have
presented no clear clinical symptoms of any organic lesion of the
nervous system. Finally, from a consideration of the changes found in
the blood and cerebrospinal fluid, we are, Feiling thinks, justified in
assuming that the virus of mumps excites an inflammatory reaction
in the body whose characteristic feature is a great aggregation of
lymphocytes.

Diseases of the Alimentary System.

Under the Charge of

JAMES WARREN VAN DERSLICE, M. D.

Assistant Professor of Pediatrics, Rush Medical College, Chicago, Ill.

Prophylaxis in Summer Diarrhea.—Dr. Charles Gilmore Kerley
read this paper, in which he stated that it was an easy matter to tell
what was necessary in order to prevent summer diarrhea in children,
but that the working out of the problem among the masses was an-
other thing. A death from summer diarrhea was a most exceptional
occurrence among his private patients. This showed that a consider-
able mortality was unnecessary. The greatest success lay in preven-
tion. The mothers should be taught to keep the baby's digestive tract
in a normal state every day in the year. Susceptibility to gastrointes-
tinal disorders due to diminished resistance was a most important
factor in summer mortality. This explained the higher mortality of
July and August as compared with that of August and September; the
susceptible and weaklings succumbed in the earlier months. As a
general proposition the milk should be pasteurized during the sum-
mer months among all classes, but especially among the poorer people
to whom the best milk supply was not available. He instructed every
mother and nurse under his care as to the importance of care in the
preparation of milk and also as to the necessity of feeding lightly on
hot days. One or two ounces should be thrown out of each bottle
and replaced with water. The mother was told not to expect the
child to gain weight during the summer. He considered the weight
chart a means of much danger and forbade its use. A green stool
should be regarded as a danger signal and castor oil should be given
no matter how trivial that disorder, and later a cereal decoction for a
day or two, and when milk was resumed it should be given in small
amounts. It was a safe assertion that nearly all children were over-
clad in warm weather. Defective heat radiation was a factor of no
little etiological importance in summer diarrhea. A knit bellyband and a cheesecloth napkin constituted the proper apparel for a hot and humid day. Two or three spongings with cool water added much to the child's comfort. The baby should be kept quiet and not handled. Not all of his infant patients went to the country in the summer, and the com-

**Medicinal Treatment of Summer Diarrhea.**—Dr. Walter Lester Carr considered this phase of the subject under discussion. He stated that the medicinal treatment of summer diarrhea became an important part of its therapeutic management when there was neglect of preventive measures. The objects in the treatment of summer diarrhea were: (1) To aid nature in her efforts to clear the stomach and intestines of the material that was the source of irritation; (2) to lessen the effect of gastrointestinal irritability and general toxemia; (3) to sustain strength and the digestive processes, and (4) to restore the normal functions of the intestines. Most cases of summer diarrhea recovered with little medication, but many patients who had severe exhaustion, toxemia, intestinal indigestion, anemia, or kidney disturbance required some medical attention. This treatment might be summarized as follows: (1) Castor oil and calomel were valuable early in summer diarrhea, to get rid of offending material in the intestine, and when symptoms of intestinal irritation occurred. (2) Opium was useful only when frequent stools of a diarrhea exhausted the child and interfered with a rational routine of management. (3) Intestinal antiseptics, such as salol and bismuth, had a place in the treatment of summer diarrhea where there were secondary intestinal symptoms. (4) Agents to increase digestive power and bacterial preparations that added to the protective forces of the intestinal flora limited the time of convalescence and diminished the waste from the diarrhea. (5) Alcohol, camphor, caffeine, and strychnine assisted nature in limiting the exhaustion consequent upon a protracted diarrhea or a toxemia, but were not of any value unless there was careful dietetic treatment. (6) Vaccines or sera had not shown that they retarded the course of summer diarrhea, but they seemed to have lessened some of the severe symptoms in cases with systemic invasion of pathogenic organisms. (7) Drugs were most needed when the prophylaxis of summer diarrhea was neglected and the diet was not regulated.

**Constipation and Diarrhea in Children.**—Birk emphasizes anew that the feeding of children with much milk, eggs, butter and meat, but scarcely any cereals, is almost certain to make them constipated on account of lack of waste. Laxatives afford but temporary relief and leave the condition worse than before. By correcting the diet, giving vegetables, potatoes and bread, constipation will right itself. He adds that it is not enough to add these articles of food to the diet; they must be taken instead of milk and eggs, which must be dropped almost completely. He says that potato is better given in the form of salad than mashed. The sluggish intestines do not respond at once to the change in the diet, but with a little patience all is soon well. He decries particularly the use of purgatives and laxatives for infants, regarding the food in all cases, young and old, as the true source of the trouble, readily curable by correcting the diet. For infants with diarrhea, he stops all food for twenty-four hours, giving merely tea sweetened with saccharin instead of sugar to prevent further abnormal fermentation in the bowels. The intestines are generally empty at the end of twenty-four hours and the fermentation ceases for lack of fuel. The two following days he gives only thin oatmeal gruel and then gradually returns to milk. Under this treatment the milder cases promptly recover, but in the severer type the fermentations commence again as soon as the former food is resumed. The children in this class usually have a history of several attacks of diarrhea, or the incorrect food has been continued notwithstanding the rebellion of
the intestines. For these severe types, restriction to albumin or protein milk answers ideally the desired purpose. Thanks to its minimal sugar content, the fermentation processes get no sugar for further fuel, and thanks to its high albumen content it promotes putrefaction processes to such an extent that formed stools result such as otherwise are encountered only in constipated infants. The albumin milk or its equivalent is thus a true casual therapy, and experience has confirmed the theoretical premises so that it must be regarded as the ideal antidiarrheic for infants. Constipation from malnutrition owing to unsatisfactory utilization of milk is to be combatted with malted gruel; laxatives or purgatives are absolutely contra-indicated in constipation from this cause. With malnutrition from milk, the stools abound in lime soaps and the system is thus being abnormally drained of its lime. It is by no means a casual coincidence that children with "milk malnutrition" (Milch-nahrscaden) are exceptionally prone to rachitis and convulsions. He declares that when there is already an abnormal draining away of lime, to add to the drain by giving purgatives and neglecting the correction of the diet is little better than malpractice. The most striking symptom of milk malnutrition and its consequences is the peculiar gray, dry stools, the so-called soap stools. The infants’ power of tolerating cow's milk is exceptionally low in these cases, and any amount over this limit acts almost as a direct poison. The proportion of milk in the diet must be reduced and the deficit in calories made up by carbohydrates, and it is important to give the carbohydrates in the form of maltose, a malted gruel. His directions for making the gruel are to heat in 50 gm. of wheat flour in a third of a liter of milk and strain. In a second vessel 100 gm. of (Loflund's) malt soup extract is dissolved in two-thirds of a liter of water at 50 C. and heated nearly to boiling. Then the flour-milk mixture is added and the whole heated for three or five minutes.

[Ruhrah's directions for a malted gruel are to boil a tablespoonful of any flour desired in a little more than a pint of water for fifteen minutes. As soon as it has cooled, a teaspoonful of a good malt extract or a teaspoonful of diastase is added. The mixture is stirred thoroughly, and may then be used in the place of ordinary barley water. Diastase preparations are made by most of the leading manufacturing chemists. Chapin suggests that a home-made decoction of malt be used in making malted gruel. His directions are as follows: A tablespoonful of malted barley-grains is put in a cup and enough cold water added to cover it—usually two teaspoonfuls. This is prepared in the evening and placed in the refrigerator over night. In the morning the water, looking like thin tea, is removed with a spoon or skimmed off and is ready for use. About a tablespoonful of this solution can be secured and is very active in diastase. It is sufficient, he says, to dextrinize a pint of gruel in ten to fifteen minutes. This should be prepared fresh every day.]

Birk states that the effect of the malted gruel is apparent almost at once. The stools become dark brown and there are three or four passages a day. His article on "Purges and Antidarrheics" is thus practically equivalent to "Don't use them." Regulation of the diet is the main and indispensable factor in treatment and renders drugs unnecessary.—J. A. M. A., 8-16-13.

Fatal Tobacco Poisoning.—Edwin C. Garvin, M. D. (Cleveland Med. Jour., Feb., p. 130).—A healthy girl, aged 6½ years, who had thread worms, was given by her mother a rectal injection of one pint of water, in which was dissolved 1½ teaspoonfuls of tobacco. The child immediately complained of faintness, inability to stand, and great nausea, and soon commenced to vomit very severely. The bowels also acted and a part at least of the injection was expelled. These symptoms continued for about 15 minutes, then convulsions ensued and lasted about 20 minutes. The child became quiet and died in collapse about 45 minutes after administration of the injection.
Diseases of the Respiratory System
Under Charge of
W. C. HOLLOPETER, A.M., D.D.
Professor of Pediatrics, Medico-Chirurgical College, Philadelphia

Diagnosis of Pulmonary Tuberculosis by Complement Fixation.—M. Kinghorn and C. Twichell (Zeit. fur Tuberkulose, March, 1913, vol xx). In the British Medical Journal of August 9, 1913, we find the following: Find that the diagnosis of pulmonary tuberculosis by the Bordet-Gengou test of complement deviation or fixation is unsatisfactory. Their technique was practically that of Wasserman and Bruck; and in all their tests they used bacillen emulsion instead of old tuberculin. The serums examined were inactivated for half an hour in a water bath, at a temperature of 55 degrees to 56 degrees. Sheep’s blood was used as the antigen, rabbit’s immune haemolysin as amboceptor, and normal guinea-pig’s blood as complement. This was undiluted and usually in the proportion of 0.1 c.cm. Considerable differences in the strength of serums obtained from guinea-pigs were found; and some of the serums were too weak to use. Of the thirty-eight serums examined, thirty-seven were taken from the blood, and one from the pleuritic fluid of a patient suffering from advanced tuberculosis. The serums of 7 healthy persons did not once fix complement; and of 8 cases of incipient pulmonary tuberculosis only 3 fixed complement. Of 14 advanced cases of pulmonary tuberculosis 13 fixed complement. Of 3 cases of arrested disease all fixed complement. The serums of 3 persons suspected of incipient disease fixed complement in every case. Of the total of 25 patients in whom pulmonary tuberculosis was diagnosed, 19 gave a positive reaction and 6 a negative reaction. In incipient cases complement fixation occurred only in 37.5 per cent. It was anticipated that the test would be positive in incipient cases by fever, because antituberculin amboceptors would probably be present. But in many such cases the test was negative. It was positive in 93.3 per cent. of advanced cases, presumably because tuberculous substances are thrown into the system and produce antituberculin amboceptors in the later stages of the disease. The authors conclude that a positive reaction in an incipient or doubtful case points strongly to the presence of tuberculosis, whereas a negative reaction in such case is of little or no value, as tuberculosis may yet be present. They also hold that a negative reaction in a case of serious illness, in which the diagnosis is uncertain, does not necessarily disprove the presence of tuberculosis. They disagree with Michaelis and Eisner, who consider the appearance of antituberculin in patients not treated with tuberculin an unfavourable sign, indicative of progressive disease, for the 3 patients with arrested disease fixed complement, and 7 of the patients with advanced disease fixed complement, and yet were in excellent condition and steadily improving.

Pulmonary Tuberculosis in Children.—The Journal of the American Medical Association August 9, 1913, abstracts an article by L. C. Ager from the New York State Journal of Medicine, July, 1913, on Pulmonary Tuberculosis in Children, as follows:

Although many experimenters have claimed to accomplish good results from the use of bacterins in cases of general infection in which there is a true bacteremia present, Ager believes that such treatment seems to have no logical foundation. The reason advanced for introducing into the circulation the toxins of a disease from which a pa-
tient is already suffering is that the reaction to the toxin is largely local and that the active, acquired immunity is also largely local. If, therefore, a general systemic reaction can be produced one shall expect to secure a systemic immunity. In spite of the recent reports of Pettit and Brown, Ager has been convinced by the investigations of Avery that the secondary organisms are practically never found in the blood of phthisical patients, even in the terminal stages. If that is true, pulmonary tuberculosis is almost entirely a local process and the mixed vaccines ought to be of benefit.

With these facts in view, he treated ten patients in the Brooklyn Home for Consumptives. The ten patients were selected for the following reasons: They had all been in the home long enough to show the extraordinary improvement which removal to proper conditions always produces in children no matter how advanced the case; they all showed active lesions. They represented different types and different stages of the disease. The bacterial vaccine used was a mixed bacterin, made up as follows: B. influenzae, B. Friedlander, M. catarrhalis and pneumococcus 12,500,000 each; diphtheroids 25,000,000 each; streptococcus 12,500,000 each; Staphylococcus albus 50,000,000 each; Staphylococcus aureus 50,000,000. This product was selected because it contained the organisms that Ager had occasionally found in washed specimens of sputum from the home. The first dose in each case was two-fifths of the amount tabulated above. The second dose was three-fifths. The third dose was twice the amount, the fourth was four times, and the fifth and last dose was eight times. The intervals between doses were four days each. This dosage might well be criticized for its rapid increase if any reactions had been observed.

No definite reactions were observed in any case. Two children complained of slight muscular pains after the first injection. A careful study of the four hour rectal temperature charts showed no special changes in any case. In four patients there were slight changes that might be attributed to the treatment. The only positive conclusion drawn by Ager from these cases is that this particular bacterin bears no special relation to these particular cases. It is quite possible that autogenous vaccines might have shown a definite reaction.

**Tuberculosis in Young Children.**—Hollensen states that until recently the prognosis of tuberculosis in young children less than 2 years old has been almost invariably grave, but in her experience a course of tuberculin treatment whenever the skin test (Pirquet) has given a positive reaction in an infant, seems to have brought about a turn for the better. She relates the particulars in a number of cases, the results being that of twelve infants less than a year old given tuberculin treatment, over 16 per cent. seemed entirely cured; over 16 per cent. were materially improved but died of an intercurrent disease; 16 per cent. are still under treatment, thriving well to date, and only 16 per cent. died of the tuberculosis and these had not been given the tuberculin treatment as the general condition was too bad with high fever when first seen. Of thirty-four infants 12 to 24 months old tuberculin treatment was given to twenty-four, that is, over 70 per cent., and 26.5 per cent. are now clinically cured and only 17.5 per cent. have died of tuberculosis. Of the nine children from 2 to 4 years old, seven were given tuberculin treatment and 33 per cent. of the nine children are cured, and only one has succumbed to the tuberculosis. The tuberculin treatment is thus without effect in over 16 per cent. of the infants less than a year old, in 23.5 per cent. of the children between 1 and 2 years old, and in 22.2 per cent. of the children between 2 and 4. The number of cured cases will be much larger when the course is concluded for those still under treatment who are now thriving well. Hollensen calls attention to the fact that when the Pirquet became negative under the tuberculin treatment, it was still negative on repetition of the test later; some of the children have
been thus repeatedly tested for two or three years since completion of the course. Certain others who were only much improved at the completion of the course reacted positively later and some have signs of tuberculosis at present. All this material is summarized and tabulated for comparison.

Surgical Diseases of Childhood.
Under the Charge of
WILLIAM A. EDWARDS, M.D.
Professor of Pediatrics, University of California, Los Angeles, Cal.


The infant appeared normal until 2 a. m. on his fourth day. He had taken breast milk, retained it and had normal bowel movements. At that time he began to cry, seemed in much pain and also vomited. After about two hours he became quiet and remained so during the forenoon. At four o'clock that afternoon he had a bloody stool. About four hours later the family physician made a diagnosis of intussusception, feeling a mass in the abdomen and per rectum, and advised immediate removal to the hospital. The parents would not do this, however, until the following afternoon; the persistence of crying, vomiting and bloody discharges per rectum finally leading them to follow the advice given by their physician the day before. At that time the child was prostrated and an unpromising subject for operation.

Under ether anesthesia the operation, which was done immediately after admission to the hospital, began 37 hours after the onset of symptoms. After a long right rectus incision the intussusceptum could be pushed up until its apex was a little above the sigmoid flexure. In spite of great care the coating of the bowel began to split in several places and no further progress could be made toward reduction. The child was now in desperate condition, the pulse could not be felt and respiration only an occasional shallow gasp. Resection of the intussuscepted portion offered the only hope of saving the child's life, and this was done. "The intestine was removed from above the middle of the transverse colon to the upper portion of the sigmoid colon, and its mesenteric vessels tied. Both ends of the remaining intestine were invaginated by the aid of purse string sutures, a lateral anastomosis was quickly made without clamps, silk being used for the outer line of stitches and chromic gut for the inner line, which included all the intestinal layers. The abdominal wall was closed, a hypoderinoclysis was given in each axilla and the child was returned to the ward in a condition rather better than that which he had shown at the earlier part of the operation." At the date of report (18 days after operation) the child was progressing satisfactorily.

The literature shows six cases less than a year old who have recovered after intestinal resection for intussusception, as follows: E. W. Peterson, an infant aged 42-3 months, Collinson 3 months, Flint 11 months, Woolfenden 3 months, Fairbanks and Vickers 7 months, Hughes 6 months.

Dowd's case, reported above, had the five classical symptoms: (1) Sudden attack of pain accompanied by crying. (2) Vomiting which could not be controlled. (3) Blood from the rectum. (4) Palpable mass within the rectum. (5) Mass palpable by external abdominal examination. Of these blood from the rectum is probably the one which aids most in diagnosis, crying and vomiting being valuable aids. "Among Eccles' cases blood or bloody mucus was present in 61, absent in 3, not noted in 6." A mass can usually be felt on ab-
dominal palpitation and often the apex of the intussusception can be felt by rectum. In operating the effort at reduction should be made with great patience and care by pressing from below the apex of the intussusception. Reduction is thus obtained in about 90 per cent. of the cases. Resection of the intestine is only to be undertaken when other measures have failed.

**TONSILLECTOMY UNDER LOCAL ANESTHESIA.**

All of the one hundred cases reported upon by the reader of the paper were examined several months after operation and no patient under fourteen years of age was operated upon under local anesthesia. There was no grouping of the patients examined as to whether the throat conditions were the result of operation under local or general anesthesia. The enucleation of the tonsils had been performed by some one of the many methods in vogue for the last few years for the complete removal of the gland and as the operations were performed in practically all the public institutions in New York many men of prominence in Laryngology were the operators, so that the results could not be attributed to poor technique on the part of one man.

The writer arrived at the conclusion that tonsillectomy, so far as removing pathological tonsils is concerned, is a better operation than the old time tonsillotomy, but pointed out that many of the throat defects following the operation of enucleation are due to clumsy and non-surgical technique.

The writer also pointed out the normal relation of the surrounding parts to the tonsil and put up a strong argument against the use of sharp instruments for the dissection of the tonsil from its bed, that being the cause of injury to the muscles, with resulting deformities.

Of the one hundred cases examined months after operation more than 80% of the patients had deformed throats. The 20% of patients, with what appeared to be normal throats following the operation, were inconvenienced in no way at any time following the operation. Of the eighty patients thirty-four complained of speech defects for from one to three weeks after operation, sixteen complained of speech defects for more than three months after operation, sixteen complained of speech defects for more than three months after operation, while four had practically lost the singing voice. Abot 25% of the patients stated that their throats felt better than before. Inability to use certain words had continued with 5% of the patients for more than six months after operation.
BOOK REVIEWS

Diseases of the Stomach. With special reference to treatment. By Charles D. Aaron, ScD., M. D., Professor of Gastroenterology and adjunct professor of Dietetics in the Detroit College of Medicine; Professor of Diseases of the Stomach and Intestines in the Detroit Post-Graduate School of Medicine; Consulting Gastroenterologist to Harper Hospital. Lea & Febiger, Philadelphia and New York. Price, $4.75.

As one of the early workers in this special field of Medicine Dr. Aaron has added to an admirable training the ripening of judgment by an extensive experience both in institutional and private practice. The author has very wisely planned this handy manual, which contains the fullest description of all the up-to-date methods at our command for treating disorders of the stomach. It is a book in which the newer problems in gastric physiology and pathology are succinctly, yet well and understandably, elucidated. The author wisely conserves space by omitting the consideration of historic questions or theoretic discussions having no direct connection with treatment.

A special chapter is incorporated in the work expounding the latest discoveries on the physiology of digestion. A chapter on the examination of stomach contents includes the test which will greatly assist the practitioner in making his diagnosis and arriving at a judicious plan of treatment. The author discusses surgical treatment only insofar as to give indications for surgical intervention. The author, realizing that a large number of gastric disorders are classed as neuroses, emphasizes this phase of the general subject, giving it priority in position, and discusses same under various subdivisions, viz: As Neuroses resulting in sensory disturbances, those responsible for motor disturbances, and those to which derangement of the secretory function may be traced.

This present work includes full information on the Diagnosis and Treatment of gastric disorders. The work is conveniently arranged into twenty-three chapters and contains forty-two etchings and twenty-one full page plates.

Individual diseases are given due consideration, and here again considerable space is given to the neuroses and additional conditions, including gastritis.

The work is completed by a chapter on gastric ulcer, hemorrhages, syphilis, tuberculosis, carcinoma and other tumors.

The work is highly commended for its unusually clear and practical presentation of the subject.


All are agreed as to the value of the nurses’ work in the school, in the factory, in the social part of dispensary work, milk stations and in general preventive work. In all these activities a fundamental knowledge of the principles of hygiene and public health is necessary for intelligent work and usefulness. This work is an attempt to give the nurse a working knowledge of the elements of hygiene in all its varied branches.

All medical men have for years realized the great possibilities of hygiene and preventive medicine, and though much good has everywhere been accomplished by the institution of hygienic measures, a great deal remains to be done, and this must be largely achieved through the education of the public. In the attainment of this end, no factor is as important as the nurse. Every day she has opportunities to impress upon the laity some of the principles of hygiene and their practical application, and it is therefore one of the most essen-
tial elements of her training that she should be well informed on a subject of such universal importance. This new work from the pen of Dr. Price is admirably suited to the needs of the nurse in the discharge of her professional duties and its simplicity of diction renders it equally valuable for home use. It is a work to be recommended to all persons interested in the prevention of the spread of disease.

**Diet Lists of the Presbyterian Hospital.—** Compiled, with notes, by Herbert S. Carter, M. D., Assistant Visiting Physician to the Presbyterian Hospital, Associate in Medicine at Columbia University, etc. 12mo of 129 pages. Philadelphia and London: W. B. Saunders Company, 1913. Cloth, $1.00 net.

The diet lists contained in this booklet were prepared for use in the Presbyterian Hospital, New York City. The comments of the different diets being supplemented by the author. The aim of the compiler is to show the rational menu in the quantity of protein recommended allowing a sufficient margin of safety and still be within reason or below the standard of supposed protein requirements. The compiler delineates menus required for men and women patients on purin free, low calcium and salt free diets. This volume is a very handy one, at the same time very valuable to physicians, and we beg pleasure in commending it.

**Malaria.** Etiology Pathology, Diagnosis, Prophylaxis, and Treatment. By Graham E. Henson, M. D., member American Medical Association, Florida Medical Association, Southern Medical Association, American Society of Tropical Medicine, Medical Reserve Corps, United States Army (Non-active List). With an introduction by Charles C. Bass, M. D., Professor of Experimental Medicine, Medical Department Tulane University, New Orleans. Twenty-seven illustrations. Price, $2.50. C. V. Mosby Co. St. Louis, 1913.

The author of this work presents the subject in a clear, concise manner, and lays stress on etiology, pathology, diagnosis, prophylaxis and treatment.

The fact that the author lives in a malarial country should place him in a position to speak authoritatively on this subject. And there is little doubt that the eradication of malaria is one of the most serious problems that confronts the physician, sanitarian and philanthropist in all tropical and subtropical countries.

There is no disease, perhaps, which is more easily diagnosed than malaria, and, on the other hand, there is no disease that responds so surely to treatment when proper attention is paid to diagnosis and the proper treatment prescribed, for it must be remembered that quinine and its derivatives is a specific in this malady, provided treatment is instituted at the proper time and along proper lines. The author of this work has carefully reviewed the literature on the subject and has quoted extensively from the greatest authorities both in this country and abroad, giving due credit to the original author. The work is very well illustrated and is welcomed as an addition to the literature on the subject.
PEDIATRICS

VOL. XXV OCTOBER, 1913 No. 10

EDITORIAL

EUGENICS VERSUS THE MODERN VULGAR DANCE

The Texas Medical Journal recently commented editorially on the modern dance and the sentiments expressed so closely coincide with the views of the Editor of Pediatrics on this question that we cannot refrain from alluding to the subject.

In all ages and among all races and civilizations dancing has been, and is now intimately related to the sexual life. The psychology of this is not hard to find. Rhythmical movements is a stimulant to tumescence, which, uncontrolled, excites the sexual feeling. With many tribes dancing is the mere prelude to sexual indulgence, and every civilization of the past was sullied by the licentiousness and wanton abandonment of the dance.

Within the influence of modern history polite society has sought to hide the motive that inspires the dance, and to see in its rhythm and cadence the opportunity to regulate physical energy. It is a means of escape to pent up passions. Perhaps, unconsciously indulged in by many, may be regarded as a refinement in the conduct of social entertainments. That sexual impulse is the true motive of the dance is attested by the favor with which the "ragtime" variety is received in preference over the stately and genteel minuet type. The swing and action (not rhythm and cadence) of the "ragtime" affords just the stimulus desired, and the opportunity is taken to indulge the feelings with as much show to decency as possible. In the name of polite society this is permitted as being in good form. But if such preference is encouraged how long will it be before this thin veneer of deception is punctured and the true motive revealed? May we not ask as the next step, is there not imperative danger of the old debauchery and orgies of the past being re-enacted?
The highest moral type is the basis of Eugenics, so the upholding of the moral standard is the concern of this new religion. Therefore, Eugenics appeals to the parenthood of the country, to the leaders of society and the influences that control to stay the hand of this veritable vampire, ere it blights forever the "spark of life" that must be held inviolate if future generations are to exist.

EHRlich's Hypothesis in Regard to Immunity

That a specific antitoxin will in some manner neutralize the toxin of a given infectious disease has been pretty generally recognized as established.

That blood serum of animals infected with certain diseases will cause destruction or agglutination of the specific organisms of those diseases is also well known. To explain these phenomena and bring them under general laws Ehrlich announced his ingenious hypothesis which has been received with general enthusiasm, some even likening it to the periodic law of Mendelejeff as a working hypothesis. The logic of Ehrlich is certainly open to objection as almost everything is assumed from beginning to end. The first portion of the law can well be criticized as lacking that well known logical basis known as vera causa, in that he assumes for too much in regard to the structure of the protoplasmic molecule about which little is known. His views are ingenious however in pointing out quite conceivable ways in which immunity is produced.

To explain the nature of antitoxin he considers the protoplasmic molecule to be composed of a closed chain with side chains many of which are only partially satisfied, and that it is only through some of these unsatisfied side chains that various food substances and other chemical compounds can be brought in relation with the protoplasm. Now the toxin molecule becomes united with some one of these unsatisfied side chains and in this manner acts upon the protoplasm. Unless there exist side chains capable of combining with a given substance, that substance is non-toxic for the protoplasm of that species of animal. In this way he would explain why certain plants are poisonous for one species of animal and can be eaten with impunity by another.

Now when gradually increasing doses of toxin are administered to a susceptible animal, at first a certain number of side chains will be satisfied, and the protoplasmic molecule
will be in a manner affected. The functions of the cell of which the protoplasmic molecule forms a part will be altered but the cell need not necessarily be destroyed. On the contrary it may be stimulated to endeavor to replace the now saturated side chains. The cell having thus acquired a tendency to produce a particular variety of side chain furnishes more than are required by the protoplasmic molecule. The superfluous ones are cast off and circulate in the blood as antitoxin.

This hypothesis would explain the difference between active and passive immunity. Active immunity is that form resulting from stimulation of the cells of an animal to produce side chains, while passive immunity is that form produced by the introduction of side chains formed in another animal. This also explains why active immunity is of longer duration than passive, as the former lasts so long as the production of side chains continues; whereas the latter lasts only until the antitoxin which has been administered is eliminated.

**AGGLUTINATION AND CYTOLYSIS**

This portion of the hypothesis is somewhat more difficult of comprehension. Something is needed to account for the agglutination or destruction of bacteria which is known to occur. This other factor has been called an alexin. Some light is thrown upon this phenomenon by observing the action of the sera of certain animals upon red blood corpuscles under different conditions.

The serum of an animal which normally does not possess agglutinative or cytolytic powers may by frequent injections of the blood of another animal be made to acquire these powers over that particular blood. If cytolytic goat serum be heated to 40° C it loses its cytolytic power, now this power is immediately restored by the addition of a minute quantity of serum of a normal goat. There must then be two substances, one in the nature of an enzyme which exists in normal serum and is destroyed at 40° C, and another which is termed by Ehrlich the immune body and is unaffected by this temperature. This immune body is never present in the normal individual and is developed only during infection. This immune or intermediate body serves to attach the ferment or endbody to the bacterial cell and so bring about the destruction or agglutination of the latter.
A NOTE ON THE ADMINISTRATIVE CONTROL OF THE MILK SUPPLY FROM THE POINT OF VIEW OF THE CITY MEDICAL OFFICERS OF HEALTH TOGETHER WITH A NOTE ON A RECENT METHOD OF STERILIZATION*

BY E. W. HOPE, M.D., D.Sc.

Medical Officers of Health for the City and Port of Liverpool, Professor of Public Health, University of Liverpool, President of the Society of Medical Officers of Health.

I am honored with a request to deal with some of the considerations which specially affect the subject of the administrative control of the milk supply, from the point of view of the City Medical Officer.

The subject is a very wide one, but in view of the part which other speakers are taking in this Conference, I am giving a strict limitation to my observations.

In the first place, the City Medical Officer, in common no doubt with all medical officers, realizes the advantages of an abundant use of good pure milk, at a cost within the reach of all classes. The fulfilment of this need implies that the pure product of a healthy animal shall, in every detail, be so protected from contamination, at its source by cleanliness in milking, in transport, in storage, in the depot and the shop, during domestic delivery and after domestic delivery, that no precautions shall be neglected to ensure its use while sweet, and fresh, and clean.

Although large numbers of cows are kept in the great cities, yet, generally speaking, they do not supply more than one half of the needs of the population. The other half is supplied from the country. In a city like Liverpool, for instance, there are approximately 6,000 cows, which supply upwards of 17,000 gallons of milk a day, but the daily consumption of milk amounts to 35,000 gallons per day, or a little more than 7 oz. of milk every day per head of the popu-

lation. Consequently, a little more than 50 per cent. of the milk consumed comes from the country, and, therefore, in ensuring the purity of the source of the milk supply, the City Medical Officer has as vital an interest in regard to the milk coming from the country as he has in the milk coming from the city.

As the result of systematic bacteriological investigation, it was found, a number of years ago, that a larger portion of tuberculous contamination was found in milk sent into the city from the country districts than was the case with milk supplied from the city cowsheds. This, naturally, was a matter of very grave concern, especially when it was ascertained that many rural districts had taken no steps to control or supervise the milk trade carried on in those areas; they had not even made by-laws for the purpose, and many that had gone the length of making by-laws had stopped there, and had never, at any time, taken any step to ensure that those by-laws were given effect to.

As is the case with human beings, so it is with animals kept in confinement in close, ill-ventilated places, the disease with which we are all familiar, viz., tuberculosis, is prevalent, and a tuberculous cow means tuberculous milk; it was soon found, as one might have expected, that the tuberculous milk came from those rural cowsheds which were without ventilation, without light, without drainage, and from cows which were dirty and neglected.

In order to protect themselves from conditions such as these, many of the great centres of population obtained special powers, under which, among other things, their medical officers, veterinary surgeons, or other duly appointed representatives, were authorized to visit and inspect the cows and cowsheds on any farm outside the city boundary from which tubercular milk was supplied to the city, and, furthermore, to make an order prohibiting the sending of milk from such places into the city, until such time as the premises had been improved, and the sources of contamination dealt with to their satisfaction. These powers worked well, the action of the city authorities led owners and cowkeepers to put their premises into proper order, and to pay stricter attention to the health and cleanliness of the cows, and to the conditions of those who milked them. In this way the whole of the country was
benefited by the action taken by the cities at the cost and charges of the city rate payers.

Strangely enough, the counties very rarely took any initiative in the matter, or themselves sought any powers by which they could control the recalcitrant rural authorities; in fact they displayed no interest. There have been cases where, rather than incur the expense of improvements, the diseased milk has been diverted to centres where the supervision was less strict, hence the necessity for some such legislation as which would give greater powers and responsibilities to County Councils. It would, I think, be well, at all events pending a sufficient time for the County Councils to become familiar with the extent of the proposed new duties, that the powers at present held by the cities should not be taken from is proposed by the Milk Bill, recently before Parliament, them. Finally, in this connection I may point out that in contracts for the supply of milk to Liverpool Municipal Institutions, there are clauses inserted which require that the milk shall be pure and genuine, delivered within four hours of milking, from cows which have passed the inspection of officers of the Corporation, that the premises shall be open to visits from the Corporation officials, and, in addition, that the contractor himself shall periodically visit the farms from which the milk comes, and furnish the medical officer with a veterinary certificate as to the health of the cattle, and fitness of the premises.

It seems hardly necessary to mention that the facilities for keeping cows in a healthy condition in the town are less favourable than those for keeping cows in the country. Obviously, the fresh, sweet open country, the easier grazing, the lower rents, the purer air, all of which tend to maintain the necessary health of the animals, militate strongly in favor of the country, and the city cowkeeper is to this extent handicapped in the competition.

The City Medical Officer of Health, however, has found the city cowkeeper fully alive to the position; briefly, the city cowkeeper fifteen or twenty years ago commenced to put his house in thorough order, and from then onwards has done his best to maintain a high standard in regard to structure, lighting, ventilating, water supply, and cleanliness of administration, into the details of which I will not enter.

Assuming the healthy animal, and clean surroundings at
the source, the milk comes through many vicissitudes on its way to the consumer’s table. First the milking takes place into a pail, from the pail it is transferred to a strainer, from the strainer to a cooler, from the cooler to the tankard in which it is conveyed to the consumer’s door, from the tankard, by means of a measure, to the hand-can, from the hand-can to the jug or basin, and from thence, possibly after transference to another domestic utensil, to the consumer’s table. In other words, an article which is particularly liable to bacteriological and other contamination, is handled at least six times on its way to the consumer, a method of distribution, it will be seen, infinitely inferior to that of water.

The importance of purity is accentuated by the fact of the use of the milk by invalids, by children, and especially by infants, to whom it is given as a substitute for mother’s milk, frequently in times past with consequences the disastrous character of which is familiar to everybody. It is no more a part of nature’s economy for infants to be reared by cows, than, as in the case of Romulus and Remus, that they should be reared by wolves. The food which nature designed for human infants essentially different to cow’s milk, but, in addition, it must be remembered that it is never once exposed to the air, it passes directly, at the time of manufacture in the gland, to the infant’s stomach; its composition, temperature and mixture adapt it to the needs of the infant; it has neither abstractions, adulterations, preservatives, nor uncleanness, and it is bacteriologically clean and pure.

Depots have been established in Liverpool for the supply, for infants whose mothers are not able to suckle them, of the nearest approach to human milk. Over 20,000 infants have been fed from these depots, the cost of which has been largely in excess of the amount paid for milk. While cost is a secondary consideration where human life is concerned, it is obviously right to lessen cost wherever that can be done consistently with the attainment of the object in view.

In conclusion, I may mention that a large number of careful experiments have been made during the last two years, with a view, if possible, to lessen the cost of sterilization, and careful researches have been carried out at the University of Liverpool by Professor Beattie and others upon the electrical sterilization of milk in flow.

The upshot of these investigations shows that by electri-
cal methods milk can be effectually sterilized, all extraneous organisms being destroyed. No change whatever takes place in the milk, the flavour, taste, chemical composition, and so forth being absolutely the same as in pure fresh milk. The process is very much cheaper than the ordinary pasteurization by heat. Various pathogenic organisms have been experimented upon with perfectly satisfactory results.

The Corporation have authorized the installation of a plant at one of their depots for this process, which has now quite passed any experimental stage, and which has, I believe, a very valuable future before it.

CONSIDERATION OF THE ECONOMIC USES OF DRIED MILKS AND PATENT FOODS IN INFANT FEEDING*

BY ERIC PRITCHARD, M.D.
London, England

The entire history of dried milk covers a period of little more than ten years. Its application in infant feeding dates from the year 1905.¹ My own experiences began in April, 1908, when I commenced to use dried milk in the feeding of normal infants attending at my infant consultations in Marylebone.

The best known variety of desiccated milk, and the one I first employed in Marylebone, is prepared by the Just-Hatmaker process. By this process the milk is rapidly dried on the surface of revolving cylinders heated to a temperature of 130° to 145° C., and subsequently pulverized. Some manufacturers add glucose, bicarbonate of sodium, chalk, phosphate of sodium, or other chemical bodies, to increase the solubility of the finished product. By these manipulations the physical and chemical properties of the milk are profoundly altered. The whey albumens are coagulated and the caseinogen is so modified that its coagulum takes the form of a flocculent clot not unlike that of breast milk; the fat is partly thrown out of emulsion and floats in large droplets on the surface of the reconstituted milk. When allowed to stand the latter further separates into layers which can be distinguished by their colour and physical appearance. This, no doubt, is due to a change in the colloidal properties of the milk consequent on the absence of soluble whey proteins. Dried milk

¹Professor P. Budin, in Paris.
of this kind dissolves well in hot, but imperfectly in cold water. The net result of these changes is that the reconstituted milk is more digestible than natural cow's milk, a property which makes it valuable in the feeding of delicate infants, but carries with it the disadvantage that it inadequately develops the gastric functions. Although, as regards nutrition, the general results are good, I am inclined to think that infants fed continuously on this milk do not show the same vigour and vitality which are shown by infants supplied with natural milk, or with a dried milk which approximates more closely to the raw product. Although cases of scurvy have not been reported by others who have had use of this variety of dried milk, I have myself seen cases which, on the principle that "Naturam morborum curationes ostendunt," must be regarded as mild examples of the disease.

A second variety of dried milk is desiccated by a somewhat similar process, but at a lower temperature, i.e., 90° to 94° C. In this case the milk is first concentrated in vacuo. The milk produced by this method stands, as regards solubility and digestibility, midway between the afore-mentioned milk and the variety I am about to describe.

The third and newest kind of desiccated milk is manufactured by the Bevenot-de-Neveu process, a process which, in my opinion, is calculated to place the whole question of dried milks on quite a new footing. Bevenot-de-Neveu milk when reconstituted with its appropriate proportion of water is almost indistinguishable from natural milk. The process requires that the raw milk after concentration in vacuo at a low temperature should be forced at high pressure (150 atmospheres) through exceedingly fine perforations in a metal disc. The resulting spray of nebulized milk is then surrounded by an envelope of hot air and carried across a drying chamber in which it is almost instantaneously desiccated. The solid constituents of the milk fall as a snow-like powder to the bottom of the chamber, and the water is carried off in a cloud of vapour. By this process milk can be dried at quite a low temperature. The particular variety of milk I am now using is desiccated at 70° C., and in it the whey albumens are not coagulated nor the caseinogen in any way altered. On standing, the cream slowly rises to the surface as in natural milk, and the clot formed by rennet is the same as that afforded by raw milk. Further, the enzymes are not destroyed, and the so-
called vital principles (vitamines) have been isolated from commercial samples of the milk.¹

From the above descriptions it will be readily understood that all desiccated milks must not be classed together. As far as infant feeding is concerned, one variety of milk may be quite suitable in certain cases though quite unsuitable in others. so that different milks cannot be interchanged without incurring risks. For instance, delicate babies with enfeebled powers of digestion may thrive well on milk No. 1, and fare extremely badly when given milk No. 3. While strong and vigorous infants, in my experience, flourish better on milk No. 3 than on milk No. 1, I invariably make an effort to develop the functions of digestion up to a point at which there is tolerance of the less digestible variety. This I generally succeed in accomplishing by a gradual substitution of milk No. 3 for milk No. 1, or perhaps more satisfactorily after first feeding the infant on dried whey, also prepared by the Bevenot-de-Neveu process—and similiar in all respects to freshly prepared whey—by gradually introducing the dried milk into the whey solution.

Dried milks prepared by any of the above mentioned processes are usually supplied in three qualities, which differ considerably in price: (1) Full cream; (2) half cream; (3) separated milk. Some manufacturers supply yet a fourth variety, which is modified to standard which is supposed to be suitable for the feeding of infants. Although it is well within the range of possiblility to desiccate milk which has been previously modified to the human or any other required standard, no milk fulfilling the required conditions of infant feeding has, up to the present, come under my notice.

From the point of view of purity and freedom from bacterial contamination, desiccated milk is superior to ordinary dairy milk. In the first place, a good dried milk can only be prepared from an initially good raw milk. In the second place, after the milk has been packed in hermetically sealed tins it is liable to no subsequent contamination. Dairy milk, on the other hand, continues to deteriorate from the moment of milking to the moment of consumption. Milk can be desiccated and sealed up within three or four hours after it has

¹Dr. Jane Lane Clayton: Report to Local Government Board on Biological Properties of Milk, 1913, p 83.
left the udder of the cow. Although, theoretically, it is possible to produce a germ-free dried milk—as a matter of fact an average sample contains between 4,000 and 10,000 germs per grammere weight—when reconstituted with water the bacterial content amounts to 400 to 1,000 living germs per cubic centimetre as compared with 6,000, to 100,000 in the best samples of dairy milk. A more important feature is that among the germs present there are no tubercle bacilli or other pathogenic varies. From the point of view of summer diarrhoea this is of paramount importance. During the fatal summer of 1911, among all the babies attending at my clinics fed on dried milk, I had no deaths from diarrhoea, and such cases as occurred were of the mildest possible type.

Economic Advantages.—When compared with the cost of dairy milk, reconstituted dried milk has no advantages, the cost of the two varieties are practically the same, i.e., 4d. per quart. There is, however, this to be said in favor of dried milk, that there need be no waste.

In the following table I have calculated the actual cost of feeding infants on different classes of food, these classes include two proprietary foods, three grades of dried milk, modified cow's milk, and a combination of separated dried milk with an emulsion of linseed oil (Marylebone cream,) and sugar.

As the basis for my calculations I have assumed that the infant is 3 months of age, weighs 10 lb., and is normal in all other respects. I have further assumed that for every pound of bodyweight such an infant will require sufficient food to produce 40 calories in the twenty-four hours, or 400 calories in all—possibly a low estimate. I have calculated in each case the amount of food which will produce this number of calories and the actual price that must be paid for these quantities.

An examination of the above table shows that the most expensive foods are whey and proprietary foods No. 2. To feed a baby for one week on these foods costs 4s. 11½d. and 4s. 8d. respectively. The same baby may be fed on full cream desiccated milk for 1s. 10¾d. per week, or cow's milk modified to the standard of human milk for 2s. 0½d., or on separated dried milk modified to the human standard with added Marylebone cream and loaf sugar for 1s. 2d. These costs are based on retail prices, but if the same foods are bought in bulk, as
hospitals and other institutions are in a position to do, the economical advantage of separated dried milk over other methods of feeding is still more stokingly borne out. The cost to institutions of feeding a baby on separated milk supplemented with Marylebone cream and sugar is 8 3/4d. a week, whereas to feed it on fresh cow's milk modified to the human standard approximately costs 1s. 9d.

**TABLE A.—** To show Daily and Weekly Cost of Feeding Infants on various Classes of Food.

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<td>Proprietary infant food, No. 2 (3 1/4 oz. -92 grm.)</td>
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<td>Dried whey (3 3/4 oz.-108 grm.)</td>
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<td>Modified cow's milk (milk, cream and milk sugar)</td>
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<td>Separated dried milk with added Marylebone cream and loaf sugar (1 1/2 oz., 1 oz. 3 drm. respectively)</td>
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In columns A and B the cost is estimated on retail prices; in columns C and D on the cost to institutions buying in bulk.

Calorie for calorie, separated dried milk is the cheapest food which can be purchased, but of course, it is quite unsuitable for infant feeding unless it is fortified with additional fat to replace the cream which has been abstracted. The cheapest fat that can be employed for this purpose is linseed oil; linseed oil can be made into a most palatable emulsion and sold at 3s. 8d. per gallon,¹ a price which compares with 16s. per gallon for cream containing the same percentage of fat.

As far as I am aware the nutritive qualities of an emulsion of linseed oil (Marlebone cream) are in no respect inferior to those of cream, although their constituent fats are not identical.

For some time past I have experimented with this method of feeding, and I find that infants fed on separated milk reconstituted with water and fortified with Marylebone cream and sugar make just as good progress as do infants fed either

¹Sold by The British Drug Houses under the name of Marylebone Cream at 3s. 8d. per gallon.
on whole cream, desiccated milk, or other more expensive foods.

Although it is of importance that infants should be supplied with a food which affords a sufficient number of calories per pound of bodyweight, it is by no means a matter of indifference how the calories are afforded.

There is an optima ratio for the three main elements of an infant’s dietary. I think it safe to conclude that in breast milk these elements are combined in a ratio which conforms to the physiological requirements of the average infant. In breast milk the percentage composition is 1:5 per cent., fats 4 per cent., sugars (carbohydrate) 6:5 per cent. These proportions are not observed by any of the desiccated foods with which I am familiar, as may be observed by an examination of the following table. For the sake of comparison I give the percentage composition of desiccated breast milk, which I take as the standard, and beneath them I arrange in series the composition of the various desiccated foods above referred to.

**TABLE B.—Percentage Composition of Proprietary Infant Foods and Dried Milks.**

<table>
<thead>
<tr>
<th>Protein</th>
<th>Fat</th>
<th>Sugar</th>
<th>Ash</th>
<th>Water</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approximate standard required in a desiccated food for average infant, i.e., desiccated breast milk.</td>
<td>:</td>
<td>:</td>
<td>:</td>
<td>:</td>
</tr>
<tr>
<td>Proprietary infant food, No. 1</td>
<td>12:50</td>
<td>27:5</td>
<td>56:0</td>
<td>2:0</td>
</tr>
<tr>
<td>&quot; &quot; &quot; No. 2</td>
<td>16:35</td>
<td>8:78</td>
<td>69:95</td>
<td>3:86</td>
</tr>
<tr>
<td>Dried milk modified for infant use</td>
<td>21:33</td>
<td>14:51</td>
<td>55:23</td>
<td>7:48</td>
</tr>
<tr>
<td>Full fat dried milk</td>
<td>26:44</td>
<td>28:0</td>
<td>38:92</td>
<td>5:87</td>
</tr>
<tr>
<td>Half fat dried milk</td>
<td>33:3</td>
<td>15:1</td>
<td>39:7</td>
<td>6:9</td>
</tr>
<tr>
<td>Separated dried milk</td>
<td>33:9</td>
<td>1:0</td>
<td>55:0</td>
<td>8:2</td>
</tr>
<tr>
<td>Dried whey</td>
<td>14:25</td>
<td>0:27</td>
<td>74:45</td>
<td>9:8</td>
</tr>
</tbody>
</table>

Dried milks cannot be employed to the best advantage without modification, any more than cow’s milk can be so employed. They all contain too much protein and not enough sugar. To enable them to conform to the required standard they must be reconstituted with more than their original proportion of water and must be supplemented with added sugar and cream.

To emphasize how inappropriate these foods are without modification I give in the following table (C) the percentage composition of all the foods referred to above when they are diluted with the amount of water required for twenty-four hours.
If these diluted foods are compared with breast milk it will be noticed that all the dried milks contain an excess of protein and a deficiency of fat and sugar. The proprietary foods contain too much sugar and too little fat. The percentage composition of the mixture prepared from separated milk, Marylebone cream and sugar also departs from the standard of breast milk, but without any increase of cost it can be made to conform to any required standard by varying the proportions of the components. I find from experience that 4 per cent. of fat is too high for the majority of infants, and 1:5 per cent. of protein is needlessly low. With a mixture of the above percentage composition I get most excellent results, 20 oz. of such a mixture provides 400 calories, enough for an infant 3 months of age, weighing 10 lb.

The formula for preparing 20 oz. of this mixture is as follows:

<table>
<thead>
<tr>
<th>Separated dried milk</th>
<th>Marylebone cream</th>
<th>Sugar</th>
<th>Water</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 1/2 oz.</td>
<td>1 oz.</td>
<td>1/2 oz.</td>
<td>to 1 pint.</td>
</tr>
</tbody>
</table>

Such a mixture is not suitable for all infants, but it is the goal at which we should aim, and by the careful training of the digestive functions by a preliminary course of modified whey mixtures it is a goal which it is very easy to reach.

CONCLUSIONS

(1) Different varieties of dried milk have different properties and are suitable for different classes of cases.

(2) Dried milks are free from pathogenic germs, and consequently safer than natural milk.

(3) The cost of reconstituted dried milk is the same as dairy milk, but if separated dried milk is used and fortified with a cheap substitute fat (Marylebone cream), the food

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**TABLE C.—Percentage Composition of Proprietary Infant Foods and Dried Milks when diluted with 20 oz. of Water: 20 oz. of each Provides 400 Calories.**

<table>
<thead>
<tr>
<th></th>
<th>Protein</th>
<th>Fat</th>
<th>Sugar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breast milk</td>
<td>1:5</td>
<td>2:7</td>
<td>9:25</td>
</tr>
<tr>
<td>Proprietary infant food, No. 1</td>
<td>1:3</td>
<td>2:7</td>
<td>9:2</td>
</tr>
<tr>
<td>Dried milk modified for infant use</td>
<td>2:6</td>
<td>1:3</td>
<td>14:5</td>
</tr>
<tr>
<td>Full fat dried milk</td>
<td>3:3</td>
<td>2:2</td>
<td>8:5</td>
</tr>
<tr>
<td>Half fat dried milk</td>
<td>3:6</td>
<td>3:5</td>
<td>5:0</td>
</tr>
<tr>
<td>Separated dried milk</td>
<td>4:8</td>
<td>2:2</td>
<td>5:8</td>
</tr>
<tr>
<td>Separated dried milk with added</td>
<td>5:8</td>
<td>0:16</td>
<td>9:4</td>
</tr>
<tr>
<td>Marylebone cream and loaf sugar</td>
<td>:</td>
<td>:</td>
<td>:</td>
</tr>
</tbody>
</table>
thus constituted is the cheapest that can be employed and the results are excellent.

(4) Proprietary foods are expensive and do not accurately conform to the standard of breast milk.

(5) To obtain the best results with dried milks they must be modified to the required standard—a standard which differs in the case of different infants. This is easily accomplished by varying the dilution and adding varying proportions of additional fat and sugar.

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THE PREVENTION OF INFANT MORTALITY

BY JAMES GRAY, M.D.

Secretary of the State Children's Council of South Australia

The State Children's Council of South Australia has directed that some information on the above subject shall be sent to the assembly gathering in London to discuss this topic.

This Council and its officers are much occupied with the work of preventing the death of infants who but for the Council's efforts would certainly die before a year old, and in endeavouring to bring such children up to maturity in such a degree of health, bodily, mental and moral, as shall make them useful people.

Since the State Children's Council took over the care of 666 children on January 1, 1887, the death rate has been very low. The children were of all ages, wards of the State, and placed in most instances in the homes of various persons all over the country.

The following table goes to show that children placed in homes with adequate inspection are to a considerable degree protected as compared with those who are either in institutions or in uninspected homes, for it is to be noticed that during the last two or three years of the above record there was a difficulty in finding homes for infants, and an immediate rise in the death-rate followed consequently on their compulsory detention in institutions, although these were managed by the Council with every care.

<table>
<thead>
<tr>
<th>Of all ages to 18 years</th>
<th>Death Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>In 1887 out of 666 children</td>
<td>(1) died.</td>
</tr>
<tr>
<td>1888 ' ' 800 '' (7) 6 ''</td>
<td></td>
</tr>
<tr>
<td>1889 ' ' 855 '' (4) 4 ''</td>
<td></td>
</tr>
<tr>
<td>1890 ' ' 867 '' (6) 6 ''</td>
<td></td>
</tr>
</tbody>
</table>

There is, however, a yet more striking record in this case as in the above; the figures for the early years are not so complete as one would now wish; they are appended.

On January 1, 1896, the Council took charge of those called "licensed foster-mothers," when sixty-eight women had charge (during the year) of ninety-six infants, eighty of whom were illegitimate; fifteen died or 15.6 per cent.

In 1897 there were 115 women, 148 infants, of whom 28 died, 18.9 P. C.

In 1910 there were 477 women, 527 infants, of whom 14 died, 2.6%.

It will be seen that although there is an average of more than one in a family that the numbers in one home are small, and usually only one child in one home. Some of those nursing the children are single women of unblemished reputation, and some are widows, but many are married women with families of their own, whose hearts are large enough to admit the strangers' child and to let it share in the love of the home; such women are the most successful nurses.
The great increase in numbers in 1910-11-12 was caused by the Legislature of South Australia laying upon this Department in 1910, the duty of supervising all illegitimate children under 7 years, no matter with whom they might be living, and any children illegitimate or legitimate who might be in the care of persons not their parents whether for gain or reward or not. It will be seen that the death-rate is still low, and when it is remembered that before this action was taken it was shown that the death-rate of unsupervised illegitimate children was 45 per cent., against from 4 per cent. to 5 per cent. of those supervised, the lowness of the present rate is marked, and has been secured by increased inspection and care.

It is further to be borne in mind that as yet the system is scarcely fairly at work: the time of the officers has been much occupied hitherto in finding children who were neglected, and in endeavouring to improve the homes in which they were found. So far no prosecutions for disregard of instructions have become necessary, but it is to be feared that as parents become accustomed to the system, the first shock of discovery, and the first impulse to improvement lose their force, such prosecutions will become necessary. The Act gives the Department considerable power, but experience teaches that it is not wise to use power with any degree of harshness. As flagrant cases of disregard of instructions arise, legal proceedings will have to be taken. In the appendices here to will be found the regulations, the feeding instructions, &c., which are the ground of the work undertaken in connection with child saving by this Department.

One of the reasons for work along these lines is that it prevents to a great degree the need of relieving the mothers of their children, and the consequent building up of a large class of dependent or pauper children. It would seem that it must be for every reason a much better thing to enforce upon parents the duty of attending properly to their children, than to relieve them of that duty, for if anything can cause love for their offspring it is the doing of loving and kindly acts, and if the duty does not become a pleasure as it frequently does, then at least it is a duty done, and if at the point of the bayonet, still done, if considered as a penalty still a good thing. In order to make this part of the work as complete as possible, the Department traces the fathers as well as the mothers, and compels them to pay towards maintenance. The
law here has been so altered as to be considerably in advance of other places in this respect.

For example, no corroboration of the woman's testimony is required unless, and until, the defendant has on his oath denied her allegations and has been cross-examined. Anyone familiar with affiliation cases will see that such provision is a great alteration and improvement. Then the excuse that some other person of persons may be the child's father is robbed of its efficiency as a defence in as much as the other man, or men, are required to testify that they are possibly the father before the statement has any weight, and by so doing they render themselves jointly and severally liable to contribute towards all expenses without exonerating the man charged. There is also power to take action before the birth of the child, and to secure beforehand the confinement expenses, and an order for maintenance. These powers are exercised by this Department gratis on the application of any poor person, who through poverty or ignorance may be unable to themselves appeal to the law. These provisions are found of great assistance in the way of preventing the neglect, consequent disease, and death of infants.

All these things, however, fail to touch the real fundamental cause of the difficulty. What should really be aimed at is not only the cure of diseased infants, the saving of weaklings to grow up feeble and ailing, to be weak-minded, to be morally weak, to be all their lives a burden to their fellow creatures, but to secure for our nation a stream of healthy well-nurtured (before as well as after birth), beloved and valued infants who will grow up to become stalwart men and bonny women, long lived, robust in body and mind, virtuous, clean living, vigorous and partriotic. We want to do away with the kind of infant who is lowering the vitality of our community and making us nationally weak; and breed the kind who will make our nation strong, brave, self-reliant, clear-headed, kind-hearted, patient, and (shall it be said) "God like." To save infants of any kind at any cost may be politic, although there is much room for doubt, but to have infants who are worth saving is quite another matter, and one about which there can be no doubt. Can this be achieved? Not without effort; and effort that is not usually made, appreciated, or tasteful. It is comparatively easy to devise means to avert the evil that arises from our misdeeds, but to cease to do evil is another matter
and yet that is the way of deliverance. We may patch up the weakling, but he is still a weakling. But to become ourselves—brave, strong and virtuous, to ourselves be what we want our progeny to be; to teach the nation to be a self-denying, continent, free from sexual vices; to teach the rich to be ready to sacrifice personal ease and comfort, idleness and dissipation, in order to bring up larger families of goodly children, to teach the middle classes that to ape the rich and neglect their own health and their own families is folly as well as wickedness; to so deal with the poor and ignorant as to enable them to live and to bring up healthy children; to teach them how to see that they in their folly do not neglect their parental duties; to kindly and yet firmly do these things is hard, and yet it is the only really effective way of "preventing infant mortality."

It is all very well for a nation frightened at its own decay to say we will save the children, but no nation can or even hold its own by any means other than living the life that constitutes national honor, and leads to national prosperity. The beginning of this paper shows what is being done to stem the tide of decay in one corner of the Empire. What is being done is having some effect, but it is not making weaklings strong, although it no doubt saves many children who would otherwise die, and some of whom are worth saving. The last few sentences however, touch the real point. It remains to be seen if (as may it be) our nation shall rise to its privileges and with one voice declare "we will qualify ourselves to be the parents of children who will need only a fair chance to lead the world."

In conclusion, it may be well to say that in South Australia it has been found that the best preventions of infant mortality in the present circumstances are: Placing the children in homes, as far as possible one in each home. No institutional life for babies, especially when not in good health. Close supervision by qualified inspectors under an authority with ample power in order to enforce the best attainable treatment of the children by mothers and other relatives. Breast feeding where possible, and if not, feeding according to wise regulations. Supervision continued until seven years of age. Assistance for mothers to secure payment from the fathers.

This paper and appendices are sent in the hope that they may be of some slight use to the Conference.
By direction of the State Children’s Council of South Australia.

APPENDICES

(These may be consulted in The Conference Book Room)

“State Children’s Council Administration.”
“Feeding Regulations, &c., in connection with Licensed and Unlicensed Foster-mothers.”
“State Children in Australia: a History of Boarding out and its Developments,” by Catherine Helen Spence.

THE MEDICAL INSPECTION OF INFANTS AND CHILDREN UNDER AGE*

BY DAVID FORSYTH, M.D., D.Sc., F.R.C.P.
Physician to the Evelina Hospital for Sick Children; Physician to Out-patients, Charing Cross Hospital.

A significant fact bearing on the health of children, though hitherto hardly appreciated beside the more conspicuous facts relating to infant mortality, is now beginning to claim attention. I refer to the widespread physical deterioration that overtakes children during the first four or five years of life. This fact is well established by the medical inspection of elementary school children, the majority of whom prove to be physically unsound, most of their defects, moreover, being preventible. Clearly, therefore, it is to these earlier years before schooling begins that attention must be turned if this deterioration is to be averted. The conditions cannot be adequately met by postponing action until the children reach the minimum school age, by which time much suffering and not a little permanent damage will have been inflicted. What is needed is some from of medical supervision, together with facilities for remedial treatment, extending over the whole of the first lustrum.

But with this problem only now unfolding itself, little or nothing has been done as yet by way of a solution. True, there are infant consultations in many parts of the country, but these, owing their inception to the movement against infant mortality, are concerned only with infants under one year. Since, however, as will be seen below, it is not until the second year at earliest that the physical defects of the future school entrants

show themselves in any number, preventive measures limited to the first year are unlikely to have much influence in warding off these later troubles. In a word, a gap, at present unbridged, stretches from the first year, when the activities of the infant consultation come to an end, to the fifth, when the school medical inspection begins.

How, then, is the medical supervision of children under school age to be dealt with in present circumstances? Perhaps the most practical answer I can offer to this question is to submit for your consideration and discussion the plan adopted in this City of Westminster. Some two years ago the Westminster Health Society prepared a scheme for the medical supervision of these children, and in January, 1912 opened a Medical Inspection Centre for children under school age to serve the population in the north half of the City. The lines on which the Centre is conducted can be briefly summarized. With the co-operation of the Public Health Authorities, information is received of all births recorded under the Notification of Births Act, and, with the help of a staff of health visitors, the Society at once gets into touch with every family where a child is newly born. The mother, as soon as she is about again, is invited to the Centre with her baby, who, after being undressed and weighed, is medically examined. In most cases the child is found to be healthy, but, at the same time, the opportunity is taken to enquire closely into the conditions of its daily life, especially with regard to feeding, cleanliness and clothing; and the mother, if at fault in her methods, is advised or shown how to improve them. On few occasions when an infant is physically defective, and the condition is remediable, arrangements are made for suitable treatment either by a medical practitioner, or at a hospital or dispensary; in some cases convalescent treatment is secured by the help of other agencies; and in a few necessitous cases the supply of cow's milk is supplemented. Finally, each mother, before leaving after the first inspection, is invited to bring her child up again after an interval appropriate to the requirements of the case for the doctor to see that everything is going satisfactorily, while, if any special advice has been given, the health visitor to the case, by paying calls at the home, ensures that this is not forgotten.

In addition to these new-born infants, the Centre secures the attendance of older children up to five years, the same plan
being followed as before. In this way the attempt has been made from the outset to include the whole of the under-school-age population of the district. The essence of the scheme, however, is to keep every child under medical supervision from the time of its birth until the end of its fifth year, and then to hand it over, sound and healthy, to the school authorities together with the medical record of the material facts in its life for the information of the school doctor.

This brief sketch will indicate the main features of the Inspection Centre. It should be added, however, that, though the medical examination is held weekly, no inconsiderable amount of work arising out of the last inspection and in preparation for the next has to be undertaken during the intervals. In this the Centre has been fortunate in the assistance of a small band of regular helpers, including Lady Horner, Mrs. Raymond Asquith and Miss Horn, together with several members of the Society's staff of visitors.

The results of the first year's work\(^1\) are probably of sufficient interest to warrant their inclusion in this paper. Altogether, 374 children have been examined, excluding re-inspections. Of these, 131 were under one year, 77 under two years, 83, 50 and 33 under three, four five years respectively. The outstanding feature of an analysis of the medical record cards is the rapid rise in the tide of disease with each year of life. For, while the large majority of the children in the first period are found to be healthy, only a small minority come through to their fifth year without at least one physical defect of some kind or another. This is most strikingly seen in cases of dental caries, a condition which is, probably, responsible for more ill-health among children than any other. The increasing percentage of these cases in successive years is shown in the table below.\(^2\) It should further be added that, as a rule, the more advanced the age, the more extensive was the disease. A very similar rise is seen both with enlarged tonsils and with adenoids, while the proportion of these cases in urgent need of surgical operation increases yearly, indicating, of course, the

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\(^1\)At the conclusion of the current year the returns will be supplemented by those of a second Centre on similar lines, which has been opened in the south half of the City.

\(^2\)These figures lead up very well to the statement by the Chief Medical Officer to the Board of Education (Annual Report, 1910, p. 166), that "not more than a few children out of every hundred . . . . fall to bear evidence of past or present dental disease."
aggravation of the condition when left untreated. With rickets, on the other hand, the incidence reaches a maximum in the second year, thereafter rapidly declining; this disease therefore, so often the cause of lifelong deformity, has inflicted its damage long before school age.

Altogether, the 374 children presented 332 defects. In addition, the feeding in a large proportion of the cases in the earliest years required some modification, great or small, and in almost one-half the cases under one year needed revision in one way or another. The following table, showing the percentage of children affected in each year, summarizes the incidence of the more important defects:

<table>
<thead>
<tr>
<th></th>
<th>0 year</th>
<th>1 year</th>
<th>2 years</th>
<th>3 years</th>
<th>4 years</th>
</tr>
</thead>
</table>

The practical conclusion from the point of view of prevention and curative treatment hardly needs stating. Suffice it to say that there is no reason to suppose that the children examined at the Centre differ materially from other children of their class, at any rate in urban areas, and it is highly probable that, as similar Inspection Centres are organized elsewhere, the results will be, in the main, similar to those in Westminster. In other words, large numbers of children, healthy in all respects at birth, become, within five years, the physically defective entrants whom the Education Authority is required, at no small cost, to restore, so far as possible, to their original state of health. Yet most of these cases are preventible, or, if taken in time, can be remedied more speedily, and therefore more cheaply, than if left until school age; by which time not a few will have received permanent damage, physical or mental. The problem of the defective child largely resolves itself into the problem of the under school age child, and seems hardly likely to be solved by any scheme short of a national one ensuring to all children regular medical supervision from birth to school age. And this, to be fully successful, must run side by side with educational measures for instructing the mothers themselves who, from ignorance far more than from wilful neglect or even from indigence, are unable to safeguard their children’s health.
COLI INFECTION OF THE URINARY TRACT IN INFANCY AND CHILDHOOD*

HON. N. PERCY MARSH, M.B.,
(Lond.), M.R.C.S.,
Hon. Physician, Liverpool Infirmary for Children; Consulting Physician, The Children's Convalescent Home, West Kirby.

It is to Escherich of Vienna that we are indebted for having been the first to call our attention to the frequent occurrence of coli infection of the urinary tract in infants and young children. The publication of his monograph in 1894 was quickly followed by others from Fenkelstein, Goppert, and Trump, whose investigations confirmed his observations and led to the establishment and general recognition in children of the conditions known as coli-cystitis and coli-pyelitis. Many other organisms—staphylococci, streptococci, gonococci and the bacilli of diphtheria, typhoid and tuberculosis—may occasionally be the exciting cause. but, as Escherich pointed out, the bacillus coli is by far the most frequent, and in his own series of cases, 58 out of 60 were found to be due to this organism. His findings in this respect have been confirmed by later writers. Jeffries, in a recent publication, reports 121 cases, of which 67 were colon, 37 staphylococcic, 10 streptococcic, 3 pneumococcic, and 4 miscellaneous. Its occurrence among infants has been more recently emphasized by Thomson and other writers. At this early age it is extremely likely to be overlooked, owing to the difficulty of obtaining specimens of urine for examination; and, as a consequence, after a prolonged and wasting illness of many weeks' or months' duration, the cause of death is ultimately certified as being due to marasmus or tuberculosis.

The path by which the bacillus coli may gain an entry into the urinary tract has been the subject of keen controversy. Birk believes that a co-existing tuberculosis and the so-called exudative diathesis are predisposing factors, and Friedenwald has published 80 cases of which 59 had preceding gastro-intestinal disturbances.

The fact that from 90 to 95 per cent. of the cases occur in girls at once suggests that direct infection of the urethra by rectal contamination, with a consequent ascending infection, occurs in a preponderance of cases. The short urethra in the female and the baneful habit of wiping with the diaper from behind forwards, renders infection by this route easy. Box also has demonstrated the bacillus coli to be present in the urine of chil-

*Practitioner Lond.
children suffering from thread-worms, the ova themselves being found in the bladder. The ascending route, especially in girls, has received support from most writers; in boys, however, it is rare, but it has been noted by Morse to occur after circumcision. This mode of infection has been opposed on the ground that in many of the cases the pelvis of the kidney is alone affected, the bladder and ureter remaining healthy; but even in these cases it is possible that the organisms may ascend the lymphatics outside the ureter, or, as Leutscher has shown, they may ascend through the bladder and ureter without producing any inflammation in those channels.

A second route by which the organisms may gain an entry is by their direct passage from the bowel to the kidney, or from inflamed pelvic organs to the bladder or ureters. The right kidney, owing to its close relation with the colon, is especially liable to become infected in this manner. This route has been experimentally demonstrated by Wredin, and Franke has shown that in rabbits the ascending colon and caecum are connected with the right kidney by a chain of lymphatics, whereas none are found connecting with the left kidney. In order that infection may occur by this transparietal route, the intestinal epithelium must have been destroyed either by disease or by artificial means, so that the organisms may pass from its walls into the surrounding tissues and lymphatics. Escherich believed this mode of infection to be the rule in the rare cases in which boys are infected, and in the three cases which I have seen it followed acute ileocolitis, chronic tuberculous peritonitis with intestinal ulceration, and long-continued constipation respectively.

The third and last theory as to the method of infection is, that the organisms are carried by the blood-stream directly to the kidney, with a consequent descending infection. In 1889 Albarran, and in 1896 Macaigue, described a haemical infection of the kidneys with B. Coli causing a parenchymatous nephritis and multiple miliary abscesses. Posner and Lewin have proved experimentally the possibility of a haematogenous infection, but in children its occurrence must be considered rare, as examination of the blood by Escherich and Wunscheim was almost always negative. In such cases the organisms probably get into the blood-stream through a breach of surface of the alimentary canal, such as is frequently met with in acute inflammations of the intestine and in tuberculous ulceration.

Clinically, as a result of infection, we are able to recognize
four distinct conditions  Firstly, simple bacilluria, in which the urine is acid, clear or faintly opalescent, and may or may not have the characteristic fishy odor. On standing, a mucous cloud will form, in the meshes of which the baeilli will be found. Secondly, cystitis, in which the urine is acid and opalescent, and on microscopical examination it is found to contain numerous motile organisms and pus cells. The symptoms we should expect to find are increased frequency of micturition, dysuria, and a slight rise of temperature, but no severe constitutional disturbance. Thirdly, pyelitis, in which the constitutional disturbance is much greater, with often a high remittent type of temperature. The attack may be ushered in with shivering or rigor, and there are many pus cells and motile organisms in the urine. Lastly, we may have a pyelonephritis, in which the general symptoms are very severe; wasting is pronounced, and in addition to pus cells there are tube casts and albumen in the urine.

In the 23 cases upon which this paper is based, the protean character of the symptoms is one of the most striking features. In infancy the onset is usually sudden, but on careful inquiry there has been an increased frequency of micturition, with an offensive odor of the urine and possibly signs of irritation round the vulva and meatus. The onset of acute symptoms is often marked by shivering or a distinct rigor, after which the temperature rises rapidly to 104° or 105°. It then assumes a remittent type resembling enteric fever or acute general tuberculosis. This remittent character may be maintained for weeks, or there may be intervals in which the temperature is normal, alternating with severe relapses.

Shivering is a very important sign, and when present should always suggest the possibility of pyelitis, as it is exceedingly rarely met with in infancy except in this condition. The general disturbance and distress is considerable. The baby rapidly loses weight and in restless, very fretful, and tender to touch, Squint, head retraction, drowsiness, and vomiting may be present, producing a clinical picture closely simulating and difficult to diagnose from meningitis. Local symptoms—and here is one of the chief difficulties of diagnosis—may be absent altogether, or so slight as to escape recognition. There may be an increased frequency of micturition, with dysuria, occasional colicky pain, and in some cases tenderness on palpation over one or other loin, a sign exceedingly difficult to determine, owing to the infant's general fretfulness and sensitiveness.
The urine on inspection will be found to be opalescent or turbid, and when shaken it shows a mucous sheen. It has a peculiar and unpleasant fishy odor, an acid reaction, and on standing deposits a sediment consisting of pus and epithelial cells from the urinary tract. The turbidity is not removed by acids, nor does it disappear on boiling, and on microscopical examination there are seen, in addition to the pus and epithelial cells, large numbers of motile bacilli.

Thomson has noted that when the temperature first rises, pus is not always found in the urine, but it usually appears in a few days; further, it may disappear entirely for a day or two and then reappear, which Goppers suggests is due to only ureter being affected, and to its having been temporarily blocked while the other remains patent.

In three of my cases occurring in infants general oedema was a marked symptom, and, indeed in older children puffiness and swelling about the eyelids is not an uncommon sign. Alice M’K., aged 18 months, is a good example of this type. She was admitted to hospital on July 16, 1912, with a history of having been feverish, and drowsy and losing weight for three weeks. A week before admission the face, arms, and legs began to swell, but there were no local symptoms pointing to bladder trouble. She weighed 14 lbs. 13 ozs. and looked ill and wasted. The temperature was 100, pulse 126, and respirations 26, and there was considerable oedema of the face, trunk, and extremities. The urine was offensive, turbid, and acid. On centrifugation it contained no casts, but large number of pus cells and motile organisms. Cultures were made and a pure growth of B. Coli obtained.

Another case in which there was general oedema was that of Eliz. D., aged 8 months, but here the swelling had been noticed for two months before admission. There was, in addition, a history of wasting and the frequent passage of turbid and offensive urine. On admission she was pale and fretful, and in addition to general oedema there were patches of rhytæma on the trunk and limbs. The urine was turbid, contained a trace of albumen but no casts, and large numbers of pus cells and motile organisms were found which on culture proved to be B. Coli.

In older children the disease may be acute or chronic. In the former, either the constitutional or the local symptoms will predominate, depending on whether we are dealing with apyelitis or a cystitis. In the chronic type it is not unusual for the
local signs to be utterly insignificant, and the constitutional symptoms may also for a long period remain latent. Attacks in which the constitutional symptoms predominate commence, as in infancy, with shivering, restlessness, high fever, anorexia, headache, and vomiting. The skin is hot and dry, the pulse rapid, respirations increased, herpes may appear on the lips, the abdomen be slightly distended, and even the spleen enlarged. Nervous manifestations are sometimes marked, and produce a symptom-complex which may closely simulate cerebro-spinal meningitis. They take the form of extreme restlessness, irritability, deebitus in crouched-up attitude, head retraction, muscular twitchings, hypertonus, and delirium. The temperature may remain high, 103° to 105°, for several days and then abruptly terminate, or considerable oscillations of temperature may be present.

Acute infections in which local symptoms are present are much easier diagnosed. These patients as a rule suffer from increased frequency of micturition, dysuria, and incontinence; signs of inflammatory irritation are also often present round the meatus and vulva. Pain may be so severe as to cause the child to scream during micturition, there may be tenderness over the bladder or kidney and in some cases distinct enlargement of the kidney may be felt. In other cases, pain referred to the subcostal and epigastric regions may be complained of, and there may be slight rigidity of the abdominal muscles (Box).

Lastly, there are the chronic and persistent infections, which are occasionally seen in infants, but more frequently in older children. In these there is usually a persistent bacilluria, with but slight signs of inflammatory reaction of the bladder, ureter, or pelvis, and there is little or no constitutional disturbance. Nocturnal incontinence of urine is not infrequently met with, and in many girls in whom this troublesome condition has lasted for months or even years, a microscopical examination of the urine will show a colon infection to be the exciting cause.

Children suffering from this chronic variety are generally poorly nourished, anaemic, and flabby; they suffer from general malaise, and may have a slight elevation of temperature which persists over a long period. Shivering or rigors are rarely present, nor is there any complaint of local tenderness or pain. Periodical exacerbations are apt to occur, and may assume the form of bilious attacks, with persistent vomiting very similar to the cyclical vomiting of acetonaimia, or there may be joint pains with dullness and apathy closely simulating rheumatism. Box
COLI INSPECTION OF URINARY TRACT

has reported a chronic case which ultimately passed into a condition of uræmia. The post-mortem examination showed the right kidney shrunken and its pelvis dilated; the left kidney was swollen, mottled, coarsely granular, and partly hydrenephrotic. The ureters were dilated and thickened and the bladder hypertrophied, from chronic cystitis; there was no obstruction to the urinary passages.

In two of my cases skin eruptions were the most prominent manifestations. In one, Barbara B., aged 3½ years, there was a six months' history of frequent outbreaks of "spots" over the trunk and limbs, at intervals of a few weeks; some of these were urticarial in character, and others, especially on the hands and feet, formed blebs like pemphigus. She had no local symptoms pointing to the urinary tract, but the urine was acid and contained pus cells, and motile organisms which on culture proved to be B. Coli. The urine was rendered alkaline with citrate of potash, after which she made a quick recovery, the rash entirely disappearing, and up to the present time (four months) there has been no recurrence.

Another case worthy of special mention was that of Sheila G., aged two years and eleven months, who was taken suddenly ill with chill, high temperature, drowsiness, and slight delirium. Four days later the urine was found to contain albumen and sugar in large quantities; there were no casts, but crowds of motile organisms which upon investigation proved to be bacillus coli. Under full doses of citrate of potash the temperature rapidly became normal, the sugar and albumen disappeared, and in less than three weeks cultures made from the urine were negative.

The diagnosis of these infections depends entirely upon a careful microscopical and bacteriological examination of the urine in patients with the symptoms above described, care being taken at the same time to exclude disease in other organs sufficient to account for the symptoms. The characteristics of the urine in the acute cases have already been described, but in those of a persistent and chronic type the diagnosis is sometimes far from easy. The urine is acid, odorless, and looks perfectly normal, but on standing, a mucous cloud deposits, in the meshes of which, after centrifugalisation, pus cells and organisms will be found.

With regard to agglutination reaction and opsonic index determinations, Dudgeon has shown that although the opsonic
and phagocytic indices are low, they are not reliable, and that the agglutination test is of no value. Pfaundler, on the other hand, has demonstrated that a bouillon culture of vacilli grown from urine and mixed with the blood serum of the same patient will produce agglutination even when highly diluted.

When the symptoms are wholly constitutional the true nature of the complaint is very likely to be overlooked; if the onset is sudden, it may suggest the presence of an infective fever, pneumonia, meningitis, or ititis media. Meningitis is frequently diagnosed in cases with marked cerebral irritation, and, indeed, the nervous symptoms in an acute pyelitis may so closely simulate it as to require an examination of the cerebro-spinal fluid before that disease can be finally excluded.

In chronic cases in which there is continued malnutrition associated with slight febrile disturbance and no local signs or symptoms, a suspicion of a tuberculous focus is sure to arise, and in such cases an examination of the centrifugalised urine for pus cells and organisms should never be omitted. When local symptoms are prominent, with the presence of pus in an acid urine, bacteriological examination will demonstrate the tubercle bacillus if tuberculous disease of the kidney or bladder is present, and calculus can be excluded by an X-ray examination.

Prognosis.—The course of the disease is very variable; the acute symptoms are usually over in a few days or weeks, but a considerable number of cases become chronic, and with periodic exacerbations may last for months or even years. Birk reports one child who had such recurrences five times in ten years, the last occurring at the age of 12. The ultimate outlook of most cases is favorable, but the rapidity of the cure depends largely upon an early diagnosis and whether the physician, before pronouncing the patient cured, requires that the urine should not only show an absence of organisms and pus cells, but should also be culturally free from the colon bacillus.

In forty cases occurring in infancy reported by Still only three were fatal. Out of Thomson’s 25 cases, 21 recovered, three died from the disease spreading to the kidney, and one of addominal tuberculosis. Jeffries reports 37 cases from Great Ormond St., of which only eleven were discharged cured, and six died, three of the illness and three of other illnesses of which the coli infection was a complication. Goppert had ten deaths in 84 cases, and Ramsey has reported 25 cases, of which none died. Of my 23 cases, twelve were discharged cured, five greatly im-
proved, and three are still under treatment and improving. Three have died, one of acute ileo-colitis, one of broncho-pneumonia, and one of tuberculous meningitis.

Pathologically, two types of the disease may be distinguished, the one showing simply a catarrhal condition of the bladder, ureter and pelvis of the kidney, and the other showing multiple abscesses in the cortex of the kidney. Very few autopsies have been made, owing to the condition being so rarely fatal, and in none of my fatal cases could we obtain permission for a post-mortem examination. John Thomson has reported in detail the post-mortem findings in two cases occurring in infants. In one the kidney was enlarged and the surface studded with collections of pyemic foci surrounded by a hupemic zone; on section the pyramids were intensely enlarged and showed radiating lines of suppuration. In the other, in addition to extensive changes in the kidney substance of a similar type, the ureters were dilated.

Apparently no permanent damage occurs in the kidneys of patients who are cured. Friedenwald reports one case in which death occurred from tuberculosis seven weeks after the patient had been cured of pyelitis, and post-mortem examination could discover no lesions in the urinary tract.

Treatment.—Many acute cases get well spontaneously, and many chronic cases resist every means of treatment that may be adopted. According to John Thomson, the main indications are two: firstly, to ensure a copious secretion of urine by the free exhibition of fluids; and, secondly, to render the urine alkaline as quickly as possible and keep it so for some weeks. The reason for this is that colon bacilli develop less easily and phagocytosis is more active in an alkaline medium. The best drug for this purpose is the citrate of potash, which must be given in doses varying from five to twenty grains every three or four hours. The smallest dose Thomson has found effective is 24 grains in twenty-fours, but 120, 150 or even 180 grains may be necessary. The urine generally becomes alkaline in one to three days, after which, as a rule, the temperature quickly falls, the symptoms subside, and the pus cells and organisms rapidly diminish in number. If digestion is disturbed or diarrhoea set up by the citrate of potash, Still points out that the alkalinity may be maintained by five to ten grains of bicarbonate of sodium or potassium given every two or three hours. I have found citrate of soda added to the infant’s bottle equally valuable under these circumstances.
Baby R., aged 15 months, a typical case of coli-pyelitis, illustrates the value of this method of treatment. On December 25, 1912, she was taken suddenly ill with shivering, restlessness, and high temperature, which during the next six days ranged between 101° and 104°. When seen on the 31st, she looked pale and ill, was losing weight rapidly, the face was puffy and the temperature 103.2. Examination of the lungs and abdomen was negative, but on examination of the urine it was found to be thickly turbid and to contain numerous pus cells and motile organisms. She was put on 5 grains of citrate of potash every three hours; the urine became alkaline in forty-eight hours, after which the symptoms quickly subsided and the temperature became normal. By January 16, she had gained one pound in weight, the temperature was continuously normal, and the urine, which was clear and alkaline, only contained an occasional pus cell after centrifugalization. Since then she has continued to make an uninterrupted recovery.

Kitty F., aged 6, a similar case occurring in an older child, was noticed in November, 1912, to be passing urine frequently and to be restless at night. Three weeks later a febrile attack was ushered in with a chill, rapid respiration, and general malaise; the urine contained much pus and motile organisms. When seen on December 19 the acute symptoms had subsided, but the urine still contained many pus cells and organisms. She was given 15 grains of citrate of potash every three hours, and by January 9 the urine which was alkaline, was found to contain no pus cells or organisms, even after prolonged centrifugalization. Cultures from the urine have been made on several occasions during the past three months, and the result has always been negative.

Betz is directly opposed to this method of treatment, and believes that the colon bacillus is unable to proliferate in very acid concentrated urine. He therefore advocates phosphoric acid, and a meat and no vegetable diet in order to make the urine strongly acid, limits the amount of fluid given, and, in addition, prescribes hot-air baths to encourage a concentrated urine.

My experience with urinary antiseptics has not been satisfactory; in acute cases they have not been of much value, and in chronic ones they have been useless. Urotropin and helmitol are the drugs I have employed, but I have usually combined them with a sodium salt, which may account for my lack of suc-
cess. It is important to bear in mind that the action of urotropin and its allies depends upon their being broken up in the body and excreted as formaldehyde. Sisson has recently shown that the excretion of formaldehyde only occurs in an acid urine, and therefore to gain good results from urotropin it is essential that the urine should be first rendered acid with phosphoric acid or sodium acid phosphate. Box believes that urotropin has very little influence on the bacillus coli, and Dudgeon asserts that if a patient suffering with pyelitis is benefitted by its use, the bacillus coli is not the infecting organism.

Autogenous vaccines I have employed in six cases, but in every case they have been given in addition to alkalies, and they have not appeared to obtain better results than in those treated by alkalies alone. In chronic cases in which alkalies have failed, they have, in my experience, proved of no value; they do not prevent exacerbations, nor do they cause a diminution of pus cells or organisms in the urine.

Williams, Murray, and Wallace have reported cases in which they gave relief to symptoms, and Lyman believes they are of great value, but admits that many cases do not improve more quickly than others without. Rolleston also reports favorably of their use, and Dick believes that cases which do not respond to alkaline treatment are sometimes benefitted by their use.

Of serum therapy I have had no experience, but Box and Dudgeon have given anti-bacillus coli serum a fair trial, but with no permanent improvement. They report, however, that by washing out the bladder with the serum they obtained a marked temporary diminution in the number of bacilli.

Conclusions.—Pyelitis and cystitis are much more common in infancy and early childhood than is generally supposed. Mysterious febrile attacks, especially in females, should therefore not be attributed to dentition or gastro-intestinal indigestion until a careful examination of the urine for pus cells and organisms has been made.

2. The infection may be an ascending one, owing to direct infection with faeces through the urethra; or it may be a descending one, owing to the direct passage of the organisms from the bowel to the kidney; or lastly, and in rare cases, the infection may be carried by the blood-stream.

3. The most satisfactory treatment is that by alkalies; in cases which do not respond to this method, urinary antiseptics,
after first rendering the urine acid, or autogenous vaccines should be tried.

4. In spite of all treatment many cases become chronic; in these, acute exacerbations alternate with long periods of quiescence, but the urine never becomes entirely free from pus cells and organisms.

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The ideal general practitioner is virile by virtue of his environment; he is self-reliant from his isolation; he is resourceful from necessity; he exalts common sense above fine theories; he deals with all conditions and preserves a breadth of vision; grasps general principles, and failing the finer technical knowledge of the specialist, is spared the distortion of his perspective. He knows the patient as a man and a friend and not as a commodity; and he it is who exemplifies best and most consistently that unselfish regard for other that glorifies medicine.—Meara, in Boston Medical and Surgical Journal.
The International Congress of Medicine which has just been held in London was the largest gathering of medical men by far ever drawn together. The meeting was absolutely portentous in size, no fewer than close on 8,000 disciples of Esquulapius registering at the office of the Secretary General situated in the Albert Hall. This vast building was the headquarters of the Congress and was, in most respects, admirably adapted for the purpose. In it were delivered all the general addresses with the exception of that by Professor Bateson and the inaugural and closing ceremonies took place therein. The opening ceremony was performed by Prince Arthur of Connaught who had been deputed by the King to take his place. The immense hall contained, at the time, more than 7,000 delegates and there were a large number of ladies present. It goes without saying that the scene was a picturesque one. Although the majority of the audience were in dark clothes, the hall had by no means a sombre appearance, the gowns and hoods of the university professors, the naval and military uniforms, and the dresses and hats of the ladies lent an air of light and color.

The opening speech by Prince Arthur was commendably brief, as was the speech of Sir Edward Grey, the British Minister for Foreign Affairs who welcomed the visitors in the name of the government. After the chief representative delegates from foreign lands had been formally presented, Sir Thomas Barlow, president of the Congress, gave his address. The general addresses were on different days delivered respectively by Professor Chauffard of Paris, who gave the address in medicine, Professor Harvey Cushing of Harvard University, who was responsible for the address in surgery, Professor Erlich of Frankfurt, the address in pathology, Professor Bateson of Cambridge, an address on heredity and the Right Hon. John Burns, President of the British Local Government Board who gave an address on the relationship between medicine and public health.
These addresses were all good and those of Professor Cushing, Professor Ehrlich and Professor Bateson were especially so.

The arrangements in connection with the Congress were excellent and well carried out, the credit for which was due to Dr. W. P. Herringham, the Secretary General and his co-workers.

The section of Diseases of Children had its quarters in the Royal Society of Medicine Building and was throughout its sessions well attended. The President was Dr. Eustace Smith and the secretaries, Dr. J. G. Emanuel, Dr. Alfred Gossage, Mr. T. H. Kellock and Professor G. F. Still. The reporters were Dr. Menard, Bercksur-Mer and Mr. H. J. Stiles, Edinburgh.

INFANT MORTALITY

An important discussion took place on infant mortality in the first four weeks of life in which three sections joined, those of Hygiene and Preventive Medicine, Obstetrics and Gynecology and Diseases of Children. This meeting was held in the Jehangir Hall of the Imperial Institute, and the great interest taken in the matter was testified to by an audience which completely filled the large hall. Dr. Arthur Newsholme, medical secretary to the Local Government Board who was in the chair in a brief introductory address, said that in the returns of the Board, the question of mortality during the first month of life had been carefully studied from the statistical point of view. One outstanding result, so far as statistics were concerned, was that there was an enormous variation in the death-rate per thousand births in various parts of the country; this variation occurred in a very erratic manner, which could not be satisfactorily explained at present by variations in the industrial occupations of women or by any similar factor. At one end of the scale they had towns with rates of 61, 57 and 55 per thousand, and at the other end were places, also urban in character, where the rate was about one-half of those already referred to.

Sir Francis Champneys, London, expressed the hope that these discussions would prove the beginning of better things in Great Britain, for unfortunately, they had not done much more than begin to consider the subject from the State point of view. They ought to try to make it fashionable for mothers to nurse their infants. His experience was that all mothers who were in what was termed good society were not as bad as they were made out to be. He had known many mothers leading an active life in good society who nursed their children regularly. Sometimes it was the husband who prevented their wives from nursing their
children, from a desire to take them out into society; but if the wife were a wise woman she would go out with her husband and nurse her child as well.

A very common mistake made by nurses acting under the supervision of doctors was to begin feeding a child with milk from the time of its birth. He was convinced that many infant lives were lost through starting to feed the child with cow’s milk as soon as it was born. Many nurses seemed afraid to give a child water to drink, assuming that when it cried it was sure to be hungry, whereas in reality it was, perhaps, suffering from a plethora of milk. They might as well give beefsteak to a man suffering from indigestion. In Great Britain they were starting schools for mothers. That was a most important thing. He had no doubt that the State might spend money very economically in teaching its mothers how to nurse their children. Money spent to that end would be repaid four fold.

**Infantile Syphilis.** Dr. Koplik, New York, affirmed the importance of prenatal influences and suggested that the low percentage of certified syphilis lay in difficulties of diagnosis at this early age. Professor Wallich, Paris, produced interesting figures showing the variation between legititmate and illegitimate cases and between home nursed and those put out to nurse. Dr. Amand Routh advocated compulsory registration of all still-births and Miss Alice Winter and Professor Munro Kerr insisted that pregnancy should be a notifiable condition in order that efficient supervision and instruction could be given, and precautions taken in impending danger. Miss Scharlich urged that women doctors should act as missionaries in persuading pregnant women to submit themselves to systematic examination. Doctors and nurses were to blame for suggesting substitutes for breast feeding; the example of “the highest lady in the land” should be more generally followed. Professor Veit and Miss McIlroy emphasized the importance of syphilis. The latter to the surprise and consternation of the meeting, announced that 49 per cent. of 100 unselected women from an out-patient department had given a positive reaction to syphilis. A very instructive discussion took place dealing with the effects of the ductless glands on development.

**Colon Bacilli Infections of the Urinary Tract.** A discussion also took place on the infection of the urinary tract with colon bacilli. In the course of this discussion, Dr. John Thom-
son of Edinburth read a valuable report on the subject made by him. He pointed out as regards treatment, that in ordinary cases of bacillus-coli infection, the first indication is always to insure a free discharge of urine, and this is usually met by giving the child large quantities of fluid to drink. If, as sometimes happens, the patient refuses to drink enough, the fluid must be administered through a stomach-pump or by the rectum. The second indication is to see that the bowels move adequately. The best drug to use for this purpose is probably sodium phosphate, because it helps in the alkalinization of the urine. An occasional dose of calomel is also often beneficial. The other important forms of treatment are three in number:

1. The alkalinization of the urine.
2. The administration of antiseptics and
3. The use of serums and vaccines.

Dr. Thomson has found the alkalinization of the urine by the use of potassium citrate, or some other alkaline remedy the form of treatment most effectual both in acute cystitis and acute pyelitis. So satisfactory indeed had he found it, that he has almost always used it, and has consequently had relatively small experience in the use of antiseptics or of bacterio therapy.

With respect to vaccines, he has used them in a few cases, but has had disappointing results. His impression is that the main successes of vaccine therapy are in the acute cases of pyelitis which practically always recover rapidly under the alkaline treatment. In the very chronic apyrexial type of bacillus-coli pyuria in older children, he has used autogenous vaccines, several times, but never with any success.

W. W. Butterworth, New Orleans, U. S. A. Dr. Thomson's paper is a most excellent one. In reference to the causation of rigors, it is quite likely that one cause is due to the blocking of the reuincite calibre of the ureter by particles of pus and thus causing a damming back of urine until the pressure is sufficient to displace the obstruction—it is to be observed that the passage of a large quantity of urine is usually associated with chill and temperature.

In regard to treatment of acute cases, good results have followed the alternate administration of Potassium Citrate, for 48 hours by Hexamethylenaenin for the next 48 hours and continuing the plan of alternation of these two preparations—the point is that the B. Coli cannot lend itself to rapid changes of acid and
alkaline reaction of the urine—it is a plan intended to prevent further growth of the B. Coli organism.

Dr. Walker, London. Cases cannot be considered as cured until a series of observations covering a period of several weeks has displayed the absence of bacilli in the urine.

Pyelitis. Dr. C. P. Lepage. 20 St. John St., Manchester. I should like to ask Dr. Thomson about the relation of this disease to Summer Diarrhea. Many cases seem to occur during the hot weather and Dr. Waller's paper suggests some connection between the two. The question of feeding is also of interest and acute cases of diarrhea in infants would be of interest if Dr. Thomson could tell us the results of his experience on these points. The fainting attacks mentioned by Dr. Thomson are a noticeable feature in acute cases and the only other conditions in which I have seen them are fat-indigestion and congenital heart-malformation. As regards complications, I have seen one case in an infant of four months which developed a large perinephritic abscess and made a complete recovery after operation. My experience in the treatment of acute cases with Potassium Citrate has not been so fortunate as Dr. Thomsons' and I do not find that all cases do well with this drug even in full doses. A certain proportion become chronic and it is in these cases that vaccine treatment is useful. Dr. Gortner's paper has shown the value of vaccine treatment in chronic cases. I should like to ask Dr. Thomson to tell us what is in his experience the best method of collecting the urine in infants.

Urinary Tract. J. P. Sedgwick, Minneapolis, U. S. A. The difference in the leucocyte count of the urines of females and males, referred to by Dr. Butterworth, we have found to be due to external contamination. If the external genitalia of the females are scrupulously cleansed this is done away with.

In the clinic of the University of Minnesota attempts were made by Dr. Huennekens and myself to produce cystitis by the application of feces to the external portion of the urethrae of laboratory animals, but without success.

I should like to inquire of Dr. Gortner what he considers the normal leucocyte count in children's urines.

Dr. John Thomson, Edinburg, in reply to questions said that although there were a few exceptions in the great majority of cases, the result of the alkaline treatment had in his experi-
ence been very satisfactory. Most of his cases had been kept under observation during the years which had passed since they were seen and they certainly had remained free from any reinfection or relapse.

When potassium citrate failed to cause steady improvement, salol or urotropin should be alternated with it.

He had found no increased frequency of these cases in summer but in Edinburgh the climate is such that epidemic diarrhea very rarely occurs.

Dr. C. G. Kerley, New York, believes probably 5 per cent. of cases are in boys. Very few cases onset with rigor—usually the early symptom is that of persistent temperature without other symptoms. Temperature, variable and apt to occur in periods. Disease strong tendency to chronicity. Difficult to say when a case has recovered as pus usually appears in the urine several weeks after case is apparently well.

Treatment: Speaker agrees with Dr. Thomson in the use of large doses of Potassium Citrate. He further urged the use of large quantities of waters. After an attack, the urine should be examined weekly for several months.

**TUBERCULOSIS IN CHILDREN.**

A discussion on Tuberculosis in Children brought out papers by Dr. Calve, Berck-sur-Mer and Alton. On the diagnosis of pulmonary tuberculosis in children by Dr. D. B. Lees, London, on the radiographic diagnosis of thoracic affections of children by Drs. D'Oelsnitz and of Nice on the portal of entry of tubercle bacilli by Dr. Findlay of Glasgow and on the first signs of pulmonary tuberculosis in infants by Dr. P. Van Pee, Belgium.


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As for the diagnosis of pulmonary tuberculosis in children.

Dr. Lees, London, stated that X-ray examination of incipient cases of pulmonary tuberculosis did not demonstrate the early changes quite so distinctly as could be effected by an accurate percussion, and that old fibrous and calcareous changes at the roots of the lungs (easily shown by radioscopv) were apt to mislead, because the really important early changes produced only a faint mottling which is easily overlooked.

C. P. Lapage, 20 John Street, Manchester. I agree with Dr. Lees that there are special difficulties in diagnosing early pulmonary tuberculosis in children, and, without deprecating in the least the use of careful percussion and auscultation, I wish to emphasise the value of the evidence given by the X-rays in such cases. First of all, however, I must point out that we need to establish clearly what is the normal appearance to the X-rays of the chest in childhood. I hope that we shall have the opinions of other speakers on this point. Having examined with Dr. By-thall, over 200 cases of early tuberculosis in children, I must say that I cannot agree with Dr. Lees that the apices are often affected in early cases of pulmonary tuberculosis in children. In my experience the X-ray picture of the chest in most of the early cases of tuberculosis shows disease spreading from the roots with perfectly clear apices. Cases of apical tuberculosis do occur especially in the later stages but it is at the roots that we most often find physical signs and see changes on the X-ray screen.

With regard to surgical tuberculosis in children,

Henry Koplik, New York, U. S. A., had this to say: "In regard to the statistical frequency of human and bovine tuberculosis among children, especially the forms of bone, glandular and cerebral tuberculosis, I found in preparing a recent paper on tuberculosis that the frequency of the bovine form varied in different countries from 2 per cent., 10 per cent., and 25 per cent. in England to the percentage mentioned here this morning and it seems the peculiar conditions in England and Scotland may account for this frequency.

Surgical Tuberculosis in Children. Dr. D'Oelsnitz, Nice.

La valeur de l'héliothérapie dans le traitement des tuberculoses osteoarticulaires de l'enfant merite d'être precisee. Il ne faut pas demander a la cure solaire plus qu'elle ne peut donner. Pour ce qui concerne les sequestres c'est par la combinaison du traitement chirurgical et heliotherapique que l'on obtiendra les
The Effect of the Thyroid Upon Growth. Professor Swale Vincent, Winnipeg, Canada, said in a paper written some years ago in conjunction with Professor Jolly, I pointed out that in young animals, although extirpation of the thyroid causes a temporary cessation of growth, this is not necessarily accompanied by symptoms of a cretinoid nature.

Again, I have frequently had occasion to point out that in my experience extirpation of the thyroid never induces the most striking symptom of myxedema, viz: thickening or "solid oedema" of the subcutaneous tissues.

The pathology of cretinism and myxedema must therefore be more complex than simple thyroid insufficiency.

It is possible that in these cases an infection whose specific lesion is thyroidal may be found to account for the symptoms.

Influence of the Ductless Glands on Development, Dr. Koplik, New York. I have been pleased with the conservative attitude of Dr. Gifford in regard to the functions of the ductless glands. It is not all so simple as the singleness of presentation of certain authors in that certain clinical groups are due entirely to a disturbance of function of one of the ductless glands alone. In all of this investigation too little attention is given to inadequacy of other organs in producing certain sets of symptoms. The cretin for example improves in the functions of the intestine as soon as treatment has been begun. The influence of the vast lymphatic system of the intestine in the production of these symptoms has been only casually mentioned and need only refer to certain forms of infantalism giving certain symptoms as emphasized by Herter. The pediatrician sees certain forms of infantalism correlated closely with functions of the intestine as connected probably with the ductless glands.

Dr. Guthrie, London, said he had found Hyperactivity in one sort of glands dependent on insufficiency in another. He has known two cases of typical cretinism associated with prema-
ture sexual development and Hirsuties because even the signs of premature sexual development as well as those of cretinism disappeared under thyroid treatment. This case pointed to Thyroid insufficiency and hyperactivity of adrenal cortex. Hypernephritis cannot be said to be necessarily present in cases of premature sexual development.

**Influence of Ductless Glands on Development.** Reply of Dr. Comby. Je repondrai au Dr. Gorter que jue n'ai pas observé de coincidence entre l'encephalite aigue et la maladie de Heine-Medin, tout en reconnaissant que cette dernière peut présenter des localisations encephaliques. En réalité toute maladie infectieuse peut, chez l'enfant entrainer l'encephalite aigue. J'ai même vu l'intoxication oxy-corbonee s'accompagner d'encephalite aigue avec iliplesie.

Parmi les symptomes de l'encephalite aigue il faut signaler l'excitation cerebrale, l'agitation incessante qui constitue parfois le seul symptome, et les perturbations de la memoire parfois etonnants. J'ai vu un enfant qui a la suite d'encephalite aigue avait une memoire extraordinaire des noms, des choses, des airs de musique. En même temps il avait de l'hyperacouste a un degre excessif. Avec cels, pas de judgement, arrieriation intellectuelle.

**Poliomyelitis and Polioencephalitis, Sir Thomas Barlow, London.** Sir Thomas Barlow thought the section ought to be grateful for the history of the gradual evolution of the epidemics through the femitial groups back to the sporadic cases. He remembered several years ago some of the familiar groups which convinced him of the affinity of poliomyelitis with the infective catarrhs. With respect to the Meningitic type he quite admitted that it was sometimes very difficult to discriminate. But he ventured to say that the head retraction in poliomyelitis when it occurred was generally temporary. It was often associated with severe pain in the back. In the cases of Meningitic form of poliomyelitis there was generally left a vestige of paralysis picking out groups of muscles in a typical way. Whilst on the other hand in the late stage of Cerebrospinal Meningitis if any pareses of muscles remained it was more likely to be accompanied by spasticity which never occurred in poliomyelitis.

He thought the study of the epidemic of Poliomyelitis was most valuable in drawing attention to the occurrence of mild
examples in which the amount of paralysis went to a vanishing point and completely cleared up in a short time.

With respect to the Neuritic form, he had seen cases which strongly supported the view that there might occur concomitant degrees of involvement of nerves with the spinal affection for example exquisite tenderness along nerve trunks with trophic swellings and again paralysis of the facial nerve and ptosis which rapidly subsided. With regard to treatment he thought the great indication was to keep the cases in bed in the early stage so as to diminish the nervous output and conserve the muscular exertion and not to begin massage or resistance movements until all manifestations of pain had disappeared. Gentler massage ought to come first and resistance movements after a considerable interval. He was inclined to put electrical treatment aside entirely in favor of massage and resistance movements.

**Dr. Cossage, London**, wished to call attention to the evidences of inflammation in other parts than the actual central nervous system. Dr. Netter had remarked on the association with Meningitis and Dr. Batten had himself discussed the question of the possibility of polineuritis. The occurrence of polyneuritis in cases of Infantile Palsy had been recorded by several observers but the evidence offered of this has not always been conclusive. Here pain and tenderness in the limbs is not sufficient as this may be due to disease only of the cord. Pathological evidence is wanting. Thus the only conclusive signs of implication in the nerves is the occurrence of anaesthesia and this symptom is of great rarity. Dr. Batten tells of one such case and he, Dr. Cossage, recorded another some twelve years ago.

**Louis Fischer, New York.** The diagnosis should be made by careful study of symptoms early in the disease, notably should vomiting be noted. This one symptom associated with fever in a supposed gastric derangement should lead one to suspect the probability of Poliomyelitis. In a case seen by me in New York in which both Dr. Jacobi and Kerley were called we agreed that a diagnosis of Poliomyelitis and Polisencephalitis should be made. In this particular case the symptoms were very mild at first and within 24 to 48 hours meningeal symptoms and paralysis were seen. I performed a lumbar puncture and after drawing 20 ccs. of cerebrospinal fluid the
intracranial pressure was relieved and the child showed signs of improvement, the case progressed and made a rapid recovery as to speech, eyesight, but a slight facial palsy remained which disappeared after about two years.

Another child in the same family had a mild form of poliomyelitis and paralysis fever—in which all symptoms disappeared and the child recovered after 48 hours.

The treatment is rather difficult and I have seen good results without treatment and poor results with every form of treatment medicinal and mechanical.

**Polyneuristic Poliomyelitis.** Dr. Guthrie spoke of the Polyneuristic form and said its existence had not been proved experimentally, but he thought there was evidence of its occurrence clinically. He mentioned the case of a boy who after a short feverish attack suffered from symmetrical paresis, tenderness of both lower extremities, weakness of right arm, loss of knee jerks.

In addition he had double ptosis simulating the congenital form. All the symptoms eventually cleared up. He thought that the ptosis could not possibly have been nystagmus in origin—had probably depended upon neuritis of the supreme branch of the third nerve on each side. The recognition of the polyneuritis form was important for the progress in this form was much more favorable than in cases of true anterior poliomyelitis.

**W. W. Butterworth,** New Orleans, U. S. A. Mr. President, it was your distinguished countryman, Sir. William Jenner who said that the physician should ask himself concerning his patient first what's the ailment and secondly what will effect a cure? and relative to the latter, I should like to ask Dr. Batten if there is any experimental evidence relating to the use of serum from a recently cured poliomyelitic injected either into the lateral ventricles or spinal cords of an acute poliomyelitis—or does he know of any objection to the direct transfusion of blood from a recently recovered case of poliomyelitis into an acute case of this disease.

**Dr. Kerley,** New York. Dr. Kerley saw a large number of cases in the New York epidemic of varying degrees of severity—cases so severe that the child may die in a few hours, or so mild that a permanent paralysis does not occur. Speaker had seen several cases die in 36 hours. In several instances also there
was no resulting paralysis. In the management the speaker felt that much was to be accomplished in treatment, through maintaining muscle functions while the nerve cells are completely undergoing a partial regeneration.

**Encephalite Aigue Chez le enfants.** Papers were also read on this subject by Dr. H. Comby, Paris. Fermented milk in Pediatrics by Professor Zaacee, Naples. A new symptom of scurvy rickets by Dr. Siegfried Weiss, Vienna. Treatment of septic scarlet fever and complications with neo-salvarsan by Dr. Louis Fischer, New York.

The social side of the congress was brilliant. Entertainments, receptions, dinners, garden parties, official and unofficial were numerous. Whatever can be said of the congress, at least, the hospitality of the English medical men will be ever remembered by those who partook of it.

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**THE BATTLE CREEK SYSTEM**

The Battle Creek Sanitarium is one of the really unique medical institutions of the country; and an account of its work, more especially of its system, has interest for medical men. The management has issued a 225-page brochure, profusely illustrated and handsomely printed, fully describing the "system." Rightly read and interpreted, it is full of interest to every medical man.

The line of treatment at the Battle Creek Sanitarium is, for the most part, thoroughly modern and scientific. The emphasis placed upon suggestion, mainly in environment rather than in any form of statement, is interesting, and its value, as measured by results, cannot be denied. The emphasis placed upon diet is also interesting, and while many medical men may question its value from a scientific standpoint, it produces results empirically not to be denied. It may be part of the environment.

An appendix of twenty pages gives the value, in calories, of practically every food-product known, including the form in which the product comes to the table. This appendix also gives the normal condition, as expressed in size, weight, etc., of a person at different ages, with the food units required.

This brochure is really valuable to every physician, and the sanitarium will send it free to anyone who asks for it.
BOOK REVIEWS


We welcome the 1913 volume of this series and desire to call the attention of the general practitioner to this volume for whom it is primarily published. This volume contains a valuable collection of excerpts of the latest advances made during the year 1912 in diseases of children and orthopedic surgery.

The volume opens with a dissertation on diseases of the newborn followed by chapters on hygiene and dietetics, and the more important diseases of later infancy and early childhood are also very cleverly portrayed in the department of Pediatrics, which is clearly and succinctly written by Dr. Abt with the assistance of Dr. Michael. The section of the work devoted to Orthopedic Surgery covers very satisfactorily the diseases of the hip joint, the spine, and all of the larger joints, as well as infantile paralysis and a miscellaneous group of affection and injuries, all of which are important to any and every physician who assumes to treat diseases of infancy and childhood. The book is well arranged for ready reference having a splendid index. It is an important addition to the Year Book Series.


career of the physician who is bidding for wealth and distinction and is oblivious to everything that does not help in his upward climb; it is the type of career which the money-making American of today has carried to such sad excess.

Dr. Weaver, expert laryngologist, who five years before the story opens was borrowing money to set up a private hospital for treatment of his own patients. Now, he makes nothing of seeing fifty cases a day, operating on a dozen of them with marvellous and successful skill, then dining out and ending the day long after midnight at balls, parties and dances amongst the ultra fashionable set of the New Rich in New York. In a word, Dr. Weaver is famous. The author, however, does not fail to show that fame has been built up on unethical methods, such as advertising his private hospital; wide spread pamphleteering to the number of sixty thousand copies of reports of operations, the diagnosis and determination for which were accomplished by Dr. Weaver's own brother, Dr. Jim, of whom he makes no mention; political scheming; splitting of fees; and inextricable newspaper notoriety carried on in shady styles.

Dr. Jim, his younger brother, is unknown and is strictly out of the set in which his more prominent brother moves. The younger brother attends the clinics, takes care of the poor and needy, and the older brother goes there only when he can "practice" an operation on some unknown personage before attempting a similar operation on some person whose case will bring him more popularity and wealth. The younger brother, because he is not always able to ac-
cept his brother's creed of success, and because he believes in the nobility of his calling, and because he has the deep sympathy of the true physician, is about to break away from the institution owned by his brother, tiring of the hypocrisy of it all, and seeing no change in the future, when the older brother is called to the bedside of the dying Governor. The Governor is delirious and goes back to his younger days, when he builded his future on the hearts and souls of those around him, and raves because of his lost happiness. The physician sits there and listens, while the Governor's wife, married to aid in his upward way by her wealth, also hears and thinks "Nellie" was a sister of whom she has never heard, but the physician hears and reads in the ravings a warning.

Dr. Weaver married to the woman who helped him rise from obscurity to wealth, and Dr. Jim working for the cause of progress, and the hospital flourishing.

At the end comes awakening and regret, and a better man. Intermingling with the stirring narrative of a busy practice in hospital and office, are the love affairs of Dr. Weaver and Dr. Jim, both of which end delightfully. We can, now, heartily recommend this entertaining medical novel to our medical brethren for an evening of leisure, as an excellent description of the latest dash in medical advancement at any cost to any rash competitor.

The Diseases of Children. by Henry Enos Tuley, M.D., late Professor of Obstetrics, University of Louisville, Medical Department; Visiting Physician Masonic Widows' and Orphans' Home, Louisville, Ky.; Secretary of the Mississippi Valley Medical Association; Ex-Secretary and Ex-Chairman of the Section on Diseases of Children, American Medical Association; Ex-president American Association Medical Milk Commissions, etc. With one hundred and six engravings and three colored plates. Second revised edition. C. V. Mosby Co., St. Louis, 1913. Price, cloth $5.00; sheep, $6.50.

This volume contains a full and complete exposition of the world's best and latest knowledge in pediatrics. The work presents a description of the diseases of children as they are seen by the busy physician, and contains a well balanced presentation of the science of pediatrics. The general character of the book has been kept the same as former editions. The needs of the general practitioner and student have been kept in the forefront and as far as possible the views of authorities on diseases of children have been given, as well as the experience and observation of the author. Many new food formulae have been added and suggestive standards and methods for the production of certified milk in accordance with the teachings of the American Association of Medical Milk Commissions have been reproduced in full in the appendix.

The old classification of diseases of the gastro-intestinal tract have been retained. A number of new illustrations have been added—some to take the place of ones which have been omitted, others are entirely new.

Dr. Tuley firmly believes the question of infant feeding to be one of the most important with which the general practitioner has to contend, and he, therefore devotes more space to this subject than is usually found in modern text books. The author lays special stress on the necessity for certified milk commissions and urges the establishment of milk depots where certified milk may be had. Dr. Tuley handles the subject of "Infant Feeding" in a masterly manner, giving the latest information on a most important subject in a manner that is simple, easily grasped and readily put into practice.

The author considers each diseased condition in a methodical manner, giving special attention to the dietetic and hygienic management. He devotes sufficient space to etiology and pathology, leading up to a full consideration of the more directly practical subjects of diagnosis, including differentiation and treatment, which is thorough and definite. We cordially recommend the work to our readers.
RETROSPECT OF CURRENT PEDIATRIC LITERATURE.

Infectious Diseases.
Under the Charge of
ST. GEO. T. GRINNAN, M. D.

Associate Professor Pediatrics, Medical College of Virginia; Visiting Pediatrist, Memorial Hospital, Richmond, Va.


Epidemic Measles.—Of the 1,000 cases of measles studied by Craster the greatest number were in the month of incidence of attack (195). The largest complication percentage, 81.3, and case mortality, 34.3 per cent., are found in the first year period. The seasonal prevalence of complication was highest in December, 78.8 per cent., and of case mortality in January, 25.2 per cent. The most frequent complication was otitis media, 495. The most common cause of death, bronchopneumonia and enteritis, 23.3 per cent. of total deaths. Average duration of the fever, four days. The onset of purulent otitis media on tenth or twelfth day may not be attended by unusual fever. If the temperature remains high after the fourth day, a possible grave complication is imminent. An initial high temperature does not necessarily point to a possible severe attack.

Acute Infections in Children.—E Muller, in the Medizinische Klinik, Berlin, July 13, calls attention to the care in which the infectious diseases of children are now treated. He remarks that the lime-light of attention has shifted in the last few years from the difficulties of infant feeding to the dangers of acute infections for infants. Many of the old febrile “digestive disturbances” are now known to be the work of infection. Some of the known air-borne infections manifest themselves mostly by intestinal symptoms. The purely intestinal affections of infants have constantly lost ground, while among the parenteral, infection by way of the air is becoming more and more important as infection by contact grows less frequent.

The complex of infections which we call influenza is particularly noxious for infants; the influenza may manifest itself with a catarrhal fever and inflammation in the air passages; or it may induce predominantly intestinal symptoms, or the syndrome may be merely an intermittent fever without other symptoms but suggesting a septic course, probably due to general toxemia. Influenza is air-borne, as a rule, and partitions a little over six feet high seem ample protection. Glass “boxes” of this kind to isolate the infants have answered the purpose of protecting against all these air-borne infections except chicken-pox; the germ of this seems to be so light that it does not settle down in the quiet air of the “box” but floats off over the partitions. Meyer has recently reported that children suffering from recurring influenza suddenly began to thrive when they were placed in “boxes.”

Another evil of influenza is its connection with diphtheria. In his service, throat diphtheria is very rare in infants but numbers of the little ones are carriers of diphtheria bacilli. In many instances, the “coryza of infants” is really a combination of influenza and diphtheria;
the nasal secretion is usually bloody-purulent in these cases. The gravity of such a combination is obvious, and the necessity for bacteriologic examination and antitoxin treatment. The latter seldom cures but at least it prevents the spread of the diphtheria to the throat. Infants seem particularly susceptible to whooping cough, and the course and effects are exceptionally serious in them, especially in the rachitic. The exudative diathesis predisposes to pertussis, but in his experience the manifestations did not seem to be more severe in the children inclined to spasmophilia than in others. In all cases of acute infection in an infant, the first and main points are to protect it against new infections, to isolate it and to keep it in a sunny room; the sunlight is a particularly powerful disinfectant in respect to influenza.

In conclusion he calls attention to the variation in the character of epidemic infections at different times, and reiterates anew the importance of paying less attention to the intestines of infants and more to their general infections.

Scarlatinal Abscess.—Sorensen (Therapeutische Monatshefte, Berlin, Vol XXXII, No 8, August, 1913) gives his treatment in 4,000 cases of scarlet fever. He states that an abscess developed near the ear in fifty-three of the 4,000 scarlet-fever patients at the Copenhagen Hospital. Treatment was by incision down to the bone, drainage, and rinsing out, with or without instillation of dilute iodin-potassium iodid solution and a cotton dressing. Of the fifty-two children treated in this way—fifty-seven abscesses—none died, although the scarlet fever in these cases had been of an unusually severe type and there were numerous other complications. In 100 cases at another institution in which radical operative treatment was applied, the mortality was 9 per cent. The general condition was good in 88.5 per cent of Sorensen’s cases with conservative treatment. The details of the more typical cases are given. Only three of the total number required a radical operation later.

Otitis Media and Pyelitis in Infants.—F. Glaser and H. Fließ (Deutsche Medizinische Wooh., Berlin, July 24, Vol XXXIX, No. 33, have encountered three cases which have convinced them that otitis media is extremely liable to accompany pyelitis or precede it, and should be suspected even when there are no manifest signs of ear trouble whenever the fever keeps high. In one case the colon-bacillus pyelitis was evidently a complication permitted by the general debility resulting from the unsuspected otitis media; the child recovered its health after paracentesis and the cure of the otitis. They reiterate that when an infant has fever although it seems to be explained by discovery of pyelitis, yet the greatest attention should be paid to the ear. Otitis media may be the primary trouble even although there are no signs of it to be detected, no bulging of the drum, no redness and no tenderness in the mastoid. If the membrane shows any signs of redness they urge to incise it at once. The pyelitis in such cases is merely secondary, the result of mixed infection.

Fatal Illness in Children Associated with Acute Interstitial Parotitis.—M. H. Gordon give his histologic observation of an unusual lesion—parotitis—in a series of four cases under observation in the postmortem room at St. Bartholomew’s Hospital during the past few months. All of the patients in question were children. All had died after a short illness in which the symptoms pointed to meningoencephalitis. Post-mortem meningeal congestion was found in all the cases, and in two of them there was flattening of the convolutions and other evidence of increased intracranial pressure. In all alike no pus was present in the meninges. There was no evidence of tubercle in the meninges, brain or elsewhere. The cerebrospinal fluid was clear and contained an excess of lymphocytes, but no visible bacteria. Sec-
tions of the cerebral cortex and of the cord failed on microscopic examination to yield histological evidence to justify a diagnosis of poliomyelitis.

As regards the rest of the body, the lymph-nodes both in the neck and mesentery were swollen. In two cases the lymphoid tissue in the small intestine was more prominent than usual, this change being most marked in Peyer's patches in one case, and in the solitary follicles in the other. In two of the cases petechial hemorrhages were seen; in the first in the parietal pleura and visceral pericardium, and in the second on the under surface of the liver and beneath the capsule of the kidneys. In all the children both heart's blood and cerebrospinal fluid failed to show growth on agar, and their illness would have remained a mystery had it not been for the following observation: Although the salivary glands were not obviously enlarged and had given rise to no symptoms, they were found in all the four children to show on histologic examination foci of acute inflammation—chiefly interstitial in distribution. The duration of their illness had varied. In one case the child died within twenty-four hours of the onset, and clinically it was a case of "convulsions." The others died on the second, third and twelfth day respectively. The illness from which these patients had suffered presented certain features of general similarity. In point of fact, as a result of the first two cases the last two had been suspected clinically of being instances of this disease. Three out of the four patients had drowsiness as a well marked initial symptom. All developed coma. One had delirium.

In all of the cases the eyes were sunken and fixed or staring, but not to one side; their axes were parallel—that is to say, there was no squint. In all the pupils were dilated. In nine was any abnormality made out with regard to the disk. All of the cases presented the symptom of muscular rigidity in some form or other. In two the head was definitely retracted, and all had some stiffness of the neck muscles. Kernig's sign was positive in three. Three of the patients had twitching and two had "fits" of more or less general muscular rigidity, in course of which they died. Babinski was present in two cases, doubtful in one, and absent in one. Three of the patients lost their knee-jerks and the reflex from their abdominal muscles. The children had a marked pallor. All of the cases had pyrexia, and all had a frequent and feeble pulse. All of them had a certain amount of vomiting and diarrhea, the stools of three of them being of a greenish color. The cerebrospinal fluid was under increased pressure. On examination an increase was found in the cells, the number counted being 50,446, and 6,800, respectively, per cm. in three of the cases. In all the cases the predominant cells in the cerebrospinal fluid were lymphocytes. As regards the blood the leukocyte count was 11,400. A differential count showed a well marked lymphocytosis.


Elgart has been applying eucalyptus oil according to Milne's directions in prophylaxis of scarlet fever and measles. But he did not smear the whole body with it, as Milne does, but had the children wear a bag kept soaked with the oil, thus inhaling the fumes constantly and disseminating the fumes through the room. Milne is house physician at the Barnado homes for boys, and during his thirty years of service over 12,000 boy inmates have passed through his hands. There were 245 cases of scarlet fever and 234 of measles, all imported from without and none starting an epidemic although the children were not isolated but merely smeared from head to heel with the eucalyptus oil twice a day for the first four days and then
once a day for six days, while the tonsils were swabbed with 10 per cent. phenol in oil, at first every two hours the first day and then at longer intervals. The swab used was always the size of the patient's thumb. Elgart prefers inhalation of a 30 or 50 per cent. solution of lime (Aq calcis) to sterilize the throat, instead of the phenol, and has found it equally effective, but he makes a point of having every one coming in contact with the patients or exposed to infection in any way use the inhalations also, and likewise wear the eucalyptus oil amulets. In one ward with seven children, one developed scarlet fever and was isolated; the other children for four weeks were made to inhale the 50 per cent. solution of lime twice a day at first and later once a day and wear the eucalyptus oil bags and now developed scarlet fever. He remarks that the development of the scarlet fever in a child who had been in the (new) hospital for four weeks suggests that ordinary sore throat cocci may have acquired exceptional virulence for some reason and thus set up the scarlet fever. Milne's technic is based on the assumption that the eucalyptus oil sterilizes the desquamating skin, but Elgart thinks that this is unnecessary if only the receptive organs of the persons liable to become infected are kept sterilized, and he thinks that this is accomplished by keeping the air of the room saturated with the fumes of the eucalyptus oil on the neck bags, supplemented by direct sterilization of the throat, keeping up these measures for six weeks.

His experience confirms further that the eucalyptus oil neck bags are effectual also in prophylaxis of measles; no further cases developed in a ward with eighteen children after two coming down with measles had been isolated and the others kept supplied with the oil amulets. The isolation was maintained only while the bronchitis lasted, about two weeks. Scarcely any of his scarlet fever patients inhaling the solution of lime systematically developed complications, and they were extremely mild and brief. He is convinced that his success sustains his assumption that the acute infectious diseases are spread by inhalation, and that by keeping the inhaling organs of all exposed constantly sterilized with the eucalyptus fumes, the lime water or other effectual disinfectant, the spread of the infection can be prevented, the disease attenuated and the source shortened.

Diseases of the Respiratory System

Under Charge of

W. C. HOLLOPETER, A.M., D.D.

Professor of Pediatrics, Medico-Chirurgical College, Philadelphia

Pneumonia, Treatment.—J. F. Bell, Englewood, N. J., outlines the treatment of pneumonia in Infancy and Childhood, in the New Jersey Society Journal, Orange, in the July, 1912 issue, a brief synopsis of which is given in the Journal of the American Medical Association of August 23, and is as follows:

The treatment of pneumonia in children should be simple but carefully and individually directed, and laid out under the following four heads: 1. Medical (a) Cathartics.—Bell finds it generally a good plan to empty the intestine with either castor oil, calomel with milk of magnesia or podophyllin and soda. (b) Sedatives.—Sedatives are serviceable for pain and harassing cough. Paregoric is specially suitable for this purpose; codein and heroin may be used, the less of either the better. (c) Stimulants.—When stimulants are necessary Bell uses caffein for the low muttering delirious cases. Alcohol freely even in babies, and in a serious crisis digalen intravenously. Following Sajous' suggestion, he has used in a few cases of 5 c.c. doses of normal salt solution every two hours, adding orange
juice and egg white occasionally. (d) Serum therapy.—He has used anti-pneumococcus serum in two cases. In one of these antistreptococcal serum was used in conjunction, because streptococci were abundant in the sputum. Large doses were given and the patient did well. It follows that the earlier the serum is given the better the opportunity for favorable action. 2 Hydrotherapeutic.—Sponge baths of water at 21 C., 32 C. or 41 C. (70-90-106 F.). Bell usually begins with temperature 32 C. (90 F.) to 40 C. (104 F.). 3. Dietetic.—The diet must be selected in accordance with age and needs of the child. 4. Hygienic.—Bell has found it advantageous to treat all his pneumonias more or less in the open air.

Circulation in Diphtheria.—N. Creutzfeldt and R. Koch (Virchows Archiv, Berlin, Vol CCXIII, No 1) state that the circulation frequently fails in diphtheria before there are any clinical signs of change in the heart, and that on autopsy the heart lesions are frequently insufficient to account for the severe atony of the vascular system. They believe that the hypophysis is partly responsible for this atony, and their belief is confirmed by the marked dise in blood-pressure brought about by hypophysis extract. In seven cases of death from heart involvement in diphtheria, they found profound changes in the pars intermedia of the hypophysis. These same changes were produced in guinea-pigs by the injection of pure cultures of diphtheria bacilli. A combined epinephrin-hypophysis extract therapy should be used in cases of diphtheritic heart involvement.

Sounding Board in Diseases of the Chest.—The Journal of the American Medical Association, August 23, calls attention to a Sounding-Board in the Diagnosis of the Diseases of the Chest, reported by J. E. Engstad in the Journal Lancet, Minneapolis, August 1, 1913. The sounding-board used is three feet wide by five feet high, made from two piano sounding-boards, the boards being set four inches apart in a hardwood frame properly fastened with glue and avoiding nails or other metallic reinforcements. The boards are braced in their center by a bridge of hardwood, and the front board has two holes two inches in diameter bored through it, which tends to equalize the pressure of the air between the boards and frame while in a state of vibration and the circumambient air, which is the cardinal principle for the proper reflection and reinforcement of the airwaves, or energy in the form of vibrations.

This apparatus, Engstad says, will markedly intensify all sounds from the chest-walls, and it has been of great service to him in suspected small cavities, deposits and small infarcts in the chest which are revealed by the reinforced vibrations as reflected from the sounding-board, which prevents the sound waves from disappearing in space, but are reflected redoubled in the angle of the impact.

Cerebral Paralysis following Diphtheria.—In the Jahrbuch fur Kinderheilkunde, Supplement, Vol. LXXVIII, A. L. Dynkin reports two cases of Post-Diphtheritic Cerebral Paralysis of which the Journal of American Medical Association, August 30, gives the following abstract. These paralyses occur only after very severe forms of diphtheria. In all cases physical signs of heart failure are manifest, such as arrhythmia, murmurs and dilation. They occur mostly in the third or fourth week of the disease. A paresis of the facial and hypoglossus nerves and aphasia are generally observed in conjunction with them. In many cases there are also peripheral disturbances, such as paralysis of the soft palate and of accomodations, failure of patella reflex and incontinence of urine and feces. The cause of post-diphtheritic hemiplegia is generally an embolus from heart thrombosis; much more rarely thrombosis of the cerebral vessels.

An extensive review of the literature on the subject is included in Dynkin's article.

Prognosis of Cardiac Diseases in Childhood.—C. H. Drum of Boston
gives the report of his investigations into the cause of cardiac diseases in childhood in the American Journal of Diseases of Children in the August, 1913, issue.

Cardiac Disease in Childhood.—The series of cases included in Dunn's investigation numbers 304 cases of cardiac disease. It throws a certain amount of light on the relative frequency of occurrence of the various etiologic factors. Rheumatic fever, 264 cases, 87 per cent.; congenital lesions, 21 cases, 7 per cent.; some recognized infection other than rheumatic fever, 9 cases, 3 per cent.; unknown etiology, 10 cases, 3 per cent. Acute infection, 206 cases, 78 per cent.; chronic endocarditis, 58 cases, 22 per cent.

Dunn points out that rheumatic fever is very much the commonest cause of cardiac disease in childhood. Cases with acute rheumatic infection localized in the heart are much commoner than patients suffering from chronic endocarditis.

Cardiac symptoms are due to two causes: first, acute infection localized in the heart; second, broken cardiac compensation. Of these two causes the first is the commoner. The liability of children to recurrent attacks of acute rheumatic infection, in any of which the heart may be involved, is very great. The immediate mortality of rheumatic cardiac disease is about 20 per cent. The subsequent mortality of patients with endocarditis of rheumatic origin, followed for at least ten years, is about 50 per cent. The final mortality of rheumatic fever followed for at least ten years is 60 per cent. The mortality is seen chiefly during childhood. The mortality after young adult life is reached falls to only 7 per cent.

The cause of death is heart failure. The cause of the heart failure may be either acute cardiac infection or broken compensation. In childhood the former cause is far the more common. After adult life is reached the latter cause is more common. The particular valvular lesion present has little or no relation either to the mortality or the amount of disability in adult life; except that aortic disease appears to be a particularly fatal lesion in childhood. The causes of the great mortality of rheumatic fever in children are: first, their greater liability to this infection; second, their greater liability to recurrent attacks; third, their greater liability to cardiac involvement. Patients who escape the dangers of childhood, and who enter adult life, are apt to show a remarkable freedom from disability. The majority of such patients can lead normal active lives. The probable cause of this freedom from disability lies in the fact that the cardiac damage occurs during the period of growth, and during this period a particularly perfect adaptation can take place between the heart and the patient, which enables the heart to meet the demands made on it. This adaptation is more perfect than can be attained in the adult. The earlier in life the cardiac lesion is acquired, the better is apt to be the result in adult life, as concerns ability to lead an active, normal existence; provided that the patient escapes the dangers of childhood. Treatment should be directed toward favoring the adaptation of child and heart. While guarding against overstrain, we must avoid too great limiting of the normal activities of childhood. In congenital cardiac disease, open ductus arteriosus is a favorable lesion.
Diseases of the Alimentary System.
Under the Charge of
JAMES WARREN VAN DERSLICE, M. D.
Assistant Professor of Pediatrics, Rush Medical College, Chicago, Ill.

Vomiting in Children.—The infantile stomach, remarks the editor of the Medical Council, is but partially developed structurally and functionally and emesis is readily induced. That overfeeding causes vomiting is well known; not so well known is the fact that underfeeding produces, what Chemisse (Chantemesse?—Ed M. S.) calls "inanition vomiting," which is often a serious affection marked by prolonged reversed peristalsis.

It is coming to be known that too great dilution of the infant's food is productive of a series of ills, inclusive of persistent vomiting. It really overtaxes the child's stomach to unduly dilute its food. Pale, wasted and restless baby may be noted among both the underfed and those having too great a bulk of food with little real nutritive value.

Vomiting from absolute intolerance for milk is very rare. Our city life, with its noise and hurry, is productive of nervous vomiting in children, and removal to the quiet country will often effect a cure of cases not thought to be nervous. Watch the babies for premonitory signs of this condition, such as rapid changing of color, hard abdominal muscles and spasmodic cough. Many of these coughs are thought to be pertussis when in fact there is no such element in the case.

The spasmophiliic child, with tetany, rickets and perhaps scorbutus and diarrhea, is much given to vomiting. The fussy class of wealthy people who demand sterilization of everything for their children, induce rickets of a mild type or scurvy of masked character in their offspring. Look out for these cases.

Cyclical vomiting is common with neurotic girl babies and children with deranged livers. Vomiting of this character is too often attributed to intestinal obstruction or congenital stenosis of the pylorus, whereas the real cause may be hysteria or an organic trouble, such as fatty degeneration of the liver. Children are too often put under chloroform these days, and commonly for very slight reason or unnecessary treatment or operation; this ruins their nerves and digestive systems.

Rest of the stomach, mild laxatives, attention to underlying conditions, careful dieting and general care are more important in treatment than is medication. Sodium citrate helps many cases. In nervous vomiting chloretone is suggested. Alkalies are of value, in severe cases given intravenously. But in severe cases rest is of more importance than putting any stress upon the little patient, and certainly nothing at all should go into the stomach beyond a little ice, and possibly, a trifle of cherry laurel water.

Summer Diarrhea in Infants.—An excellent editorial on this subject appears in the New York Medical Journal. The writer declares that the time-honored dose of castor oil, to clear the intestinal tract of its pathogenic contents, is increasingly being replaced by calomel, owing to its antitoxic and bactericidal virtues, is familiar to every practitioner; but the trend of modern thought is to adjust the use of this agent to the status present of the patient. Thus, as taught by Lesage, patients who have high fever, foul smelling though not abundant stools, and considerable tympanites, will do best if given one grain (for infants under one year, and two grains for those over that age) at one dose, while patients with low fever and copious diarrhea, although the abdomen is soft, show better results.
when from 1-10 to 1-15 grain is given every half hour or hour until ten or twelve doses have been taken.

A second feature too often overlooked is that milk favors the multiplication of intestinal pathogenic bacteria, unless the infant be breast fed; the milk under the latter conditions being antitoxic—the opposite of cow's milk after it has left the udder several hours. Hence the fact that artificially fed infants do best, when suffering from bacterial diarrhea, when nothing but water is allowed until the symptoms of intoxication subside. This should not, however, be allowed to weaken unduly the infant or cause material emaciation. When feeding can be resumed, white of egg, which, as is well known, is a nutritious and readily assimilated proteid, is to be preferred as soon as the stools lose their offensive odor. Finkelstein's Elweis Milch (casein albumen milk) is preferred by some, however, when there is a marked weakness or emaciation. It is prepared as follows: A tablespoon of essence of rennet is added to a quart of milk, which is then placed in a water bath at 108 degrees F. for one half hour. It is then filtered slowly through cheese cloth. The coagulum is washed twice in a pint of water through a fine sieve, and forced through by beating with a wooden club. Then one pint of buttermilk is added. This is given in quantities corresponding to the usual feeding mixture indicated at a corresponding age.

Less complicated and probably quite as efficient is buttermilk, which is increasingly gaining advocates. Swarming as it is in its raw state with lactic acid bacteria, which have an inhibitory action on the development of other germs, it is especially efficient when the intestinal pathogenic organisms persist after the preliminary purgation and water diet. Besides, it is very nutritious and inexpensive. The infant will often refuse it, owing to its taste, but as recommended by Blackader, this may be obviated by adding cereal gruel and five grains (0.3 grammes) of cane sugar to the ounce of buttermilk. The latter may or may not be pasteurized. Morne obtained excellent results from pasteurized buttermilk, and prefers it to all other milk foods. We are inclined to look upon pasteurization as a drawback, since it tends to impair the activity of the lactic acid bacteria.

It is perhaps unnecessary to emphasize the fact that cases differ and that the best results are obtained where a careful diagnosis has been made. Prophylactic and hygienic measures are also potent auxiliaries, but most potent of all in the prevention of infantile diarrhea is breast feeding, breast milk itself being a powerful antitoxic.

(To this excellent advice little can be added. However, it may be stated that good results have followed the use of the ready-prepared Bulgarian buttermilk tablets, without the complete cessation of the milk diet, as ordinarily advised. Also, after thorough cleansing of the bowel, as advised, small doses of a suitable antiseptic—and the copper salts are not irritant and very effective—can do no harm and generally do much good.)

Intestinal Dyspepsia in Children—Much is heard nowadays concerning intestinal indigestion in adults. Sir Arbuthnot Lane and several American medical men have been writing largely of late with regard to intestinal statis and its treatment, and to some extent views have undergone a considerable amount of revision respecting this form of indigestion and its treatment. Dr. Edmund Cautley is an acknowledged authority in England on diseases of children, and recently he delivered a lecture on intestinal dyspepsia in children which was published in the Medical Press and Circular, February 19, 1913. He described at some length, acute intestinal dyspepsia, chronic intestinal dyspepsia, carbohydrate or food fever, mucous disease, catarrh of the small and large intestine, hepatic and pancreatic inadequacy and achyria gastrica. Excellent and valuable as these descriptions were, there is no space here to
more than notice them, and attention will be concentrated upon the
differential diagnosis and treatment for efficient treatment of simple
intestinal dyspepsia depends on accurate diagnosis. It is always es-
seential to exclude tuberculosis, especially the abdominal forms. In
making a differential diagnosis, especially in distinguishing intestinal
inadequacy, the microscopical examination of the stools is of very
great value, though naked eye appearances are not to be despised.
The odor, color, reaction, consistency, and the presence or absence of
mucus afford valuable assistance in the absence of the most accurate
results of the pathological laboratory. If the stools are apparently
normal the child may be treated for simple intestinal dyspepsia. If
they are white, ascertain whether the absence of color is due to excess
of milk curd, complete absence of bile, conversion of bile into urobilin-
gon, or excess of fat. Moreover, it is important to exclude the pres-
ence of worms. The simpler causes of colic must be excluded, i.e.,
iced drinks and foods, cold feet and chills, as well as more serious
ones, such as lead poisoning and organic disease. Treatment is gen-
eral; dietetic and local. In severe cases, with marked neurotic symp-
toms, a few days in bed is a useful preliminary. Mere local treat-
ment is insufficient, for malnutrition implies general ill-health. Pre-
vent physical or mental overstrain, and forbid working for school ex-
aminations. Change of air and surroundings cure many cases quick-
ly, perhaps, through the mental effect, the holiday, and the increased
metabolism due to an open air life. Keep the abdomen and extremi-
ties warm and dry. Attend to the teeth. Remove enlarged tonsils and
adenoids, if present. Let the diet consist of simple, regular mixed
meals. Reduce milk if it is given in excess, and dilute it. Many of
these children are stuffed with milk on account of the malnutrition,
and are made worse thereby. Limit the amount of fermentable foods,
sweets, jams and carbohydrates generally. As the child improves, try
porridge or other cereal foods and brown bread. At first the diet
should be limited to eggs, fresh meat, bacon, butter and dripping dry
toast, rusks and malted foods, greens passed through a sieve; ripe
fruit may be added later. New bread, new potatoes, fried fish, hot
greasy foods, pickles and stringy vegetables must be avoided. Cream
suits a few children especially country cream devoid of preservatives,
and is best given with stewed fruit. On the whole, Cautley prefers to
rely on butter, margarine, bacon fat and beef drippings to supply the
necessary hydrocarbons. Many children develop intestinal indigestion
because they are stuffed with cream and cod liver oil on the supposi-
tion that the malnutrition may be of tuberculous origin. For the same
reason, they are sent to the seaside, whereas country air is much more
suitable. Give no cod liver oil or hypophosphites. If there is consti-
pation, and especially if there is mucus in the stools, give grey powder,
or rhubarb and soda, at night, and a dose of sodium sulphate or apera
water in the morning. And prescribe a mixture of alkali, nux vomica
and a vegetable titter to be taken three times a day before meals.
Multine and mild alcoholic drinks are also useful. Other appropriate
remedies are bismuth and carbonate of magnesia for diarrhea, char-
coal and salol for tympanites and excess of mucus; decoction of aloes,
and -i before food, calomel for white stools and small doses of
Dover’s powder or tincture of opium for dysentery. Much more re-
liance should be placed upon dietetic measures than on drugs and at-
tention should be paid to general hygiene, sleep, exercise and amuse-
ments.—N. Y. Practitioner.
Surgical Diseases of Childhood.

Under the Charge of

WILLIAM A. EDWARDS, M.D.

Professor of Pediatrics, University of California, Los Angeles, Cal.

Celiotomy in a Child Three Hours Old. In the American Journal of Surgery for March, 1913, is an article by Q. W. . . . . . of Louisville on Celiotomy in infancy and childhood. The youngest child operated on as reported by the writer is a babe of one day operated on for hemorrhage of the umbilical artery. The operation was done without an anesthetic and was successful. The exceeding rarity of such operations leads us to report the following case. The child was born at 6 a.m. after a rather protracted but normal labor, attended by Dr. Brooks. At the birth it was observed that a tumor about two and one-half inches by a possible three inches was present at the umbilicus of the baby. Closer observation disclosed that this consisted of a portion of the intestines protruding through the umbilicus and covered with the peritoneum only. At the upper part of this tumor and connected with it was a sausage like tumor the size of the adult thumb, and four or five inches long. At 9 o'clock a.m., or when the child was three hours old, it was prepared for operation. No anesthetic was given. The peritoneum covering the intestines was slit up when it was readily seen that the sausage like tumor was the transverse colon and the small intestines were crowded into it (invagination). To all appearances the transverse colon had been forced through the umbilical opening and was adherent at this point. As the pressure from within continued the small intestines were forced up against the other gut and finally made way through. As the coil of intestines was drawn out a hole that would admit the end of the thumb was apparent in the colon.

This opening in the large bowel was closed with catgut. The child had cried but very little up to this time, but sufficient straining had occurred to force about half the intestines outside the body. In order to return these the abdomen was opened three or more inches and to successfully close the rupture through the umbilicus the latter was removed. The opening in the abdomen was closed with through and through silk worm gut sutures. The child had a stormy time for a day or two, but thought better of the world and concluded to live. At the present time it seems in a normal condition, the bowels functioning properly.

We believe this the youngest infant (three hours) upon which a successful celiotomy has been done. As this operation included the reduction of an invaginated bowel and a suturing of the intestine as well we think it worthy of being recorded. It might be interesting to state in connection with the possible cause, that the mother was laced down to the very lowest notch up to the very time of delivery. The child was near maturity if not quite to the 280th day.—A. B. Anderson and Earl B. Brooks, in West. Med. Review.


The author cites his own experiences and among the complications were the following: Hemorrhage. He feels that an error in technic and accidents are more frequently the cause of this complication than hemophilia. He states that there is less danger when the operation is performed by finger enucleation. Hyperpyrexia without known cause is sometimes a complication. We should not be unprepared to have a case with this complication end fatally. Wishart reports a case of a young girl, who, after the operation, had a temperature rising to 107 degrees and who died twelve hours after the opera-
tion. The author had a similar case in a child of four who died a few hours after the operation. He has had two cases result in infarct of the lung, one in a man 45 years of age, who, six days after the operation, ran a septic temperature with a constant cough, and complained of great pain in the base of his right lung. Some weeks later an abscess developed and an operation was performed with a favorable result. The other case was a young woman of twenty-four. Ten days after the operation she developed a severe cough and later expectorated large quantities of pus. This case recovered with the administration of hexamethylenamia.

Mild sepsis enduring for a few days is a frequent complication of tonsillectomy. Sonntag reports a case developing torticollis with swelling of the knee and right wrist, death occurring from general infection. Dean has reported three cases, one dying of general sepsis; a second was a case of cerebral thrombosis with recovery, which did not manifest itself until fifteen days after the operation.

Emphysema is rather a rare complication. One case is reported by Parrish and the author had a mild case develop in his practice. Pneumonia and pleurisy as sequelae are not usually reported but there is a sufficient number of cases to indicate that such complications do occur. The author had two cases of pleurisy, which recovered, and one case of pneumonia. Coley reports three cases of septic infection of the serous membranes and Putnam has seen two cases of meningitis. Among other complications may be mentioned disturbance of the nervous system, status lymphaticus, a dermal rash appearing a few days after operation and local disturbances such as edema, hemotoma, abscess, torticollis, injuries to the surrounding parts, especially the uvula, and infection of the middle ear and of the cervical glands.

An Operation for Flat Foot.—W. P. Carr Medical Review feels justified in reporting the technic of an operation for flat foot after a most satisfactory result on an extreme case. A curved incision three inches long is made behind the outer malleolus down to the os calcis, which is easily exposed by slight dissection, and divided close to the ankle joint with a modified Wyeth saw. The divided posterior part of the os calcis is now slipped down about three-fourths of an inch (if, however, there is any difficulty with this the tendo Achilles should be obliquely divided and lengthened, which can be readily done through the same incision used for sawing the bone). The sawed bone is now nailed in its new position, through a half inch incision over the heel with an ordinary wire nail, two and a half inches long. The improvement in the shape of the foot is noticeable at once. Both feet are put in extension in plaster for one month. Walking is allowed at the sixth week. In the author's case the nails were removed at the end of the fifth month because they were causing pressure on the shoes.

Occlusion of the Esophagus in Infancy.—Dr. Thomas Morgan Rotch reported three cases of occlusion of the esophagus in early life not due to trauma—West. Medical Review. Two were in his opinion, congenital with organic construction and the third was spasmotic. In this case the spasm was twice brought on by foreign bodies, once a quarter and the second time a piece of bristle.

The first, age 25 months, died, as the stricture was too small to dilate. The other two made good recoveries after passing the esophagoscope and dilating the stricture in one, and overcoming the spasm and removing the foreign bodies in the other. Dr. Rotch suggests that the spasmotic cases were possibly due to a congenital condition of a brain center represented by a lack of inhibition.

Hair-ball Removed from Stomach of a Child.—An unusual cause of gastric disturbance is illustrated by a case reported by S. Barling (Proc. Roy. Soc. Med. 1913, vi. 171). A girl seven years of age was admitted for vomiting and severe pain in the upper abdomen of two
days' duration. Since an attack of dysentery four and a half years before she had been in the habit of chewing up pieces of string, tape, etc., and occasionally fragments of such things had been found in the motion. Her appetite was good up to ten days before the time she was taken ill, food being taken in normal quantity and without discomfort. On examination a hard lump exactly resembling the outline of the stomach could be felt descending from beneath the left costal arch, and passing transversely across the epigastrium. The outline of the tumor together with the history led to a correct diagnosis. The specimen was easily removed through a longitudinal incision into the anterior wall of the stomach about 3 in. long. The opening in the stomach was closed by a double layer of sutures, and the child made an uneventful recovery. The specimen consisted of a felted mass of hair and string, the former predominating; it presented an exact cast of the stomach.

Six cases of hydrocele in infants treated by operation (Brit. Med. Journ., 1913, i, p 384).—J. H. Nicoll describes the operation, which can be carried out in the out-patient department of a hospital. No local preparation was done until the child was anaesthetised. A skin incision (1 to 1½ inches) is made just above the groin over the inguinal canal and the spermatic cord exposed just below the ring. The testicle and hydrocele are pushed up into the wound, and the upper end of the hydrocele sac exposed by a few snips of the scissors. The exposed sac is then emptied by trocar and cannula. The collapsed sac with the testicle is then pulled out of the wound, and the sac dealt with—either by tearing out its internal serous lining, by complete excision, or by bisection and suture of its halves back to back behind the testicle. Replacement of the testicle in the scrotum and suture of the wound in the groin complete the operation. The dressing is a pad of sterile gauze fitted by a strip of adhesive plaster. The children are then taken home by their mothers and brought back in a week for removal of dressings and sutures. An excellent plate in illustration of the method is included.

Appendicitis in the infant ('Journ. de med. de Paris,' 1912, xxxii, p. 916).—Perrin quotes four cases in infants under five years of age. The lesions were always very grave; in three cases there was diffuse peritonitis or multiple abscesses. The symptoms vary much. Sometimes vomiting is the first sign, then abdominal pain and distension and signs of general peritonitis. Sometimes the disease sets in with preliminary constipation followed by abdominal pains and vomiting. Sometimes an habitually constipated infant has vomiting and headache and loses appetite, and after a fortnight or so has bilious vomiting and abdominal pain. More rarely the onset is abrupt, with pains in the right iliac fossa vomiting, etc., as in other children. A history of preceding constipation followed by vomiting, and later, abdominal pain, is most characteristic. The great danger is rapid general peritonitis, and broncho-pneumonia is a frequent complication. The diagnosis is difficult; gastro-enteritis, intussusception and pneumococcal peritonitis must be excluded. Immediate operation is imperative, and many apparently moribund infants stand it well.
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INFLUENZA IN CHILDREN

Taking into consideration the prevalence of influenza, and the high rate of mortality therefrom among children, it seems somewhat curious that more attention is not paid to it as a complaint of childhood. The hospital says that one-fourth of all influenza cases occur among the young, and that the mortality reaches the high figure of about 30 per cent. When a child has an attack of influenza the process is as a rule much less sudden than a case with adults. It becomes gradually dull, apathetic and weak, with accompanying catarrhal symptoms. The children most frequently affected are those from two to ten years of age. The initial stage begins with an atypical fever and with tendency to rigors. Sometimes there are nasopharyngeal catarrh, dyspnea, frequently infection of the conjunctiva and copious secretion of tears; with older children headache, convulsions and sleepiness, constipation in common. As with the adult, the complications and sequelae of influenza are most to be dreaded. Capillary bronchitis is one of the most frequent, often followed by pneumonia, pulmonary edema or cardiac weakness. It is believed that the specific cause of influenza has been found in the secretion of the mucus membrane but no specific remedy against the micro-organism has yet been discovered. Dr. L. Fuerst, Berlin (Medical Zeitung), says since the larger epidemic of 1889-1890 and its re-appearance during the past few years, the knowledge of the specific germ, the various forms and complications as well as the estimation of its prognosis, has attained a higher standard. This, at first generally believed harmless sickness, but later observed, a dangerous disease, has in a similar manner been carefully studied and improved. Experience has taught us that during these epidemics more attention must be paid to
the catarrhs of the respiratory tract so often complicating this
disease, because we are at first unable to decide whether this
complication is due to an infectious catarrh or the beginning
stage of influenza. It is said that the epidemic which is now
raging in many parts of Europe differs in its character from
those of previous years. The fact that the disease may present
at least three distinctive types has long been recognized. Some-
times it attacks most severely the respiratory, sometime the
nervous, and sometimes the digestive system. The present
epidemic is remarkable for the very large proportion of cases,
which shows symptoms of profound disturbance of the diges-
tive system.

RHEUMATIC HEART DISEASE IN CHILDREN

The most valuable contribution to the section on children's
disease, B. M. A., was that of Dr. David Lees, dealing with the
above subject. After pointing out that disease of the heart
among children is in the majority of instances due to rheuma-
tism and after referring to the great mortality among chil-
dren as compared with adults from this disease, Dr. Lees pro-
ceeded to touch upon the question of dilatation, which he maintai-
ted was usually present in sub-acute first attacks, even when
pyrexia was slight and arthritis not present. Fatal results
were not due to effusion into the pericardium nor to endocard-
itis. These conditions seem to affect the mortality very little,
but plastic pericarditis and dilatation played a very important
part in the fatal result. Dr. Osler thought it was important
to guard against repeated attacks of rheumatism. Dr. Ewart
contended that in dilatation fluid was very present, and Pro-
fessor Baginsky drew attention to the immense size of the heart
in some of these cases of dilatation. In the Edinburgh Medical
Journal of a recent date Dr. F. Broadbent contributed an able
article on rheumatism in children, in which he shows that in
childhood and early adolescence rheumatism in its manifesta-
tions takes a different course from the same disease occurring
in adults; in childhood and youth the articular manifestations
are slight, but in spite of any marked symptoms the heart
rarely escapes, and owing to the insidious nature of the inflam-
matory process irreparable damage may be done before the se-
verity of the cardiac symptoms compels the patient to seek
medical aid or take the bed. According to Dr. Sturges it is
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exceptional for the victim of endocarditis to escape pericarditis, and eventually within from six weeks to three months one of three things will happen. (1) The area of cardiac dullness may increase till it is nearly normal in extent, indicating that the heart has approximately gained its normal size, in which case a satisfactory recovery may be anticipated. (2) The area of cardiac dullness may remain permanently enlarged though the patient has become convalescent, in which case it is probable that universal adherence of the pericardium to the heart is taking place, and though the patient recovers the heart will be permanently crippled. (3) The case of cardiac dullness may still further increase, the liver become enlarged, and dropsy set in, and the patient will die with all the symptoms of right ventricle failure. Dr. Broadbent remarks with regard to treatment of rheumatic affections of the heart in children, various local applications, such as ice bags, leeches, and blisters over the precordial area have been advocated, and according to Dr. Lees it is best to limit the amount of cardiac dilatation. Administration of salicylates is of a doubtful benefit and perhaps the most useful remedy is quinine and bicarbonate of potash. Nothing, however, does much good, it is therefore most important that any indications of danger threatening the heart should be early recognized and guarded against. When any symptom of coming heart trouble is detected, the first steps that should be taken is to prescribe absolute rest.

THE TRAINING OF EPILEPTIC AND DEFECTIVE CHILDREN

This is a subject that has been the occasion for much thought on the part of philanthropists and physicians all over the civilized world. It is now generally acknowledged that the practice usually followed of educating these mentally deficient children with and on the same lines as those who are normal is a wrong one in many ways.

An inquiry has recently been made in Great Britain as to the number of epileptic children attending school and also with the object of devising efficient and humane means of educating them. The information of epileptic children attending school is only about one per cent. of the total. This, of course, excludes epileptic idiots. It is suggested by the British
Medical Journal that there are two sources of possible error in this estimate of the frequency of epilepsy among children in the elementary school class; the one that some parents try to conceal their epileptic children, and the other that children who have fits at home are sometimes free from them at school. The last fact is instructive as showing that education under proper conditions may be a useful factor in the ameliorative treatment of juvenile epilepsy. That a rational system is needed of treating children who are deficient in mental organization is certain. In many instances, with judicious care and training, they will develop into fairly useful members of society. Up to the present time they have hardly been afforded the opportunity to improve, but being left for the most part to themselves have gone to swell the ranks of paupers and mendicants. One of the chief difficulties to be overcome in dealing with feeble-minded children is that of differentiating between slow development and imbecility. For this reason the British Committee wisely recommended that no child shall be classed as feeble-minded before the age of seven years. After that age and whether it has been demonstrated without a doubt that the child is defective admission into a special school may be asked on behalf of the child where up to that time he has been trained. The plan proposed in regard to these special schools is not to crowd the children together in large institutions, but rather to erect for the purpose, small buildings in healthy parts of the country. The fact is recognized that an epileptic child, should lead a simple, regular life, as much as possible out of doors, away from the excitement of a great city or from associations with many children; in short, the nervous system should be kept as quiet as the means at hand will allow. As Dr. Holt remarks, "The education of epileptic children is a subject of great difficulty and is often neglected. There are many reasons why it is impracticable to send them to ordinary schools, and it is very desirable that special schools for them should be established." Dr. Warner says, "No sharp line of demonstration can be drawn between the children feebly gifted and imbeciles on the one hand, and as differentiating them from children simply dull and backward on the other. For practical purposes I think there should be two reports on such a child; one as to mental status, character and habits, prepared by a teacher, with evidence from the parents; the other by an expert, giving a physical description of a child as he sees him. Two
conditions of health may improve as the children increase in age, but to prevent mental dullness continuing, the fact should be recognized early in life, and the children trained accordingly. Too much stress cannot be laid on the beneficial effects of out-door occupation.

Idleness is more harmful to the mentally deficient child than work, that is work within reasonable limits.

EDUCATION AND HEALTH OF GIRLS

Much is said about the girl returning from school or college in a bad state of health and sadly in need of vacation. Little is said of the girl who grows robust while in school. The former is all too commonly heard; the latter, too seldom. Education, if it is worth being called education, conduces to good health. This is not yet freely admitted, but some day it will be. There was never a time when learning things that had been written was better than being well.

Our systems of feminine education have not yet reached a point in their development when they have much to offer beyond a knowledge of certain more or less useful, or useless, facts and theories. The educating process to which the modern college girl is subjected is not so much directed to make her efficient, observant, original, resourceful, self reliant and thoughtful, as it is to make others think that she is. And while she is learning the merits of Paradise Lost, the intrigues of the English kings, the names of the several members of the family of Stuart, the ramifications of the Greek verbs, the distinctions between the Elizabethan and the Lake School of poetry, and the psychology of impulses, too often the roses are perishing from her cheeks and her eyes are taking on the dreamy, far-away look of neurotic culture.

Herbert Spencer wisely suggested that should we suddenly become an extinct race, and should some future historian find the school books used by our young women, he would think that he had discovered a race of celibates who were interested in everything but their own lives and happiness. The fact that between forty and fifty per cent. of the women admitted to hospitals for the insane in New York State belong to the class which is spoken of as "well educated," cannot in itself be taken as a reflection upon the work of the schools; but it does indicate that something is wrong with their manner of life to
bring them to this unfortunate state; and while we cannot say that stress of study is an etiological factor, we can say that their education should have been more in the lines of helping them to a state of harmony with their environment, for want of which they have become deranged, and that they have frittered away precious study days in chasing the silly baubles of classic culture. If after leaving school, young women indulge in practises which are injurious to health, and therefore to happiness, it is quite evident that they have not learned the best things. The appreciation of the best things in life is happily growing; but unconscionably slowly. A few lectures on hygiene—how to ventilate a room, the harm of tight lacing, the value of sleep, the importance of discretion in diet, and kindred subjects will not make school girls healthy. Self-preservation and perpetuation is a bigger subject than primary hygiene. It involves all of the functions of the mind as well as the body. It involves all of the day of work and play and sleep. It is the most important thing for young women to study; but in our schools and colleges it is as yet imperfectly grasped. When we begin to educate young women in the vital things of life many of the difficult social problems will be answered, and we shall not find so much that is pertinent in the questions—What shall we do with our girls? Why do American mothers fail? It is actually true that girls in our schools listen to instructors prate of the infinite when their grasp of the finite is so meager that if they were cast away on a desert island they would perish of hunger and thirst in the midst of plenty. There is much that answers to name of education, which, instead of preparing young women for life is contributing to their undoing.

The one line in which they are least learned is that of natural science, which deals with the things that surround us and which are known. Its pursuit is the most profitable and cultivating. It helps the mind and the body; and so long as it continues to be slighted young women will lack salutary education. It is the one line of study that will save their health and preserve them from the pitfall of mysticism and the cults of mental obliquity.
ACUTE PERFORATING SIGMOIDITIS IN CHILDREN*

BY JOSEPH RANSOHOFF, M.D., F.R.C.S. (ENG.)
Professor of Surgery, University of Cincinnati

Although our knowledge of acute and chronic inflammations of the sigmoid as distinct surgical entities dates back less than twenty years, case reports have been so numerous that to present another to the association would be without justification, unless it presented some unusual features. In nearly all cases, at least in adults, the immediate cause if the acute inflammation is an obstructed diverticulum which shows a priori that an acute process has been grafted on a chronic one. In the majority of cases the chronic process which leads to diverticulation does not make itself manifest until obstructive symptoms arise or until a gross perforation or a pericolic infection through a still unbroken but permeable wall takes place. How innocuous a chronic diverticulitis may seem is shown by the case of Brewer¹ in which two operations, six years apart, were performed on a patient who seemed perfectly well in the interval. This latency of a condition potential of great disaster is a not unimportant one of the many points of analogy between inflammatory conditions of the two lower abdominal quadrants. That an analogy, one might almost say an identity, of the sequences of the pathologic process in the appendix and the sigmoid diverticulitis exists may be assumed as absolute, although according to Powers² hardly more than a dozen cases of acute diverticulitis operatively treated have been reported.

In a negative way the analogy might be continued, for as suppuration in the right lower quadrant may originate in the intestine independently of the appendix, so I take it that in more frequent instances will suppuration about the sigmoid colon develop without a diverticulum as the primary cause. All the reported cases of diverticulitis which I have been enabled

*Annals of Surgery, August, 1913
to examine have been in adults, mostly in males in mid-life and given to obesity. It is almost impossible to conceive of an acquired diverticulum in a child, wherefore, I have designated the following case one of perforating sigmoiditis.

Case 1. R. H., aged three years, male. Was admitted to Jewish Hospital at 8 P. M., October 22, 1913. During seven days before his admission he had been under the observation of Dr. Bird, of Greensburg, Ind., to whom I am indebted for the following history. While in the hospital Dr. Rachford was the consultant.

Family History. Father had tuberculous of knee, mother had tuberculous glands of the neck up to her fifteenth year. Two older children had always been well. The child had always been well save for a marked tendency to constipation.

The present illness being as a slight indisposition with loss of appetite and marked constipation, this was attributed by the mother to her failure to pasteurise the milk as had been her custom up to the onset of the present illness. The evening temperature was 100 and pulse rate between 90 and 100. Constipation was the marked symptom, which the exhibition of castor oil and saturated solution of magnesium sulphate together with high enemata failed to effect. The highest temperature recorded up to the fourth day was 101. Satisfactory examination of the abdomen could not be made since any effort to make it brought forth violent crying spells. On the fourth day alboline was given in dram and later in half teaspoonful doses. This seemed effective for on the fifth day a small stool from the upper bowel was passed. Altogether eleven ounces of alboline had been given. On the sixth day there developed a very sharp attack of abdominal pain, which lasted more than an hour. This was followed by attacks of vomiting. There also developed a marked distention, of the abdomen and the temperature rose to 103. There were no further stools, nor was there any discharge of any kind from the rectum.

Condition on Admission. The patient presented the general appearance of suffering. He frequently cried out with pain. The temperature is 109, pulse 132. Abdomen is distended. The costal arches cannot be seen. On percussion there is a general tympany with liver dullness somewhat pushed up. Although there is a general muscular rigidity no special tenderness can be elicited. The examination is very unsatisfactory by reason of the child’s resisting. Urinalysis negative.
ACUTE PERFORATING SIGMOIDITIS

Blood Examination. White 15,800—polymorph. 53.11, small mononuclears 26.09, large mononuclears 20.09, eosinophiles 0.71.

An X-ray picture taken after the injection of a bismuth meal shows no intestinal occlusion, but a general gaseous distention. Digital examination of the rectum indicates some resistance on the left side of the pelvis, but it is not very distinct. Within the next few days the patient’s condition did not improve. There was occasional vomiting of biliary matter, but no stool was passed. The blood count, October 23, was only 11,800 white. On October 24, it had risen to 22,000 and on the morning of the 25th to 33,000. At this time the rectal examination showed a distinct infiltration on the left side of the pelvis. It was then only that consent for operation was obtained.

Provisional Diagnosis. Appendicitis with left sided pelvic abscess.

Operation. Jewish Hospital, October 25, 1912. Gas oxygen anaesthesia. When relaxation was obtained a very decided induration was observed for the first time in the lower left quadrant, wherefore, a pararectal incision was made on the left side.

On opening the peritoneum a slight amount of clear fluid escaped. The intestines were moderately distended. A mass on the left side contained the sigmoid with adherent overlying omentum. The latter was gently separated from the underlying intestine, whereby an abscess containing two or three ounces of very fetid pus was opened. The greater part of the purulent accumulation came from the left side of the pelvis. On widely retracting the wound margins and gently separating the omentum the entire sigmoid was exposed. For about three inches the walls were very much reddened, thickened and indurated. The entire mass was fixed on the iliac pan. The tineae could not be made out, but a number of appendices were exposed. Except for these the surface of the sigmoid was uniform. There was no evidence of diverticulation. At the summit of the sigmoid loop there was a necrotic area as large as the little finger nail, which extended deeply into the intestinal wall. No effort was made, of course, to see whether it communicated with the imminent. The area was inverted, fixed with a few Lembert sutures and covered with omentum. The operation was completed by a deep-seated cigarette drain.

The
post-operative course was rather a stormy one. Two days after the operation there were two bloody stools. The leucocytosis gradually subsided and with it the temperature. The latter, however, did not reach normal until the eleventh day. The patient left the hospital on the twenty-first day in practically normal condition.

A second case of suppurating perisigmoiditis in an infant was referred to me by Dr. Rachford.

Case 2. The patient, a female of nine months, had for several months suffered on and off from enterocolitis. It was a bottle-fed child. When brought to this city from its home in Lafayette, the patient was greatly emaciated and had evening temperature of 102. The stools frequent and small were occasionally blood-stained and there was always great rectal tenesmus. There had been no vomiting. The abdomen was slightly distended and in the lower left quadrant an indistinct swelling as large as a peach could be mapped out. It was very tender and seemingly fluctuating.

Operation. Good Samaritan Annex, December 1, 1912, under chloroform anaesthesia, revealed no peritoneal involvement, but an abscess in the sigmoid-mesocolon. About three ounces of not fetid pus escaped. The abscess being well walled off the sigmoid was not looked for. Drainage was instituted and the patient made a slow but complete recovery.

The first of the above cases seems unique to me, for after a rather complete investigation of the literature of sigmoiditis I have found no similar case. Griffin, in a report of twenty-seven chronic cases, places the average age of diverticulitis at a little less than fifty-four years. Of one hundred and five cases of intestinal diverticulum cited by Telling there was only one occurring at the ages of seven years, six years and ten years under forty years old. Hartwell, it is true, conceded three cases respectively. The last two cases were obtained by autopsy. The diverticula were congenital and had nothing to do with the cause of death.

In the first case reported by Ashurst, the patient was operated upon and a mass found in the mesosigmoid. Ashurst, himself is in doubt as to the existence of a diverticulum in the mesenteric attachment of the gut as the primary cause of the swelling in the mesosigmoid. Therefore, he concedes that his diagnosis of mesosigmoiditis is conjectural. Another case of suppurating diverticulitis in a child which is often quoted is
that of Walcha. The patient, a ten-year-old girl, had passed a round worm two days before the onset of the symptoms. An abscess formed on the left side of the abdomen and the child died on the sixth day, evidently from peritonitis. There was no autopsy and there is no reason for believing that this was a case of diverticulitis.

It is probable that in the second case above reported we had to deal with a lymphangitis, which resulted in abscess from infection through an intact intestinal wall or a lymphadenitis from the same cause. When one considers the wealth of lymphatics in the intestinal wall and the frequency of infections of the intestinal mucosa, it is really remarkable that intramesenteric suppurations (of the nature of the case reported) are not more common.

If we except the doubtful case of Ashhurst as the only one operated on for diverticulitis in a child, there is no recorded case. In the two cases of sigmoid diverticulum discovered by autopsy in children by Hartwell, there were no clinical evidences of the condition. In an examination of five infants who had died from various infantile diseases Hartwell and Cecil found that in three there were some evidence of a weakness at one or more points. In each of the positive cases there occurred a slight outpushing of the wall of the intestine, which had somewhat the microscopic appearance of the small diverticula seen in adults.

The examinations were made after the colons had been moderately hardened in formalin and then filled with water just sufficient to render the walls taut not under enough pressure to stretch them.

These experiments appear to me inconclusive in view of the fact that no demonstrated case of acute diverticulitis in infancy or childhood has, to my knowledge, been recorded. Diverticula, it is true, may be almost microscopic and it is of course possible that such a diverticulum might have been the predisposing cause of the acute symptoms which necessitated operation in Case 1. In a very comprehensive and analytical article by Patel, he states, "Perhaps some day we will be enabled to state that almost all the cases described under the name of sygmoiditis are cases of diverticulitis, precisely as appendicitis little by little has been substituted for typhlitis." This inference does not seem to be justified for the one perhaps important reason, namely, that on the right side we always have
the appendix and that on the left side the presence of a diverticulum can only be assumed until its presence is actually demonstrated by operation or autopsy.

The first case above reported seems to me conclusive that a primary inflammation may develop in the mucosa of the sigmoid, invade the deeper layers of the gut, and lead to necrosis and abscess formation without gross diverticulation as the basal factor.

In the second case there was no certainty even of the involvement of the sigmoid, although the previous history indicated some form of colic infection. In the classification of inflammatory lesions about the sigmoid based on an analysis of seventy cases, Patel classifies seventeen of them under the caption of non-suppurative sigmoiditis. All the cases recovered without operation, so that no evidence was obtained as to the exact anatomic charges which caused the tumor mass as one of the clinical symptoms. Most of these occurred in young subjects and only two of them were over forty. This is in marked contrast with the age history of acute or, for that matter, chronic diverticulitis which come to either operation or autopsy. The findings at operation in cases as far as the induration, infiltration and fixation of the sigmoid are concerned are very much like those encountered in the case recently reported by Dowd. Here, however, the influence involved the descending colon from the splenic flexure quite to the sigmoid. It was found to be red and hard and the walls so thickened that it seemed almost a solid mass and the consistency was nearer that of a garden hose than that of the normal intestine. The microscopic examination revealed great purulent exudate replacing the mucosa in most places. Had it been possible in Case 1 to obtain a section of the thickened sigmoid, I am quite certain that the picture would have been the counterpart of Dowd's case.

That sigmoiditis is a clearly defined morbid entity has been established since the articles published for Mayo, Matthews, Rosenheim, and Durant in 1893, 1902, and 1911 respectively. The important factor of the diverticulum, of which the significance was later recognized, has threatened to overshadow the sigmoiditis unassociated therewith. Of course, the acute process when limited to the mucosa is often but a part of a colic infection of the sigmoid, but by reason of the position and function of the sigmoid manifests itself there with greater
severity. It may be necessary only to recall that the fecal contents stagnate before their final expulsion and the time and opportunity for infection are perhaps greater than anywhere else, with the exception of the caecum. That the effect in the long run is more baneful to the sigmoid is simply shown by the foreshadowing preponderance in the sigmoid of the chronic diverticulitis with its well-established train of symptoms.

Although two cases of left-sided lower quadrant intraabdominal suppuration in children are scarcely enough to be statistically valuable, when considered with the hitherto published reports submitting the following conclusions:

1. Although few cases of sigmoid diverticulation have been found in children, no cases of diverticulitis have been recorded in a child.

2. To designate in a general way, as is the present tendency, all the left-sided lower quadrant suppurations as of diverticular origin is not warranted by the facts. Unless a diverticulum is shown, the diagnosis must be problematical. This applies of course, very much more to children than to adults in whom all the recorded cases have occurred.

3. Left-sided appendicitis cases have been described with and without visceral transposition.

4. It has been my object to underrate the importance of the sigmoid diverticulum as the cause of left-sided abdominal suppurations, but to call attention to other conditions notably of the mucosa producing them and particularly in children.

"TIC" IN CHILDREN*

BY PHILIP F. BARBOUR, A.M., M.D.
Professor of Pediatrics in the University of Louisville, Medical Department, etc., Louisville, Kentucky.

The three patients to be presented today illustrate different varieties of the same disorder: The first, a little girl aged nine, exhibits the most noticeable symptoms, and if closely observed it will be seen that every few minutes she moves her head from side to side with a quick motion. When her attention is attracted, especially if asked to watch some object, her

*Clinical Lecture delivered before the senior class of the University of Louisville, Medical Department, at the Louisville City Hospital.
head remains in a perfectly normal position for a considerable time.

In this case the diagnosis of chorea has been made, but by careful observation of the movements exhibited differential diagnosis is not difficult. It will be noted when her tongue is protruded it is held perfectly still, it presents no abnormality in appearance and she has perfect control over its movements. The tongue indicates a fairly normal condition of the alimentary tract. At this juncture I will ask her to shake hands with two or three of you, and squeeze your hands. When she does so it will be noticed contraction is firm and persistent, there being no irregularity in the grip nor is there any failure in co-ordination as she reaches to grasp your hand; and when asked to go through the movements voluntarily which she appears to be doing involuntarily, she moves her head from side to side with perfect rhythm and regularity.

We have now tested three groups of voluntary muscular actions: (a) movements of the head, (b) movements of the tongue, (c) movements of the head, and in all there is perfect co-ordination. If this were chorea the tongue would be protruded in an irregular and uncertain manner, it would probably be drawn into the mouth quickly without apparent control; had she gripped your hand you would have felt contractions and relaxations quickly following each other, or perhaps she would have been unable to grasp your hand with hers; and there would be an exaggerated jerking of the head.

Here, then, is a condition which in some respects simulates chorea, but on closer analysis the differences are obvious and irreconcilable. One factor which might complicate the diagnosis is that this girl also has rheumatism, which is a constant predisposing cause of chorea. It is so frequently associated with or an aftermath of chorea that there must be an intimate etiological relationship between the two. However, the symptoms which this child presents are easily differentiated from chorea, notwithstanding the complicating history of rheumatism.

In the other two cases, which you have had an opportunity of observing, during the remarks thus far made, analogous symptoms are presented. However, the movements which these children exhibit are produced by a different set of muscles although similar in their inherent nature.

I wish to say a few words in regard to the second child, a boy,
before further discussing the nature of the disorder. It will be observed when he fixes his eyes upward and toward the left, there is a slow rhythmical side to side movement of his face, i.e., when looking upward and to the left his face slowly moved sidewise as if on an axis. This boy undoubtedly suffers from the same general condition as the little girl, but his symptoms are not unlike those observed in morbus pauperi. Knoepfelmacher, of Vienna, showed us several interesting cases of this character, and explained that the disorder occurred in children a year or thereabouts in age who had been kept in a room with only a small window to afford light. He concluded that the condition was due to the effort of the child to fix its eyes upon the one small ray of light which came into the room. It naturally occurs only among the very poor in the most densely crowded tenement districts.

The third child presents still another variety of the disorder under consideration, in that the face is grimaced. Every now and then there will be noted a squinting of his eyes, a knitting of the forehead and twiching of the facial muscles. I have had numerous arguments with eye, ear, nose and throat specialists concerning the relationship between local irritation and this form of tic. So frequently have cures followed operations which relieved the irritation that it appears this class of tic should be referred to the specialist for treatment. They have always maintained, however, that the basic factor was a neuropathic substratum. Whether this be true or otherwise, when the contractions are localized and limited, one should persist in the attempt to remove local sources of disturbance and may thereafter utilize any general tonic which may seem indicated.

These three cases are submitted as varieties of the one disorder briefly known as "tic" and in describing the condition attention has been called to the difference between it and chorea. It must be remembered that in chorea there is inability to co-ordinate the muscles for a specific purpose; in tic there is co-ordination of the muscles to produce certain results, but co-ordination is repeated until it becomes impulsive rather than volitional.

When this little girl is asked to hold her head still, she is able to control the movements of her head; but in a short while the desire to move her head becomes irresistible, and she feels she must do so to satisfy that imperative desire. In this
PHILIP F. BARBOUR, A.M., M.D.,

respect the basic factor of the disorder markedly differs from chorea, and it assumes a type of obsession, or perhaps borders on some phenomena of alienation, in that the child is unable to resist this desire which becomes impulsive and imperative.

The nature of this disorder removes it from the category of ordinary physical affections or lesions, and places it within the realm of psychical defects. The ordinary methods of treatment usually prove ineffectual in these cases, because of the difficulty of applying remedies to psychical states. These children have established a habit of co-ordinating certain muscles for some purpose, what that original purpose may be is difficult to discover. Sometimes it arises from itching or inflammation of the eyelid which causes contraction of the orbicularis palpebraum and other muscles about the eye. When continued for a certain length of time, even if the causative itching or conjunctivitis be relieved, the habit may continue.

Other varieties of irritation about the head and neck may induce similar results, e. g., the wearing of a tight collar which rubs the neck may induce a shrugging movement to get rid of the irritation. This may gradually develop into a permanent habit, provided the movements be continued until they become extra-volitional. The patient is unconscious of the movement, as it has passed beyond the point of volition.

A theory which seems to explain this condition is that habits which have become established are functions of the (so called) subcortical brain. To illustrate: When you leave here to go home, you will proceed down the steps to the street, you will cross the gutters, dodging street cars and automobiles, and will reach home in safety, but without your having in the course of your walk thought actively about where you were going to place your feet next. Your conscious brain starts you toward a certain point, and then delegates to the subcortical brain the management of your feet, arms and body to carry you to that point. Perhaps a better illustration is: Those of you who are musicians have doubtless observed in trying to play an old piece of music, one which you have not played for years, after you started, your fingers will find the next chord without your attempting volitionally to arrange the fingers in position for that chord. This is now decided to be the work of the subcortical brain.

Time will not permit reviewing the interesting phenomena associated with modern ideas of the subcortical functions, but
in connection with the cases exhibited I desire to concur in the hypothesis that the movements have really become habits of the subcortical brain, and to that extent are removed from the realm of the volition. Prof. Patrick, of Chicago, who first announced this theory, has suggested a most rational treatment applicable to such cases, i. e., that the movements be again made volitional, be brought from their submersion in the subcortical brain into the realm of the volitional or conscious brain. Therefore, while these children may not offer a very hopeful intelligence, they will be treated along this line; that is, instead of trying to repress these movements, they are to be practiced volitionally and purposefully. In the case of the little girl, for instance, whenever the desire for the movement is evinced, she will carry it out through her own volition, and thus instead of remaining an unconscious habit it will be lifted into the realm where she thinks about the movements she makes. As an illustration: If one of you make a grammatical error, e. g., saying "seen" for "saw," if every time you use the word "seen" you stop and correct it for "saw," it will not be very long before this result of unconscious cerebration will become changed into conscious effort, and the words saw and seen will be properly utilized. On the other hand, if you are unconscious of having made a mistake, you will never learn to correct it; when you become conscious of it and raise it from the unconscious sphere into the sphere of conscious activity, you are then in a position to correct it.

It is difficult to explain these psychical phenomena to the class of people represented by the children before us so as to secure the result desired. The application of the theory mentioned to every case will be exceedingly difficult, as the intelligence of the patient must be considered. However, this theory offers a more plausible, scientific, physiologic treatment than any hitherto suggested. Of course in these cases it is important to combat predisposing conditions, and remove the cause where possible—to give general tonics, improve hygienic and sanitary surroundings, etc., to secure the best physical results.

In conclusion I desire to state that the management of cases of this kind has always been most difficult, and no treatment offers very optimistic results. The method mentioned seems to offer the most favorable outcome, since by other measures no improvement has been accomplished in the majority of cases.
Pyruia, or pus in the urine occurs in diseases of the kidney, bladder, and other organic diseases. The term pyruia therefore must be regarded as a general one only. It was selected as the title for this paper in order that correlated conditions might be discussed with propriety, if so desired. I shall confine myself, however, to one particular condition of pyruia, to which the term "acute pyelitis" is usually applied.

During the past two years nineteen cases of acute pyelitis have come under my observation. Some occurred in my private practice, but the greater number were seen in consultation with other physicians. All of these patients were females, ranging from seven and a half months to eight years of age.

This affection seems to be unknown to many practitioners, is therefore frequently overlooked and apt to cause considerable anxiety to the physician, relatives and attendants of the patient.

Acute pyelitis may occur as a primary disease, but in many instances it is secondary to gastro-intestinal disorders, influenza, and various other infectious diseases. In the series of cases to which I refer, five occurred in connection with gastro-intestinal disorders, six followed influenza, two were attributed to vaccination by the relatives, in the other no particular antecedent disease occurred.

It is generally believed that the bacillis coli communis is the causative agent in the production of this disease and in four cases this organism was found, but in others the specific micro-organism could not be accurately determined.

Acute pyelitis occurring in very young children is remarkable for its lack of distinctive features. The clinical picture may be described in a few words. A baby girl is ill with a very high temperature with nothing whatever to explain the fever until the urine is examined and pus is found.

The temperature is usually high and irregular, but without much prostration to the patient. In one case the fever ranged from 103 to 106 degrees for almost three weeks with little or no prostration and a loss in weight of only one pound.

In almost all cases the temperature was of a remittent type. In some it was of a remittent-intermittent type, while in
others it was a continually prolonged high temperature. These charts fairly represent all cases.

The duration of the fever in all acute cases was from three to six weeks. Chills, convulsions and severe nervous symptoms did not occur in any of these cases.

The urine in this disease is very acid in reaction, light yellow in color with considerable flocculent precipitate. The specific gravity is usually low.

The following analysis of the urine of one patient was typical of all cases:

SPECIMEN OF URINE FROM D. Z.

Light yellow flocculent precipitate, strongly acid and specific gravity 1002.

Faint trace of albumin.
Sugar absent.
Considerable acetone.
Diacetic acid absent.
Indican-trace.
Creatinine—considerable quantity.

Microscopical Examination

Numerous pus cells, few round and transitional epithelial cells, uric acid crystals, albuminous debris.

The general health of all these patients was as a rule not markedly impaired with the exception perhaps in cases following serious gastro-enteric disorders. In one chronic case there was a considerable degree of anemia.

The duration of the disease in these patients was from three to six weeks as far as the temperature was concerned, but pus was often present in the urine several weeks after the patient seemed fully recovered. There were no relapses, and no deaths.

The treatment was uniformly the same, potassium citrate was given in five grain doses every three hours until the temperature subsided and was then followed by urotropin in one grain doses four times daily. In one instance the urotropin caused a great deal of abdominal pain and strangury and had to be discontinued; otherwise there were no un-toward symptoms from this treatment.

The diet was not especially restricted except that there was considerable digestive disturbance. The treatment was then first directed to this condition and corrected by proper dietic measures.
The occurrence of such a large number of cases shows that acute pyelitis in young children is a far more common affection than is generally supposed. Without question, many of these cases are regarded as typhoid, malaria, or dentition fever.

One of the main objects of this paper is to make an earnest plea for a more careful and routine examination of the urine of young children.

**ESOPHAGOTOMY FOR REMOVAL OF FOREIGN BODY**

**BY H. LEE HEFLIN, M.D.**

**Louisville, Ky.**

The accidental swallowing by children of coins and other small objects followed by no serious after-effects, the foreign bodies being later discharged via the bowel, is such a common observation that it is not considered worthy of record, and only when accompanying accidents or complications in connection therewith endanger the life of the patient, or operative intervention is required for extraction of the foreign body, do such case reports find their way into medical literature. Contrary to the generally accepted opinion, however, the swallowing of even small foreign bodies is not always without danger to the individual, and fatalities have sometimes ensued where such bodies became tightly impacted in the esophagus, resulting in ulceration and perforation either into the tissues of the neck, the pleural cavity or the trachea.

Small coins, buttons, etc., may oftentimes be successfully extracted from the esophagus by means of the esophageal (bent) forceps, or a long straight (toothless) hemostat. However, where the foreign body becomes impacted, and marked infiltration and edema have supervened, removal may be impossible by any other means than esophagotomy. It must be remembered that, no matter what be the circumstances, intra-esophageal instrumentation is never entirely devoid of danger, and even in experienced hands fatalities may follow employment of the esophagoscope and the esophageal bougie as well as from esophagotomy. Owing to the resulting infiltration and edema, accurate location of the foreign body may be impossible by the introduction of a bougie or even by esophagoscopy. In former times a common practice, when the foreign body could not be readily

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located and extracted by ordinary means, was to force it downward into the stomach; and in some quarters this procedure is still recommended. It is always advisable, where possible, to accurately determine the position of the foreign body by the X-ray or the esophageal bougie, preferably the former.

Esophagostomy may be practiced in adults with or without local or general anesthesia. Where the esophagus has not already become inflamed, irritated and edematous from presence of the foreign body, sensibility may be insufficient to make general anesthesia necessary. In children, however, general anesthesia will as a rule be required for satisfactory intra-esophageal manipulation, as they are usually freightened and cannot be otherwise kept sufficiently quiet.

In the vast majority of instances, after definitely locating the position of the foreign body with an X-ray, extraction thereof may be accomplished by intelligent utilization of the esophagoscope in connection with other suitable instruments; but, as already intimated, this apparently trivial procedure is not entirely without danger and a fatality may ensue. Several such examples have been recorded, two quite recently, by Ingals:

(1) Patient, child of two years, five days before swallowed coin 2.4 c. m. in diameter, and being unable to take nourishment was consequently quite weak. Radiograph revealed coin lodged in esophagus above level of clavicles, its flat surfaces antero-posteriorly, “the position in which flat bodies always lodge in the esophagus” (Ingals). Under chloroform anesthesia the coin was located by the esophagoscope and removed without difficulty. The child’s temperature gradually rose reaching 108° F. before death thirty-six hours after the operation.

(2) Child of two years (patient of Dr. Friedberg), eleven days before swallowed coin 2.3 c. m. in diameter. Considerable esophageal injury had been inflicted by efforts at extraction before patient brought to Dr. Friedberg. Radiograph revealed foreign body slightly above clavicles to right of median line. Repeated critical search with esophagoscope failed to locate coin; blunt-pointed eight-inch hemostat introduced until it reached position of coin, then turned and blades opened antero-posteriorly and gently pushed downward an inch and closed on edge of coin, which was removed without further difficulty.
The child's temperature shortly reached 104° F. and death occurred four days after the operation.

A fatal result ten days after lodgement of a small foreign body (plum-seed) in the esophagus is also recorded by Richardson in a child of four. While the foreign body was apparently lodged three inches below the cricoid cartilage, all efforts directed toward its removal failed. On account of the desperate condition of the child, endoesophageal and external operative procedure were not to be considered. Evidently irritation and inflammation caused by the foreign body induced formation of an esophageal abscess, which necropsy revealed had ruptured into the pleural cavity.

In the subjoined case, esophagotomy became necessary before the foreign body could be extracted. A male child aged two and a half years swallowed a copper penny late on Friday afternoon and was first seen about seven o'clock the same evening. Since many examples of this kind had previously come under my observation where no harm resulted, the coins eventually being discharged via the bowel, the mother was advised to await developments, believing that the child would probably be all right in a few days. Two hours later the mother telephoned that the child was fretting considerably and seemed to be feverish, asking me to call again that night, which I did about ten o'clock and at that time found the baby quietly sleeping.

Saturday the child was playful and able to swallow, but vomited several times during the day.

Sunday morning he was not quite so well, and food was still regurgitated. While later in the day the child walked about, he would make no effort to swallow anything except water.

On Monday he seemed better, but I insisted on having an X-ray examination. An anesthetic was administered, and the picture showed that the coin was at the sterno-clavicular junction, flat surface antero-posterior.

On Tuesday the child was sent to the hospital and a prominent laryngologist tried for almost an hour to remove the penny, but was unsuccessful. It was impossible to get the instrument into the esophagus.

Dr. H. Horace Grant saw the child in consultation on Wednesday. There was considerable edema due to traumatism
from the esophagoscope, so it was thought best to await until the next day and do an esophagotomy.

On Thursday the child was anesthetized for the third time. An esophageal bougie was inserted to see if the coin was still in the same location. An incision was made on the left side parallel to the sterno-cleido-mastoid muscle. On account of the edema and infiltration present, and especially the smallness of the child and the shortness of its neck, the operation was not easy of execution. The esophageal bougie was of great assistance in outlining the esophagus. It was found that the coin had ulcerated partially through the esophageal wall.

Because of the ulceration from the foreign body, it was impossible to suture the opening in the esophagus. The child was nourished by rectal enemata for forty-eight hours, then was fed milk by the mouth, part of which escaped through the fistulous opening. The opening closed very rapidly, and convalescence was unaccompanied by complication, the temperature never exceeding 100° F. Before the fistula had entirely closed the child developed whooping cough, but this did not affect the healing of the wound. The child is entirely well, and has no difficulty in swallowing.

In sixteen years of practice this is the first case that has come under my personal observation where any serious trouble followed the swallowing of a small coin. Such accidents have always looked upon as a trivial. In the majority of the cases no especial treatment was required, and the coins (instead of having to be extracted) were discharged via the bowels in a few days.

Wherever it is possible obstructing coins and other small foreign bodies should be extracted through the esophagoscope, since esophagotomy is a difficult and oftimes dangerous operation. If the laryngologist had been able to introduce his esophagoscope into the esophagus, doubtless the coin could have been easily extracted in that way.

A somewhat similar case is reported by Taylor in which a child of sixteen months swallowed a metal clasp ("drawers holder") in March; in April a skiagraph under ether revealed the foreign body in the esophagus directly on a line with the sterno-clavicular articulation. The child nursed, but was unable to swallow solid food. In October unsuccessful attempt to extract foreign body with forceps. Esophagotomy: Ulceration so extensive that esophageal wound could not be closed by di-
rect suture, and was allowed to heal by granulation. The child nursed, but milk escaped from esophageal opening. Nutritive enemata for several days. Wound packed with cotton, and under pressure nursing satisfactory. Convalescence uneventful, wound healed entirely without stricture two months after the operation.

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DISCUSSION

Dr. H. H. Grant: While the operation was tedious, the field being exceedingly limited on account of the shortness of the child's neck, no serious difficulties were encountered in its execution. The incision was made parallel with the sterno-mastoid muscle, the tissues were infiltrated and edematous, careful dissection was required in their separation, and the esophagus was somewhat difficult of recognition. After the esophagus had been identified a bougie was passed beyond the coin which was then "fished out" through the opening partially made by the ulceration. It was impossible to suture the opening to any degree of satisfaction, and while a few sutures were introduced we did not expect them to hold, nor could we hope for immediate union, therefore the wound had to be left to granulate.

The question arose as how best to feed the child under the circumstances, but as stated by Doctor Heflin it was satisfactorily nourished by the rectum. After forty-eight hours the wound was thoroughly cleansed, and by pressing the edges together it was found the child could swallow water without difficulty, which definitely settled the question, and thereafter the child was given four ounces of cream several times a day and improved rapidly.

The x-ray is an exceedingly valuable aid in diagnosis and should always be utilized in cases of this kind; and as Doctor Heflin states the attempt should also be made to extract the foreign body by means of the esophagoscope. In young children especially esophagotomy is attended with unusual difficulties on account of the narrow space in which access to the foreign body must be obtained.

Doctor Heflin's delay in this case is entirely excusable
under the circumstances. When I first saw the child on Wednesday it was sitting in its mother’s lap and did not appear to be in a serious condition. However, we recognized that the foreign body should be removed, as otherwise it would certainly ulcerate through the tissues and fatal infection might ensue. After the foreign body has become tightly impacted, esophagotomy is indicated in the majority of instances.

Dr. J. K. Freeman: Like Doctor Heflin, we have all seen many cases where children swallowed coins and other small objects without serious after-effects. I recall one instance where a boy swallowed a fish hook which was later discharged via the rectum. In a child of two and a half years a small foreign body usually passes on into the stomach. Of course after the coin became impacted in the esophagus and could not be moved as demonstrated by the introduction of a bougie, and removal could not be accomplished through the esophagoscope, then esophagotomy was imperatively demanded. The circular fibres of the esophagus were stimulated to over-contraction by presence of the foreign body, and in this way it was forced through the wall after ulceration supervened. Evidently the longitudinal muscular fibres of the esophagus were not active, or the coin would have been forced downward; or it had reached a point where there was no voluntary motion. The upper part of the esophagus is controlled by voluntary muscles, the lower part by involuntary; one can control the first portion of the act of delugition, but not the last.

Dr. H. H. Grant: Sunday evening a dental student telephoned that he had swallowed his scarf pin, nearly two inches long, and appeared considerably excited about it. He was advised to eat plenty of potatoes and bread, and to watch the stools. At the Monday lecture he reported that he had not yet recovered his pin. Two days afterward he telephoned in great delight that he had recovered his pin in the water closet! He suffered no further inconvenience from the accident.

Dr. I. A. Arnold: I have under observation a patient who ten days ago swallowed a silver half-dollar, which has not yet been discharged via the rectum. Smaller coins and other small foreign bodies are usually promptly passed by the bowel, but it is questionable whether a half-dollar will do so. The coin evidently reached the stomach, as there have been no symptoms of obstruction in the esophagus.

Dr. T. E. Gosnell: Last summer a child two years old swal-
lowed a five-cent piece which evidently lodged in the esophagus, although water could be swallowed. I tried to find the coin, but was unsuccessful. I gave the child a dose of apomorphine hypodermatically and the coin was promptly regurgitated.

Dr. H. J. Phillips: It seems to me had Doctor Heflin used an esophageal bougie or small catheter before the esophagus became edematous, the coin could have been made to pass into the stomach. The suggestion made by Doctor Gosnell of giving apomorphine is a splendid idea, because it induces violent vomiting and the foreign body may be dislodged if not too tightly constructed by the circular fibres of the esophagus.

Dr. E. Lee Heflin: This child vomited repeatedly after swallowing the coin. There were but two symptoms in this case, difficulty in swallowing and regurgitation of food. I believed it unwise to attempt to force the coin from the esophagus into the stomach.
The forty-sixth annual meeting of the Canadian Medical Association was held in London, Ontario, on June 24-25-26 and 27, 1913. The weather was glorious and few places better adapted for a meeting of this description could be found in any part of Canada. London is well served by the railroads and its situation is such that it can be easily reached from all parts of Eastern Canada as well as from the middle west of the United States. London, too, is admirably suited to hot weather conditions, being shaded in almost all its streets and roads by well-grown trees, and presenting everywhere a pleasantly unbraveous and cool appearance.

In these circumstances it was somewhat surprising and distinctly disappointing that the attendance was not larger. Some 400 members registered but taking everything into consideration, an attendance of double the number might have been anticipated. However, the program was long and excellent and perhaps the paucity of numbers was counterbalanced by the high quality of the papers read.

Of course it would be out of the question to attempt to deal with the proceedings of the meeting in detail and therefore a few outstanding features will be singled out for notice, and those papers treating solely of children's diseases will be quoted from and commented on.

Medical Education — Dr. H. A. McCallum, the president elect, delivered a fighting presidential address and severely criticised some abuses and defects existing in the Canadian Medical profession. Especially he pleaded for a more active interest by the profession in the work of the association. It had done a great service in doing away with provincialism and inaugurating great reforms of inestimable benefit to the profession and the public generally. With every practitioner in Canada a member, greater and more beneficial results could be obtained. The necessity for funds to rescue the association from the exploitation and commercial enterprise of certain drug houses was emphasized. It was pointed out that the chemical industry of Ger-
many was carefully organized, and it was difficult to know what to accept and what to repel. Trained and scientific censors were needed to give advice and to assist in shaping legislation to prevent the sale of nostrums.

Dr. McCallum praised the work of the Carnegie Foundation, but deprecated the propagation of the views expressed in its reports that the German methods of medical teaching were the best. By this mode of teaching medical students were taught to be scientists first and medical practitioners afterwards. This was a reversion of the natural order of things and was not producing the best results. The outcome was that the medical student of today was burdened with too much scientific subjects and laboratory work without being grounded sufficiently in the fundamentals. This was a mistake and the general practitioner suffered. The larger percentage of students graduating at the present time were going to specialize in surgery, and there was a grave danger that this branch of medical science would crowd the practice of medicine into the background. This was not in the best interests of the profession as a whole or the public. The lack of knowledge of the value of medicines made the practitioner as well as the public victims of the nostrum peddler.

Dr. McCallum announced himself as strongly in favor of British methods of medical education, which aimed to make of the student a practical medical man, one able to treat disease with a knowledge not gained from books and word of mouth, but from bedside experience.

Cancer—Dr. Thomas R. Cullen, of Johns Hopkins University, Baltimore, delivered the address in gynecology. The address was rather an earnest plea for the dissemination of information among the community at large and especially amongst women, as to the detection of the early symptoms of cancer. Dr. Cullen outlined the plan of campaign inaugurated in the United States to spread knowledge among all classes regarding cancer. It will be in the memory of our readers that at the Congress of Clinical Surgeons of North America held in New York during last November, it was decided that a propaganda carried on, on popular lines should be undertaken to diffuse a knowledge of certain facts concerning malignant disease throughout the length and breadth of the country. Dr. Cullen described the steps that had been taken in this direction. Proprietors and editors of daily journals and popular magazines were approached and
induced to take an interest in the matter. This interest they all evinced and gave practical aid to the movement by allowing the use of their widely disseminated organs to spread knowledge of the early symptoms of cancer. More than this, Mr. Bok, proprietor of the Ladies' Home Journal, Mr. Collier and Mr. McClure, gave valuable advice with regard to the best methods calculated to achieve this object. The decision was come to that a lay writer thoroughly informed as to the main facts would be better able than a medical writer to place the matter clearly before the community. Accordingly, Mr. Hopkins Adams was chosen for the task who after priming himself with the essential truths respecting cancer and its early symptoms wrote a powerful series of articles. According to Dr. Cullen, the results of these articles had been most successful. Physicians from all sections of the country had reported that large numbers of men and women had been influenced by the popular press and magazine propaganda to seek early medical advice.

Mental Hygiene—Dr. Lewellys F. Parker, Professor of Medicine at Johns Hopkins University, Baltimore, in the Public Health Section gave an interesting address on mental hygiene. Dr. Barker said, in part, that by this term was meant the conservation and improvement of mental health to make men think better, act better, and become better than now. The imbecile, the criminal, the prostitute, the insane were so because they had to be. Their minds worked that way. The majority had been born with a bad brain and acted as their brain directed, while others, though born with good brains, because of some deleterious act, acted wrongly or criminally. Two sciences were dealing with the problem of mind improvement. One was the science of eugenics and the other was that of psychiatric. The advocates of the first believed largely in heredity, and were endeavoring to have children brought into the world equipped with good brains. The other school believed that environment played the larger part in the development and expression of brain power. Both schools were of equal importance and there should be no quarrel between them.

Dr. Barker sketched the recent campaign in the United States to make the public, the doctors and the law givers recognize the importance of the question of mental hygiene. Criminality, prostitution, imbecility and the like were due to bad brains and by enacting proper laws to prevent the marriage-
of the unfit, to prevent the spread of diseases that affect the physical well being of the coming generation, much of the evil could be stamped out. The benefit of institutional training was emphasized by Dr. Barker. He is of the opinion that psychiatric clinics should be held frequently and that school teachers should be educated to recognize abnormal children and segregate them or have them placed in institutions where their mental well being would be assured. A campaign for the propagation of mental hygiene should produce as successful results in Canada as it had produced in the United States.

Medical Inspection of School Children—The Public Health Section presided over by Dr. MacMurchy, of Toronto, had some instructive discussions. The two most important were those dealing with medical inspection of school children and with the problem of venereal disease.

Dr. John Stewart, of Halifax, contributed a paper on medical inspection of school children which in his absence was read by Dr. Fidlar of the London Institute of Public Health. Dr. Stewart after reporting the work being done in all the provinces of the Dominion, was forced to conclude that the work was as yet in its elementary stage. While there had been progress in the cities owing to the efforts of the few, there was still apathy shown in the smaller places and would be until some definite system was worked out that would constitute a national standard. For this reason, therefore, there was need for a national public health service that could deal with such questions as immigration, sanitation of factories, adulteration of food, along with medical inspection of schools. In the discussion that followed the reading of the paper various views were expressed, the general trend being that federal domination was the true solution of the problem of efficient public health bureaus.

Dr. Bapty of British Columbia expressed the opinion that the work was going on at the wrong end in Canada. Children were shut up at the very time they needed the vigor giving sunlight and air. What he thought was required was out of door work shops, leaving the regular school curriculum to be picked up later.

The discussion hinged on the question as to whether school authorities should have control of medical inspection of school children or whether health boards should exercise this control.

Dr. Halpenny of Winnipeg was strongly of the opinion that control should be left in the hands of the school authori-
ties as municipal politics dominated the health boards in Canada, and the United States to a much greater extent than in Great Britain, school boards supervised the inspection of school children. A committee was apointed to report on the matter and recommended that for the present the inspection of children be done by an appointee of the school board working in conjunction with the medical officer of health. At the end of a long discussion it was decided to leave the matter over for another year, and to have it take a prominent place on the program of the next convention.

"Diagnosis of Tuberculosis Bronchial and Mediastinal Glands"—Among papers read relating to children's diseases was one by Dr. J. H. Elliott, of Toronto, entitled "Diagnosis of Tuberculous Bronchial and Mediastinal Glands." Dr. Elliott laid stress on the fact that practically all children with tuberculosis have these glands involved. In many the infection is localized within these glands. If the diagnosis can be made at this state, much can be done to save the child from the infection extending to other organs and from a generalized tuberculosis. In Canada over 2,500 children die from tuberculosis each year. How many thousands have it without fatal termination is not known. No extensive study has been made in Canada as to the extent of tuberculosis in children. In European cities infection is rife; from the fourth to the eleventh year over one-half are tuberculous. Of nine hundred and twenty children dying from all causes in a Paris hospital five hundred and thirty-eight or nearly 60 per cent., showed gross tuberculosis lesions at autopsy. Tuberculosis of the bronchial glands is then a disease which must be considered.

The symptoms of this form of infection fall into three groups. 1. Constitutional or toxic. 2. Those due to pressure on neighboring structures. 3. Those due to adhesions to neighboring structures with subsequent perforation. The employment of the x-ray for diagnostic purposes, either using plates or the screen is extremely valuable.

The Tuberculin Test—The von Pirquet reaction is the most useful, although one must be careful in drawing deductions in its use in adults and older children. A positive reaction means the presence of tuberculosis at some point. A negative reaction does not exclude tuberculosis. At the Tuberculosis Clinic at the Toronto Hospi-
tal for Sick Children a number of cases of undoubted tuberculosis have not reacted. Elliott is inclined to think that is may be absent 1. In some quiescent closed cases. 2. In some advanced active cases. 3. In certain other cases which for the present may be termed refractory. But in most cases the von Pirquet test is a reliable guide to the presence of tuberculosis, yet it must be considered only in conjunction with the findings established by all other means of diagnosis at disposal.

Very few papers were read dealing solely with the diseases of children and of course there was no pediatric section, an omission decidedly to be wondered at.

The executive committee was elected as follows: Dr. F. P. Drake, London; Dr. MacKid, Edmonton; Dr. Primrose, Toronto; Dr. Small, Ottawa; Dr. Adami, Montreal; Dr. Reeve, Forest; Dr. Halpenny, Winnipeg; Dr. McKechnie, Vancouver; Dr. Brett, Banff; Dr. Mader, Halifax; Dr. Park and Dr. Whitelaw, Edmonton; and Dr. F. U. Q. Starr, Toronto.

St. John, New Brunswick, was selected as the next place of meeting and Dr. Murray Maclaren of that city as the president for next year.

**ENGLISH SPEAKING CONFERENCE ON INFANT MORTALITY**

**Eugenics—**At the English speaking conference on Infant Mortality which opened in London on August 4th and continued up to August 6th practically every English speaking country was represented. The conditions were all favorable to a large attendance, the weather was fine, the place of meeting was excellently situated and eminently well suited for the holding of a conference, the dimensions of which were not too big, the organization of and the arrangements made for the conference were good, chiefly due to the efforts of the secretaries, Dr. Eric Pritchard, of London, and Dr. A. K. Chalmers of Glasgow; and lastly the presence in London of medical men from all parts of the world gathered there for the International Medical Congress. Further, those responsible for the arrangements were fortunate enough to secure for the opening session Mr. John Burns, the president of the British Local Government, as chairman. Specially appointed delegates attended from twenty-three countries and the Dominions. Among these were Assistant Surgeon-General J. W. Kerr, of the United
States Public Health Service, and Mr. Sherman C. Kingsley of the Children's Bureau of the Department of Labor of the United States and Dr. Charles A. Hodgetts of Ottawa, the Medical Adviser to the Canadian Commission of Conservation. Mr. John Burns made a capital opening speech, not a word of which was superfluous. He said, in part, that from humble beginnings the conference had now attained to the dimensions of a world-wide movement, embracing all the English speaking people. Considering the similarity of life, language, aims and ideals which characterized the English speaking people, they were all called to the common duty of seeing that their stock was good, that their children were clean and healthy, that their women were virile and that their men were enduring. They were united in seeing that the source of their strength lay in noble motherhood, in healthy parentage, and in happy and healthy children; and as the stream was no purer than its source, it was their business, having concentrated so much on the child with such beneficial results during the last seven years in seeing that they did not lose sight of the mother.

Antenatal Care of the Child—it may be here said that the keynote of the meeting was the emphasis placed upon the necessity for ante-natal care. Mr. Burns laid stress upon the fact that as communities were becoming more and more urbanized as they are so becoming in civilized countries the early part of existence were denied the quiet, the rest and the fallow conditions which were essential for the health of child life. It even went beyond this, just as the physical history of all of them, he believed, began with their grandmothers, so the life of the baby was now measured in city communities, perhaps more by its pre-natal condition than by its post-natal environment after it had been healthily born. Referring to the disparities in infant mortality the speaker pointed out that no county of the British Isles had a lower pauperism than Lancashire, but it stood highest for infant mortality. In some towns, in parts of towns, the infant mortality where mothers worked away from home and where the children were therefore neglected, was three to four times what it was in those places where mothers lived at home. He strongly held the view that for, at least, four months before the child was born, and longer after the child was born, mothers should be mothers and not machines. He found that doctors' babies died at the rate of only 40 per thousand; while in the case of the upper or middle classes the rate was 77; in the
case of the artisans, 100 to 130; in the case of miners, 100; in the case of unskilled laborers, 150 to 250 and in the case of agricultural laborers, notwithstanding their brutally low wages, only 97 per thousand.

Diminished Infant Mortality—The community was going to ask the doctor to do for everybody what he did so well for himself. High wages in themselves were not sufficient, because high wages with drink always meant inferior housing and were more fatal to the child that low wages and reasonable housing and restful surroundings. In the seven years since the conference began, the general death rate in Great Britian had diminished 13 per cent.; tuberculosis 18 per cent.; but infant mortality over 30 per cent. The total saving of life in the seven years compared with the previous seven years was represented by 545 human lives. Owing to the diminished infant mortality, nearly 200,000 infants had been saved, and the saving this year was over 50,000 lives, or nearly the total emigration from Mother country to Australia. Mr. Burns was of the opinion that there were too many childless women mourning over cats and keeping the company of dogs, who would be much happier for the company of other people’s children. He suggested that instead of wasting guineas and more on overcoats for lapdogs and slippers for hounds and bracelets for favorite pets, some of these ladies should come to him and he would be only too pleased to convert himself into a children’s agency, by means of which he would provide them with human substitutes for their feline and canine pets.

He would suggest that next year they should consider more seriously the diseases of maternity and paternity. They ought to learn why 23 per cent. of the deaths from cancer among women occurred in the genital organs. They had to look more closely into those sexual diseases, in regard to which society showed a prurient delicacy which was dangerous, but in regard to which, the Local Government Board had in preparation a report which he hoped might help them in their investigations. Yet there was no reason for alarm or depression. If the extent of venereal diseases was tested by its decline in the army, it was declining more rapidly than any other disease, but that was no reason why it should not decline even more rapidly. He believed that from 30 to 50 per cent. of the 25,000 blind people in Great Britian were blind from this particular disease. Let them deal with the question from the medical and human side,
irrespective of theories about restriction or suppression. He was solidly convinced that the lives saved by their lower death-rate meant healthier lives for the survivors generally. He did not belong to the "better dead" school. Improved conditions that saved the life of the child helped the mother. The Government regarded the health of the people as, the supreme law and however much their trade, commerce and wealth might increase, however much their material supremacy in the world might grow, all these things were as nothing unless they had clean and happy homes in which mothers could live decent lives.

Infant and Child Hygiene—The conference was divided into two sections. The Administrative Section and the Medical Section. The general theme of the first of these sections was "The Responsibility of Central and Local Authorities in the Matter of Infant and Child Hygiene." The section was presided over by Dr. Arthur Newsholme, medical officer of health of the English Local Government Board. Among those who read papers in this section on this main subject were Dr. F. E. Freemantle, medical officer of health for the county of Hertfordshire; Dr. Charles A. Hodgetts, medical adviser to the Commission of Conservation, Canada, who described the work of the Dominion Health Authorities in the home; Dr. H. J. Gerstenberger, director of the Department of Child Hygenic in Cleveland, Ohio, gave an outline of the systematic methods there pursued. Dr. Helen MacMurchy, Toronto, spoke of the general subject of Infant Mortality in Canada. Dr. J. L. K. Shaw, Albany, N. Y., discussed the "Problem of the Institutional Infant."

On the second day of the conference, the members concentrated on the subject of the milk supply, the Countess of Aberdeen occupying the presidential chair.

New York’s Milk Supply—Among the papers of interest read was a description of New York’s milk supply by Dr. Herman Biggs. Dr. Biggs said, in part, that the milk supply of New York comprised about 2,000,000 quarts per day and was derived from six or seven States, coming in some instances from as great a distance as 400 miles. Practically all that milk supply was, at least, twenty-four hours old, and most of it was thirty-six hours old before it reached the city. Discussing the gradual growth of New York’s method of dealing with the milk problem, Dr. Biggs showed how the health authorities had been
led to look to pasteurization as an ultimate resort. About one half of the city's milk supply was now pasteurized, and it was hoped that within the next twelve or eighteen months practically their whole supply, except guaranteed and certified milk, and milk required for cooking and commercial purposes would be pasteurized. They were convinced that this was the solution of the problem so far as New York City was concerned. Assistant Surgeon-General J. W. Kerr, United States Public Health Service, described the gradual evolution of American methods for controlling the milk supply in the interests of the health of the community. Dairy inspection to the extent practiced in the United States, undoubtedly contributed to the production of cleaner market milk supplies, but it was inadequate to ensure constant freedom from the infections of tuberculosis, typhoid fever, diphtheria, scarlet fever, and septic sore throat and to a lesser extent those causing infantile diarrhea. Therein lay the sanitary problem of milk supplies. In order to solve it, dairy inspection would necessarily be greatly extended and the cost of milk correspondingly increased. In the meantime there was no alternative except to pasteurize milk supplies under official supervision.

Dr. G. R. Pisek, New York City, dealt with the milk problem particularly as it related to large centers of population drawing their milk supply from sources distant many miles, in some instances 450 miles, necessitating that from twenty-four to thirty-six hours elapse between milking and delivery to the customer.

Dr. W. G. Savage, medical officer of health for the County of Somerset enunciated the view that as the essential sources of milk contamination were at the farm, it was there that the main control must be exercised. Dr. Telane, medical officer of health for Battershe, said it was a well known fact that in London where the milk question was so very urgent, the control of the milk supply was very unsatisfactory. That arose from the fact that although the sanitary authorities in London were very keen in looking after their milk supplies, they had practically little control of it until it came into their particular districts. It was only within the past three or four years that any precaution had been taken to secure information as to the actual amount of tuberculous milk coming into the county of London, and it had been shown that, as the result of the powers which the London County Council obtained by their General Powers' Act
of 1907 or 1908, something like from 11 to 12 per cent. of the milk supply they had examined had been found to be tuberculous. Having regard to these facts, they thought it was high time they adopted in England some of the enterprise their American cousins were displaying in obtaining efficient control of the important industry. Dr. H. L. Coit, New Jersey, said it seemed to him that the rank and file of the medical profession here, on this side of the water were not yet prepared to say that they wanted and must have, safe milk. He was convinced that they had not certified milk in England, not because they did not need it, but because they did not know what it was.

**Dried Milk as an Infant Food**—Several excellent papers were read on dried milks, among which was one by Dr. Eric Pritchard, of London. Dr. Pritchard said that the best known variety of dessicated milk and the kind he first employed in the feeding of normal infants attending at his infant consultations in Marlebone Hospital is prepared by the Just-Hatmaker process. Dr. Pritchard is strongly in favor of dried milk for infant feeding when prepared by that or similar processes.

Dr. Frederick Langmead of London read a paper on citrated milk. Dr. J. A. Pease, M.P., presided over the medical section and among the papers read were several dealing with the necessity for special education in infant hygiene, these were contributed by Dr. L. E. La Fetra, New York; Dr. C. Paget Lapage, Manchester, and Dr. F. Truby King of New Zealand.

Perhaps the most important paper of all those read was one by Dr. F. W. Mott, the well known alienist and pathologist to the London County Asylum. The gist of this paper is that congenital syphilis is a fruitful cause of infant mortality and that congenital or acquired syphilis is the essential cause of general paralysis of the insane as to the preventive measures to be taken with regard to syphilis. Dr. Mott had this to say: The disease is preventible, then why not prevented? You may ask: What should be done? I would say first and foremost, Do not cover up the evil from a false prudery, let it be widely known. Educate the public conscience to the necessity of seriously dealing with the question from a preventive as well as a curative point of view. A fruitful commencement could be made by examining the blood by the Wassermann test of all suspect mothers and children. All those mothers with a positive reaction, even if apparently healthy, could be treated with
a view to their bearing living children. All children born of suspect parents, even apparently healthy, but who gave a positive reaction could be treated until the reaction was negative with a view to the prevention of disease later in life. Government or municipal laboratories employed for this purpose would not only thereby perform an important service to public health, but prove of great economic value by diminishing greatly the infantile mortality and the prevention of incurable diseases occurring at all ages. Finally it is desirable, as suggested by Sir Malcolm Morris, that a Royal Commission be appointed to inquire into the best means to be adopted for the prevention of the spread of syphilis and other venereal diseases.

The meeting was a conspicuous success from the scientific, practical and social points of view. On the evening of August 4th the Dutchess of Marlborough nee Vanderbilt was at home of the members of the Conference at Sunderland House.
RETROSPECT OF CURRENT PEDIATRIC LITERATURE.

Diseases of the Alimentary System.
Under the Charge of
JAMES WARREN VAN DERSLICE, M. D.
Assistant Professor of Pediatrics, Rush Medical College, Chicago, Ill.

Breast Feeding*—By Edgar Snowden, M.D., Washington, D. C., The Virginia Medical Semi-Monthly. In getting a sample of mother's milk for examination, it is important to remember that the first obtained from the breast is poor in fat while the last is very rich, so the entire contents of the gland should be secured to insure a correct analysis. A poor milk can often be converted into a rich digestible one by giving the mother three meat meals a day and have her take walking exercise morning and evening. In the face of a failing milk supply, nurse the child regularly, for it is during the act of suckling that the mammary gland is most active, and the major portion of milk is secreted, while the action of the baby's lips is our best galactogogue. To paraphrase:—To her that nurseth shall be given, while from her that nurseth not sufficiently shall be taken away even that which she hath. During the first few months of infant life, breast feeding is most important, and nothing should be allowed to interrupt or interfere with its regularity. To advance the feeding hour a little because mother wants to get out sooner, or to make the baby wait while she finishes a shopping trip or afternoon call is decidedly wrong, and may bring on digestive disturbances that will affect the child's health for years.

The first few weeks of the puerperium is, as Wile points the most important period of lactation, as the milk undergoes many changes owing to the readjustment of the mother to an entirely new state of affairs.

Is Any Illness In Infants Due To Feeding?—Read before the South-Australian Branch of the British Medical Association by F. S. Hone, M.B., Ch.B., Semaphore, S. A., The Australasian Medical Gazette. In reasoning as to the probabilities of any illnesses being due directly or indirectly to teething we are on the same insecure ground. The fallacy here is that we unconsciously drift into the old loose way of thinking of the period of dentition as a particular state of body, or an entity in itself. For instance, dentition is a physiological process. Still and others reply that "pregnancy is a physiological process, that no one would deny pregnancy may affect the health in many ways." That is to say, one thinks of dentition as a definite state like pregnancy, lasting some 2½ years instead of 9 months and terminating in the safe or difficult delivery of the twentieth tooth. One has only to put it in this way to see the absurdity of the argument, and the contrast to our view of what occurs at the eruption of the permanent tooth. The only other supposition is that this state supervenes some 20 times or so in 2½ years with the eruption of each tooth or batch of teeth, and that is unthinkable. Therefore, when one talks of dentition inducing an over-excitability of the nervous system, one can only mean that the eruption of a tooth or batch of teeth has this effect on particular individuals. For we all admit
that in many cases dentition causes no symptoms at all; the contention is that in certain cases, particularly in infants of a neurotic type, this irritability is set up. In such a case the fault must be either in the process of eruption of the tooth, or in the infant himself. All the evidence is against the former supposition; there is no bony obstruction; the opening in the alveolus is larger than the tooth itself; there is no rigid obstruction in the gum. If the fault be in the child, then the same result ought to follow the eruption of each tooth, but in no case that I have met has the same sequence of symptoms accompanied the eruption of every tooth. On the face of it, such a series of repeated coincidences must be extremely rare; in all the supposed series I have come across, more detailed investigation has revealed that there was not such a thorough coincidence as was asserted.

Buttermilk in Chronic Infantile Diarrhea.—Stolte. Monatschrift, XI, No. 2) shows that, when given in such cases, the buttermilk should not be mixed with other ingredients, as in the pap made by adding 15 grammes of wheaten flour and 60 grammes of sugar to 1 litre of buttermilk. In his opinion, the buttermilk given in such cases should be poor in hydrocarbons, and such hydrocarbons as it does contain should not ferment easily; besides, the buttermilk should contain enough fat, viz., 1.4 to 1.7 per cent. According to Schaps, buttermilk works wonders in one very well-marked intestinal disorder, follicular enteritis. Canadian Journal of Medicine and Surgery.


The most striking features of the illness, therefore, are:
1. The stunted growth of the child's body; his entire length as he lies in bed to be about 32 inches.
2. The fusiform enlargement of the joints, which seem more atrophied and deformed than they really are because of the contrast with the profound wasting of the muscles.
3. The enormous enlargement of the liver and the spleen.
4. The profound dryness of the skin and diffuse alopecia.
5. The generalized adenoplasia.
6. The striking changes in the blood. Marked increase of white blood cells, eosinophilia and evidence of conspicuous degeneration in the red cells.
7. The evidence in the urine of an amyloid degeneration of the kidneys.

Consideration of these conditions, it seems to me, would lead one conclusively to the opinion that we are dealing with some generalized form of infection. Such adenoplasia and such amyloid degeneration occur usually as the result of chronic infection, such as protracted tuberculosis. The blood picture which this child presents, and which in a measure has been reported in many other cases, especially the changes in the leucocytes, is likewise that of some long continued poisonous process, such as a low grade septic infection. Any one who has seen much of gonorrheal arthritis cannot fail to be impressed with the similarity which the joints in what might be called an acute stage of Still's Disease exhibit to the joints in gonorrheal arthritis. Finally, it seems to me that the unquestioned recoveries that have been recorded of the form of polyarthritis under discussion after the occurrence of infectious disease makes it absolutely certain that here we are dealing with some infectious process. Whether or not it is a specific infection remains to be determined.

The Salicylates in the Treatment of Acute Chorea, with Reports of Cases.—By Nelson K. Fromm, A.B., M. D., Albany Medical Annals.
November, 1912. The treatment of chorea as a rheumatic man-
manifestation. While the arsenical treatment of this condition has
been adhered to during the last few years, those advocating the
use of salicylic acid and its derivatives have been steadily in-
creasing in number. Holt reports a case in which arsenic had been
continued for two weeks without the slightest improvement, when the
patient had an intercurrent attack of subacute rheumatism for which
sodium salicylate was given in full doses with the effect of controlling
the choreic symptoms promptly and permanently. Gordon Sharp
before the Royal Medical Society of London recommended the use
of the salicylates highly, and said that he had never found that de-
pression resulted from their action. Poynton and Ness of England
are likewise enthusiastic advocates of this form of treatment. Kerley
not only gives his cases salicylates but also places them on an anti-
rheumatic diet. With the salicylates he combines arsenic as tonic to
the nervous system and thinks that this method is ideal. D. B. Lees
of London advises enormous doses of the salicylate of sodium, 200
grains or more per diem combined with soda bicarbonate. John
Allan of Scotland during the last three or four years has relied on
acetyl-salicylic acid (aspirin) and has come to regard it as the drug
without equal for the treatment of acute chorea. He has used it
with very satisfactory results in practically all of his cases. This
remedy he continues, is pleasant to take, positively free from un-
pleasant symptoms and reliable in its results. Its use in chorea is
based on scientific grounds, because it is anti-rheumatic and its prop-
erties are analgesic, sedative and also hypnotic.
There is one adjunct to the medicinal treatment of this disease;
if not made use of, all therapy will practically be of no avail. I refer
to rest. That first thought in the treatment of choreic children is
rest: in bed if necessary. Without this the use of drugs will be
futile.

Chronic Intestinal Stasis*.—By W. Arbuthnot, Lane, M.S., Surgeon
to Guy's Hospital, London. I employed the term "Chronic intestinal
stasis" to indicate such an abnormal delay in the passage of the in-
testinal contents through a portion or portions of the gastro-intes-
tinal tract as results in the absorption into the circulation of a greater
quantity of toxic or poisonous materials than can be treated effectu-
ally by the organs whose function it is to convert them into products
as innocuous as possible to the tissues of the body.

Stasis of the small intestine with the associated infection of its
contents by organisms to which it is unaccustomed is not primary
but is secondary to a stasis in the large bowel.

In other words, if it were not for the presence of the large bowel
the conditions producing stasis in the small intestine would not arise.
If the caecum did not become overloaded the obstruction to the ideal
effluent, either by an acquired mesentery, an appendix hitching it
up, or by simple stasis would not develop. Consequently the con-
tents of the small intestine would not become infected by organisms,
the duodenum would not be blocked by the drag of the small intest-
tines obstructed at the end of the ileum, the mucous membrane of the
duodenum would not inflame and ulcerate, the biliary and pancreatic
ducts would not be infected and the obstructed outflow from the
stomach, with all its associated sequelae, would not occur.

Now I wish to show that the extraordinary improvement that
results from short-circuiting and the disconnection or removal of
the large bowel is due largely to the fact that the evacuation of the
small intestine is facilitated by its introduction into the pelvic colon,
and that the infection of its contents by organism which grow in the
stagnating material in the large intestine ceases abruptly. I do not
wish to suggest that all absorption of toxine takes place from the
stomach and small intestine, but I do maintain that the tract other
than the colon plays a very important part, and I believe by far the
most important part in the process of absorption. It appears to me
that the point of greatest difficulty in the passage of material along
the gastro-intestinal tract is through the last few inches of the ileum.
This is particularly the case when the caecum has been securely
fixed by acquired adhesions in the iliac fossa. In such cases the delay
of the effluent at the pelvic brim may be very great; indeed, in one
of my cases which Dr. Jordan has examined with bismuth and the
X-rays, the material remained in the terminal coil of the ileum for
as long as eighty-five hours without there being found at the opera-
tion any evidence of interference with the effluent by an acquired
peritoneal band or by an appendix in such a position behind the small
bowel as to control the passage of material through it in certain
positions. Now this form of simple obstruction, which cannot be
recognized at the time of the operation, and can only be determined
by bismuth and X-rays, I call the "simple static variety." I use this
term as opposed to the more obvious variety in which the bowel is
controlled by an acquired band or by an appendix, either of which
is readily recognized when the abdomen is opened, though the extent
of its effect on the effluent can only be gauged by bismuth and X-rays.

Amperbic Dysestentery*—By J. B. Wallace, M.D., Tampa, Florida,
Southern Medical Journal The clinical picture is an extremely vari-
able one. Probably the most constant indication is the history of
repeated attacks of diarrhoea. The disease is most often chronic,
characterized by exacerbations and remissions. During the remis-
sions, the bowels may show normal frequency of movement, or even
constipation. With the exacerbations, it is apparent that the
character and severity of the symptoms will depend largely upon
the location of the ulcers. If at, or below the sigmoid flexure, we
have tenesmus, frequent small stools, with blood and mucus. If
higher up, the evacuations may not exceed two or three a day. The
presence of blood and mucus is fairly constant, but varies greatly
in amount. This is the picture that is usually present. On the
other hand, we may have to deal with a severe manifestation of the
disease, characterized by fever, rapid pulse, abdominal pain and
tenderness, severe hemorrhages, and extreme prostration.

"In the laboratory diagnosis of amoebic dysentery it is essential
to bear in mind that there are different types of amoeba. In the
first place, there are many species of free living amoeba—the ordinary
type found in stagnant water in all parts of the globe. The fairly
common practice of drinking rain water or water contaminated by
surface drainage often leads to ingestion of these harmful amoebae,
and when the stool is examined they may be found. When we come
to the pathogenic species we should, if possible, determine just which
pathogenic species is present. Many different species have been
described as causing dysentery, but only a few have been proven
conclusively to be distinct species. Of these the most broadly dis-
tributed is Entamoeba histolytica, which is found in nearly all tem-
perate and warm regions of the globe, and is the type commonly
found in the laboratory examinations here in Florida.

"The Entamoeba histolytica usually has no nucleus, or if so,
only an imperfect one, faintly outlined, without a distinct nuclear
membrane, and situated near the periphery of the organism. En-
tamoeba tetragena has a large, distinct nucleus, centrally located, with
a thick nuclear membrane.
Diseases of the Respiratory System

Under Charge of

W. G. HOLLOPETER, A.M., M.D.

Professor of Pediatrics, Medico-Chirurgical College, Philadelphia

Infant Mortality in Bavaria J'1. of A. M. A.—According to the tables of the Royal Statistical Institute, 37,006 children under one year died in 1912, exclusive of stillbirths. This is a diminution compared with the previous year of 9,659 or 20.7 per cent. Among these there were 30,855 legitimate and 6,151 illegitimate children. If the number of infant deaths in this year is compared with the births, the infant mortality in 1912 amounted to 17.7 per cent. and that for 1911 to 23.3 per cent. About a third of the infants born did not live through the first month and more than half failed to survive their first quarter. The statistics show that illegitimate children have a greater relative mortality, especially in the first months of life than children born in wedlock. The mortality is relatively slightly greater in the country. The summer months of 1912 do not show so high a death-rate as those of 1911, a difference due to the excessive heat of the summer of 1911. As is well known, the danger from the heat is best avoided by breast-feeding, careful handling of the milk supply for infants, not over-loading infants with clothing, and care in cooling the living-room.

Idiopathic Epilepsy in Children.— In the Dublin Journal of Medical Science, August, 1911, No. 500 J. N. G. Nolan, called attention to the importance of the “Recognition and Treatment of True Idiopathic Epilepsy in Children.” He says the management of the child should be based on general hygienic and dietetic lines. Regulated periods of exercise and instruction must alternate with regular periods of rest and repose in Nolan’s judgment. Corporal punishment must be absolutely prohibited. All over-exertion strain, whether mental or physical, must be assiduously guarded against. The usual stimulating dietary of tea and meat had better be abolished, and milk and cereals substituted. Drug treatment had better be avoided at this stage, save the administration of general tonics and necessary aperients. A carefully-regulated life with a purin-free and a small daily dose of bromide is the treatment par excellence. The bromids do not require to be given in great quantities or at intervals during the day. The smallest dose which appears to exert a favorable influence over the fits should be taken as the maximum, and this never should exceed 60 grains. The effect is intensified by the full quantity being given at one time. The best time is at night or before rising, depending on whether the patient is subject to diurnal or nocturnal attacks. Plenty of water should be given with the dose, and sufficient laxative to insure a daily evacuation of the bowels. The best adjuvant is the syrup of Virginian prune.

95. Non-Gonorrheal Ophthalmia Neonatorum.—Suwermann examined seventy-two infants with ophthalmia and found twenty-four cases in which the Prowazek-Halberstädter inclusion bodies were found in the conjunctival secretion; in two cases there was mixed infection with gonococci. The incubation period in twenty cases was two days in one, five days in one, six days in two, from seven to nine days in fourteen, fourteen days in one and fifteen days in one. The inclusion-bodies virus has therefore a longer incubation than the gonococcus, and it is probable that all the tardy cases of ophthalmia neonatorum are due to this cause. The secretion also differs from that with the gonococci, there is more tendency to hemorrhage, the course is more
protracted and the cornea remains intact. Simple catarrh of the conjunctiva in the new-born is not of this character. He was not able to detect any connection between the cases and the trachoma of adults.—Deutsche Medicinische Wochenschrift, Berlin, August 7, 1913. Jl. A. M. A. Sept. 20, 1913. XLIII, No. 32.

**Spastic Paraplegia In Inherited Syphilis.**—In the Archives de-Medecine des Enfants, Paris, August, XVI, No. 8, A. B. Marfan outlines a form of spastic paraplegia for which inherited syphilis is responsible. In the first case of the kind he encountered (1894) it developed slowly and progressively in a boy of 8, and a syphilitic origin was suspected but no benefit was derived from specific treatment. In several of the six cases he reports the Wassermann reaction was positive. Left untreated, this heredosyphilitic paraplegia continues an inexorably progressive course, and when the lesions have been long installed the destruction wrought is irreparable. In his first case no benefit was derived from either mercury or iiodid. After the discovery of salvarsan, he began to treat this patient with it, and this has apparently arrested the progress of the disease as it has been stationary since. If treatment is commenced in the early stages of the paraplegia, there is every prospect of its arresting the progress and possibly realizing a complete cure.

On account of the hopefulness of early treatment and the slight chance of influencing the paraplegia after serious lesions are once installed, the early recognition of the condition is of extreme importance. It should be suspected whenever a child limps or shows any other disturbance in his gait. The paraplegia commenced in all his cases between the ages of 5 and 12. At first merely a very slight limp, the trouble beginning insidiously and slowly progressing until after a year or year and a half the child was unable to walk to school. The gait is of the spastic type; the child drags his feet, not lifting the toes, and he balances from left to right and right to left at each step. At first the disturbance may be more pronounced on one side. The legs are held stiff and lifted up all in one piece, the child finding it difficult or impossible to bend the hip, thigh and ankle. This difficulty in flexing the joint is the main disturbance in the gait. There is also a tendency to pes equinus and varus or valgus and the knees knock together. This spastic rigidity is scarcely appreciable when the child is seated or reclining. The legs are slightly rotated inward, with adduction, but they can be moved easily and the joints flexed except that as the foot is passively flexed upward the Achilles tendon may oppose a fibrous resistance.

The muscles are not weak nor hard nor atrophied, and the spastic rigidity of the legs is accompanied by only very slight paralisis. But even in repose the tendon reflexes are seen to be much exaggerated and there is epileptoid trembling of the foot. Rubbing the front of the leg or tickling the sole induces the Babinski sign. The electric responses are normal or nearly so, and there are no sensory disturbances, no pains, no atrophy or weakness of the muscle. By the end of ten years in his first case the patient was then 18, and was unable to walk unless supported by another person, but the affection had not changed its character in any way; there were still no sensory or sphincter disturbances and no atrophy of muscles. Another differential point is that there are generally the pupil signs characteristic of syphilis. In three of his six cases there was interstitial keratitis and two of the children were mentally backward. Marfan discusses the pathologic changes in the spinal cord probably responsible for the paraplegia, but has had no opportunity to examine a case post mortem.—Jl. A. M. A., Sept. 27, 1913.

**Epidemic Streptococcus Sore Throat.**—Dr. Joseph A. Capps, of Chicago, (Journal of the American Medical Association, Sept. 6, 1913) calls attention to three epidemics of streptococcus sore throat occurring in the last two years. He states that these epidemics are a
recent scourge and that no mention is made of them in text books. In the three outbreaks about 1,400 persons were attacked in Boston, 1,000 in Baltimore and 10,000 in Chicago, although but 2,916 records were kept. The cases were reported during the winter and spring, and from throat cultures or peritoneal exudate of fatal cases, a hemolytic capsulated streptococcus was obtained. The outbreaks were sudden, at times several members of a family being affected simultaneously. In all the epidemics the clinical symptoms were of the same type; intense hyperemia with or without a grayish exudate, enlargement of the cervical lymph nodes, extreme prostration and a tendency to relapse. In all the common sequels were otitis media, peritonsillar abscess, erysipelas or other form of skin eruption and in many cases arthritis, endocarditis, and myocarditis occurred; pleurisy and pneumonia often occurred with fatal results, but the most dangerous complication was peritonitis.

The source of the infection was traced to one dairy in every instance, the percentages being in Boston 70, Baltimore 65 and in Chicago 72. These percentages are significant from the fact that the suspected dairy supplied only a small portion of the city. Beyond doubt the secondary cases were the outcome of contact, hence we must regard the importance of contact in the transmission of streptococcus infections.

From the evidence submitted we find that the causes of contamination were as follows:
1. Streptococcus in the mixed milk at the collecting plant or at the farm.
2. Mastitis in cows, from whose udders streptococcus is obtained.
3. Streptococcus sore throat in the milkers.
4. Streptococcus sore throat in other employees who handle the milk.

C. E. A. Winslow in studying the epidemic in Boston could discover no evidence of the disease in the cattle or in the milker, but he did find evidence of sore throat in other workers on the farm and in the dairy. In Baltimore, W. R. Stokes found the streptococcus in the raw mixed milk of one herd, but could not trace the infection to the cow, nor could he find any case of sore throat among the workers of the farm. In Chicago the source of contamination was traced directly to the inflamed udder of the cow in cultures from the throat of the milker.

That the epidemic is the result of direct contamination by human carriers has no foundation, since the contamination is apt to be occasional, and the epidemic indicated that the contamination had existed continuously for several weeks, also the quantity of infectious material disseminated by a human carrier in coughing is too small to give rise to such disastrous results. A mastitis infection with streptococcus would explain the volume of contaminated milk with enormous numbers of organisms.

In comparing the epidemics, at first glance, it would not look as though the source of contamination was identical, because of the absence of mastitis in some instances, this, however, has been cleared up by recent investigations. A healthy cow has been infected through the udder with a human strain of streptococcus hemolyticus by means of a contaminated hand coming in contact with an abrasion on the teat in milking. This infection revealed itself by the presence of pus and numerous streptococci, and continued for several weeks. The bag, however, did not become caked.

Capp believes:
1. That streptococcus mastitis will be recognized as the most important source of extensive epidemics of septic sore throat.
2. That the mastitis may originate by transmission of human streptococcus through the medium of the milker seems to be established.
3. Whether or not mastitis due to a specific bovine strepto-
coccus may become virulent to man is a problem yet to be determined.

4. When we come to a consideration of prophylaxis all other measures and precautions sink into insignificance when compared with thorough pasteurization.

5. A general enforcement of pasteurization would put an end to a malady that otherwise promises to be one of the most formidable and widespread of the infectious diseases.

Orthopedic Surgery
Under the Charge of
JAMES K. YOUNG, M. D.

Assistant by
A. BRUCE GILL, M. D.

Assist. Surgeon to Widener Memorial Industrial Training School for Cripple Children, Philadelphia.

Diseases of Joints and Bone Marrow.—By Leonard W. Ely. Am. Jour. of Surg., July, 1913. (Continued). The conservative treatment of joint tuberculosis should secure two results, prevention of deformity and immobilization of the joint. These results are secured by the use of plaster casts, braces, and other appliances. Deformity should be reduced as far as possible before the application of braces. When a joint is immobilized it should be fixed in the most useful position in case ankylosis should result.

The Bier hyperemic treatment may be worth a trial at times, as well as the employment of injections of sterile substances into the joint.

Radical treatment consists in destroying the function of the joint. A simple resection of the joint is the simplest measure. It is often impracticable and is moreover, entirely unnecessary to remove all diseased bone. If obliteration of the joint is secured and bony union occurs between the ends of the bone, the tuberculous disease ceases. The operations of Hibbs and Albee upon the spine secure immobilization of the spine by transforming the sinus processes into a continuous bony splint.

Abscesses must be treated in such a manner that secondary infection is absolutely avoided. Small, deep-seated, symptomless abscesses should be let alone. Large superficial abscesses should be aspirated. The author is very doubtful of the good effect of the injection of antiseptic agents as there are no tubercles in the abscess wall to be killed. Psoas abscess should be aspirated before it leaves the pelvis and gets into the thigh. Retropharyngeal abscess should never be opened through the mouth, and is best reached from the side of the neck.

Infected abscesses may be treated by the injection of bismuth paste, or of the paste without the bismuth.

Chronic gonorrhea arthritis usually begins as an acute inflammation and it persists until the primary lesion in the genito-urinary tract becomes healed. It affects the synovia much more than the bone. If it continues until the function of the joint is destroyed the disease then ceases. Diagnosis is sometimes difficult.

Syphilitic arthritis is not so rare as has been considered by many, and it is frequently unrecognized and treated under a wrong diagnosis.

The etiology of arthritis deformans is as yet not fully established.
But the evidence that is being constantly gathered points to the infection theory. In considering a case of this character, whether it be simple or severe, one should examine most carefully into all parts of the body for a possible source of infection or toxemia. A simple synovitis that clears up without leaving any appreciable change in the joints may be "arthritis deformans" just as well as the severe well marked cases of this disease. It is merely a matter of degree between the two cases.

The author then discusses the pathology, diagnosis, and treatment of both simple and severe arthritis deformans.

Tendon Transplantation in Talipes from Anterior Poliomyelitis.—By B. F. Zimmerman. Am. Jour. of Surg., Aug., 1913. The author advocates the transplantation of tendons, combined at times with arthrodeses, as the best method of correcting the deformity of talipes due to poliomyelitis. He performs the preliminary operation of forcible correction, if necessary, and keeps the foot in plaster cast for a month before transplanting any tendons.

Only a strong healthy muscle should be transplanted. The transplanted tendon should run parallel for a considerable distance with the tendon in whose place it is to act. The tendon should be under the proper amount of tension after being transplanted; it should be in a slight tension when the foot is in a slightly over-corrected position. The author thinks the best results are obtained in cases of paralytic varus. when the strong tibialis anticus can be utilized.

An Operation for Flat-Foot.—By W. P. Carr. Am. Jour. of Surg., July, 1913. The author treated a case of traumatic flat-foot as follows: He sawed through the os calcis between the ankle joint and the attachment of the tendon Achillies, slipped the posterior part downward three fourths of an inch and fastened it there with a wire nail. The casts were removed from the feet in a month, and the nails were taken out after five months. Previous to the operation the patient walked with pain and difficulty by the aid of two crutches. Three months after the operation he walked several miles daily and worked all day at his trade as an electrician. The author recommends this operation in severe cases of flat-foot that have not yielded to simple methods of treatment.

Anomalies of the Sacro-Lumbar Articulation.—By E. S. Hatch, New Orleans Med. and Surg. Jour., August, 1913. The author reports six cases illustrating these anomalies, the importance of which Goldthwaite has pointed out and emphasized. The transverse processes of the fifth lumbar vertebra are often shown by the X-ray to be enlarged and to come into contact with the sacrum or ilium or even to form an articulation with them. This condition causes a strain upon the sacro-iliac and sacro-lumbar joints which leads at times to marked painful symptoms.

In treating these cases the sacro-iliac joints must be supported by strapping or by belts or by braces, and at times the spine must be held erect and the lumbo-sacral joint protected by a spinal brace.

Treatment of Arthritis Deformans.—By Delaney, Med. Council, Sept., 1913. The author is inclined to believe, contrary to many writers, that this disease is not a bacterial origin, but is entirely due to disturbed metabolism. In its treatment he advocates the use of various forms of mechano and electro-therapy, and particularly recommends as well the internal administration of the desiccated thymus gland.
Infectious Diseases.
Under the Charge of
ST. GEO. T. GRINNAN, M. D.
Associate Professor Pediatrics, Medical College of Virginia; Visiting Pediatrist, Memorial Hospital, Richmond, Va.

Local Measures in Treatment of Diphtheria.—The Presse Medicale of August 2, XXI, No. 63 contains an article on the local treatment of Diphtheria, by P. J. Menard. He reports research in which he found that diphtheria antitoxin seems to be a particularly favorable culture medium for diphtheria bacilli. Both in the test-tube and in animals, the bacilli thrived particularly well in a number of makes of antitoxin. He found it possible to cultivate the diphtheria bacilli for months in the antitoxin, although they lose some of their virulence and some of their staining properties. The facts observed indicate the necessity for the use of local disinfectants as adjuvants to general antitoxin treatment in diphtheria.—Jl. A. M. A. Sept. 20, 1913.

Differentiation of Phlegmonous Angina and Diphtheria.—G. Charlier gives a review of his experience with 110 cases of the former and emphasizes the danger of mistaking true diphtheria for ordinary tonsillitis or quinsy and incising. In five cases in which this was done the patients died and in a sixth case, although the patient recovered, yet he was long in grave danger. A history of preceding attacks of peritonsillitis is a great aid in differentiation; also the age, as diphtheria affects mostly children while 83 per cent. of the peritonsillitis patients were between 16 and 39; 9 per cent. over 40, and the other 9 per cent. were between 9 and 15. Another aid in differentiation is absence of known contact with diphtheria. Tenderness of the swollen part of the throat occurs early with peritonsillitis, but Charlier has never known of this with diphtheria. There was no hoarseness in ninety-four of the 110 cases, and there was not the peculiar odor of the breath common in diphtheria. On account of the great tendency to recurrence of peritonsillitis it seems wise to operate on the tonsils in such cases. Sorensen says in regard to the danger of incision in a case of diphtheria which has been mistaken for phlegmonous angina that it is not the incision which renders the prognosis so grave in such cases but that the fact that when diphtheria commences with a phlegmonous lesion it is of an exceptionally severe type. In any event, Charlier advises to be wary of using the knife for a supposed phlegmonous angina until certain of its non-diphtheric character.—Jl. A.M.A., Sept. 27, 1913, Hygieia, Stockholm, June, LXXV, No. 6.

Luetin Reaction in Infancy.—In the American Journal of Diseases of Children, Chicago, A Brown of New York gives experience in Luetin Reaction in Infancy. He states that he made 134 tests in his studies and classifies them as follows:

Thirty-four were in patients with hereditary syphilis, and 100 in controls. Of the syphilitic infants all but four gave a positive luetin reaction. In the 100 controls, ninety-six were definitely negative and four gave a doubtful reaction. All of the negative cases were also negative to the Wassermann test. In all the cases regarded as syphilitic the diagnosis was confirmed by the Wassermann reaction and the clinical history. Of the syphilitic patient with a negative luetin the hemoglobin was very low or the skin much thickened so that one could not be certain of a positive reaction. Of the thirty positive luetin cases, fifteen showed small pustules; the other fifteen reacted in the form of a definite inflammatory papule. In addition it
was observed that the more energetic the treatment the more distinct
was the reaction. Especially was this the case after salvarsan injec-
tions. There were fourteen infants in whom the test was repeated
after injections of salvarsan; of these, eight became negative during
an average period of five months after the first injection of salvarsan.
In each instance the Wassermann reaction corresponded with the
leu tin test, i.e., it became negative at or about the same time. In
the remaining six positive cases the reaction was present at the time
of the last test made, which averaged three and a half months after
the first injection of salvarsan. In this group also the Wassermann
corresponded with leu tin test.—Jl. A. M. A., Sept, 27, 1913.

Intravenous Administration of Diphtheria Antitoxin.—In the
California State Journal of Medicine, San Francisco, R. B. Mixsell
contends that the intravenous administration of antitoxin in young
children, although not always easy, is perfectly safe when done with
skill and care. The operation does not, as a rule, commend itself to
private practice and ordinarily should be performed only under the
best of conditions. There appears from a study of 158 cases to be
so little clinical difference in the results obtained from the intravenous
and subcutaneous exhibition of antitoxin that we are not warranted in
asserting that one method is more efficacious than the other. Excep-
tive in severe cases, therefore, and cases seen late in the disease, the sub-
cutaneous method is to be preferred. Antitoxin given subcutaneously
should be given in large initial doses.—Jl. A. M. A., Sept, 20, 1913.

Treatment in Diphtheria.—Wilson claims that the carriers are
best treated by sunshine, segregation and “vaccine therapy.” The
best results in the treatment of the disease he says are obtained by
large doses of concentrated antitoxin, 10,000 units being the initial
dose, given intramuscularly with a period of twenty-four hours between
doses, except, of course, in the laryngeal type, and in this type the
stenosis and cyanosis serve as guides.—New Orleans Medical and

Does the Desquamated Epithelium Carry the Contagium of Scarlet
Fever?—There is a growing belief that it does not. Thus, Doty in a
paper read at the Congress of Hygiene at Washington, last fall, ascrib-
ed the transmission of the disease to contact with the throat and
nasal discharges and not to fomities—that is, the desquamated scales
of the later stages of the disease are harmless. This, in the main,
seems to be the opinion of the numerous authorities quoted by Mead
in the Medical Record. While most of these consider the scales as
a possible factor, the majority are of the opinion that they play little
part in the transmission of scarlatina. In support of this point of view
Mead reports several cases, as follows:

“About two years ago I was asked to look over the children in
one of the public schools in the City of San Diego for a suspected case
of scarlet fever. There were a few cases in the city at the time and
public attention had been called to the matter. I found a little girl,
the child of Christian Scientist parents, in the acute stage of primary
desquamation, in which stage she had been at school for five days. I
took her to her home and interviewed the parents. No physician
had previously seen the child. She had had a fine scarlet rash some
two weeks previously and a sore throat and the parents thought she
had possibly had scarlet fever.” The schoolroom was carefully fumi-
gated, her desk treated, her books and school paraphernalia removed
and burnt. I expected an outbreak among the pupils of the school. No
a single case developed.

“A year later I found a Mexican child in another school in almost
similar condition. She had been kept at home for the sore throat
and rash, sent to school without any physician having seen her while
the desquamation was beginning. Similar precautions were taken.
Again, not a single case developed.
"It is, of course out of one's power to experiment with cases, but I subsequently allowed a child under my care to circulate freely among the members of his family, many of whom were children, while in the primary desquamating stage, and to go out, greatly to the indignation of his neighbors. He was not allowed to come in direct contact with other children outside, as far as I am aware. There was no further infection in the home or outside."

**Infections of the Upper Urinary Tract in Pregnancy and Childhood.**
R. M. Green finds that in infants and children infections of the upper urinary tract, though infrequent, are likely to occur apparently without adequate antecedent cause. The onset is acute. The clinical picture is definite, though often missed on account of their simulation of other infections conditions. The two most usual forms are acute pyelitis and acute inflammatory nephritis. The latter is most usually hematogenous in origin, while the former probably proceeds by lymphatic extension from the intestine. Predisposing causes are calculi, constipation, phimosis, anal fissures and foci of infection elsewhere. The classical symptoms of both are pyrexia, pyuria and tenderness in the costovertebral angle. The differential diagnosis depends upon an examination of the urine. The treatment consists in rest, milk diet, aqueous diuresis, moderate catharsis, urotropin with sodium benzoate, potassium citrate, and vaccines. Surgery should be resorted to only as a final measure. (Bost. Med. and Surg. Jour., May 1, 1913)

**Leucocyte Counts in Epidemic Meningitis and Pneumonia.**—Dr. Julius H. Hess, Medical Record, had found few studies of the leucocyte count devoted to infants and after reviewing it in its relation to infections in general gave detailed findings in fifty cases. He said that blood counts could only be valuable when considered with other clinical symptoms. From the counts made in epidemic meningitis before, during, and after treatment by serum he concluded that each case must be studied individually not only as to the presence of meningitis but as regards secondary infections, that the blood count was of no especial value, and that lumbar puncture promised the most help. From the leucocyte counts in different types of pneumonias he found that, contrary to ordinary teachings, almost all pneumonias in children from three to five years were of the lobar type, that the cases described at autopsy as bronchial were of secondary nature. He thought this a valuable aid to diagnosis and said that generally a high count indicated a strong infection.
TUBERCULOSIS.

No subject in medicine has received more attention, in recent years, than the cause, modes of propagation, and the methods of prevention of Tuberculosis—the "great white Plague." This disease is responsible for the one-seventh of the mortality between the ages of fifteen and thirty-five. It is a ubiquitous malady, but it is especially the scourge of urban populations, of overcrowding in metropolitan centers, poverty and unwholesome locations and unhealthy occupations particularly in the lower classes.

During recent years much has been done for the amelioration of tuberculosis sufferers, particularly the dissemination of thorough educational campaigns, of ideas in hygiene sanitation, poor food, improvement in ventilation of living quarters, suitable clothing, and other means.

How far the mortality of this disease has been lessened by a better understanding of the causation of the disease, by segregation, and by improved methods of treatment is not easily determined, and is still a matter of controversy.

The racial significance of Tuberculosis raises some most difficult questions which are still unsettled. The disease certainly "runs in families"—to use the popular expression—but how far that is explained by special proclivity and how far by propinquity is still debated. It attacks by preference those who are of feeble physique, but the exceptions to this rule are numerous and significant. Not seldom it carries off the most intellectual of men, and the fairest of women. It is especially the scourge of civilization, and finds its explanation largely in the consideration that the human race is still imperfect-
ly adapted to the conditions of civilized life, of which the life in cities is one of the main features. It is well known that when some of the primitive races come to reside in cities they are decimated by Tuberculosis. This is true of the Laplanders, the Kirghiz of the Russian Steppes, and the Red Indians of North America.

It would seem that Tuberculosis is, in the main, a factor of destruction and not selection, that it is dependent mainly upon imperfect adaptation to the conditions of civilized life that it can be successfully controlled by measures directed to the improvement of social conditions and the promotion of a higher level of nutrition.

THE IMMUNIZING PROPERTIES OF HUMAN TUBERCULIN.

Tuberculin has been more or less before the public and medical profession since Koch introduced it twenty years ago when it was hailed by his too enthusiastic followers as the specific for tuberculosis.

A comparatively short trial of this method of treatment was sufficient to dissipate these views, and from a lofty eminence of anticipation tuberculin fell into an abyss of disrepute.

However, in recent years to some extent, it has regained its position and amongst a large following of the medical profession and is again pointed to as one of the most valuable means of treating tuberculosis successfully. The remarkable statements which have been made with regard to the efficacy of tuberculin are looked upon with scepticism by a small portion of the profession.

At the Fifth Annual Conference of the British National Association held in London during the past summer the opinions expressed by authorities on the merits of tuberculin as a therapeutic agent were widely divergent. Perhaps the following statement of Professor Sims Woodhead "that under proper conditions tuberculin exerted a favorable influence on the course of tuberculosis and stimulated beneficial reaction in the tissues, but that up to the present time it had not been possible by its use to confer complete immunity in man or ani-
mal and that while it was an agent of enormous power and subtlety, under certain conditions it might be as a great a power of evil as for good” will commend itself to most as a reasonable view founded upon the facts already known.

According to Dr. Herman Sahl no complete immunity to tuberculosis can be obtained by previous tuberculin treatment of early tuberculosis by a protective tuberculin treatment of the still healthy individuals. Sahl points out that this is the more striking when it is realized that Behring has succeeded in immunizing cattle against tubercle urine, highly virulent and fatal for control animals, and this by means of the injection of human tubercle bacilli of low virulence Sahl says that if the action of living tubercle bacilli, is equivalent in every respect to local and general tuberculin action, if the immunity of Behring’s cattle and the phenomena of immunity in the super-infected guinea pig both depend on hyper sensitiveness to the tubercle bacilli if the sensitivenese is caused by the lysin content of the organism which produces a toxin from the bacilli; if the active substance of the tubercle bacilli is really tuberculin as it is assumed; lastly if the lysin of the tubercle bacilli is also lysin of the tuberculin then it seems only natural that immunity to tuberculosis could be obtained not only by injection with living tubercle bacilli of lowered virulence, but also by purely chemical tuberculin action, he, therefore, concludes that there is a difference between real immunization and an immunizing treatment, the describet describe the action of tuberculin as, an actively immunizing curative process, but the immunizing effect produced is only relative, no true immunity being established. Tuberculin increased the patient’s resistance by the stimulation of those physiological and anatomical processes by means of which tuberculosis so often heals spontaneously. Sahl finally explained that in any case with respect to any possible method of active immunization by means of tuberculin, one thing seems quite certain that no method can be successful which does not produce morbid symptoms in the individual due to the lysinized tuberculin and hypersensitiveness, for the reason that the lysin formation had been insufficient, possibly because the protective action of the lysin had been paralyzed by the appearance of antitoxic actions.

In a valuable paper published in the journal of Vaccine Therapy September 1913, Dr. R. W. Allen calls attention to
the fact that the amboceptor content of the serum appears to be of light importance, and that it would seem that of all the various immune or antibodies that are at present known, not one seems to play a predominant or even an important part in the production or maintenance of immunity, this then must depend upon some as yet undiscovered enzyme of antibody or upon some unknown biological or chemical constituent or constituents of the tissues, Allen proceeds to point out that the evidence with respect to the action of such substances as lysin, agglutinin, precipitation, or opsonin is too conflicting to warrant an authoritative statement on the subject and doubt that there is a little question that the metabolism of the tuberculosis is prevented. Allen believes that there is existent a considerable increase of excretion of phosphates in the urine, which likewise as Hale White showed some years ago, contains some peculiar constituent which inhibits putrefaction even after weeks or months of exposure to the air; the alkalinity of the blood appearance to be diminished. Perhaps, therefore, it is in this direction that the key to the solution of the problem of immunity to the bacilli tuberculosis is to be found. It cannot be denied that while the tuberculin treatment seems to be making great strides that the practical results so far have not been commensurate with the efforts put forth.

PIORKOWSKI'S TURTLE TUBERCULIN.

The rapid advances during the past two decades in the treatment of tuberculosis, especially from a biological standpoint has been one of the most gratifying accomplishments of medical science. Notwithstanding the fact that the "great white plague" is still one of the most formidable foes to humanity, there looms in the distance, a rift in the darkening cloud, and a light appears which medical science presents in the form of TURTLE TUBERCULIN, which in the hands of our German Conferes promises a great and glorious blessing to humanity, not only as a curative vaccine, but, at the same time as a prophylactic antigen to the tubercle bacilli. But, it behooves us to be cautious, lest our enthusiasm be thwarted by over excessive zeal. The role of tuberculin, therapeutically, is a mysterious one, and while in proper and suitable cases it has achieved most pleasing results yet if used indiscriminately,
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by those incompetent to judiciously prescribe or administer it, tuberculin might be brought into innocuous desuetude.

The physiological action of Piosowski's turtle tuberculin, is very satisfactorily explained by Professor Piorkowski in an article which appears in this issue, and which we heartily commend to our readers, its specific action, as an immunizing agent is best explained by Ehrlich's side chain theory. Its discoverer claims that it exerts a direct stimulant action to the antibodies of tuberculosis exerting far greater beneficial effects than human tuberculin, even when the latter is administered by a biological expert in the most carefully guarded and graded doses.

At the International Medical Conference held in Vienna September 22 to 28th, the subject of tuberculosis was discussed by Dr. W. J. Gailbraith who said: "The turtle serum or tuberculin of Dr. Piorowski of Berlin was most favorably commended by the convention as the best and most potent remedy for the cure and alleviation of tuberculosis now before the medical world, and the general public.

A clinical report of a thousand cases embracing all types of tuberculosis coming from the tenement house districts of Berlin with 60 per cent. cures emphasizes the curative value of turtle tuberculin.

In a private communication to the Editor Dr. Piorkowski says, "test on animals have shown that extremely large doses of turtle tuberculin can be injected without having any reaction. Even the sensitive guinea pigs stand the injections very well; they get little lumps which entirely disappear again, the animal afterward becoming immune, even if strong poisonous, virulent human tubercle bacilli is injected. When applied to human beings the immunity is a complete success. If, vice versa, human tubercle bacilli is first injected followed by turtle tuberculin the results are good up to 60 per cent".

From the above opinion of Dr. Piorkowski it is believed that the day is not far distant when children and adults may be as safely immunized against tuberculosis as Behring's antitoxin now gives immunity to diphtheria.

FRIEDMANN'S VACCINE

Until recently the medical profession has maintained, reserved, scientific skepticism towards Friedmann's vaccine says
the J'le of an M. A. in a recent editorial. In view of the fact, however, that it seems impossible to find a single reliable favorable report, the time has come for an end to the hope that in the Friedmann vaccine we have a cure for tuberculosis. Moreover, since the methods of exploitation have become so obviously commercial, with what seems to be an utter disregard for the humanitarian viewpoint, the time surely has come for not only definite stand against the sale of this product but for positive opposition to the methods used by those financially interested in the promotion. Friedman secured the financial results which widespread newspaper exploitation brought him, and slipped away, leaving a host of ‘Friedman institutes’ to divide him with the dollar of the hopeful and credulous sufferers. These ‘institutes’ are being organized in various parts of the country and the personnel of those connected with these organizations in practically every instance is sufficient to suggest their true nature. Steps have been taken in several states to check this exploitation of the consumptive for commercial gain, especially in Idaho, Iowa and Arkansas. In others the weakness of local ordinances has made this impossible. What is now needed is that these unscrupulous attempts should be met with an extensive campaign of education of the public concerning the dangers and worthlessness of this treatment.

VON RUCK’S VACCINE.

In this issue will be found a lengthy article by Von Ruck of Ashville, N. C., which reports his experiences. The principal differences between this work and that of Friedmann is that Von Ruck does not use living tubercle bacilli, but what might be called THE ACTIVE PRINCIPLES of the tubercle bacilli, that is, the different extractions. Von Ruck’s curative remedy, the watery extract of tubercle bacilli, has been before the profession since 1897 and has accomplished fully as good clinical results as Friedmann’s remedy, although not in such short periods of time. His most recent remedy, the prophylactic preparation, has kept the experiment animals entirely free from tuberculosis; in fact animals which have been immunized and then infected considerably longer than a year ago, are still alive and in good health, and in a few that died from accidental causes, not a trace of tuberculosis could be found.
Doctor von Ruck has shown that it is not necessary to inject living tubercle bacilli for the purpose of successful immunization, but for a proper combination of the various extractives will accomplish this purpose with equal efficiency and certainly with far greater safety. He has even succeeded in removing the suppurative action of the tubercle bacilli by a proper balancing the contents in fats, or, perhaps better, by removing the excess of fats and waxes from the tubercle bacilli, which he had found to be responsible for abscess formation after hypodermic injection.

In children who are susceptible to prophylatic inoculation with this remedy, which (N. B.) entails no risk, for it does not contain living tubercule bacilli, the most surprising clinical improvement was shown, especially a decided improvement in nutrition, a disappearance in all clinical signs where they had existed, of lung signs, of enlarged lymph, of anemia, etc., and what is more significant, the sera of all these children showed a progressive increase in tuberculosis antibodies, agglutinins, amboceptor, opsonins. Further, they showed and continue to show Lytic Power, the power to dissolve tubercle bacilli In Vitro.

A PROPHECY OF THE FUTURE

"It is possible to believe that all the past is but the beginning of a beginning, and that all that is and has been is but the twilight of the dawn. It is possible to believe that all that the human mind has even accomplished is but the dream before the awakening. We cannot see, there is no need for us to see what this world will be like when the day has fully come. We are but creatures of the twilight. But it is out of our race and lineage that minds will spring that will reach back to us in our littleness to know us better than we knew ourselves, and that, will reach forward fearlessly to comprehend this future that now defeats our senses.

"All the world is heavy with the promise of greater things, and the day will come, one day in the unending succession of days, when beings who are now latent in our thoughts and hidden in our loins, shall stand upon this earth as one stands upon a footstool, and laughs, and reach out their hands amid the stars."
SPECIFIC RESISTANCE IN TUBERCULOSIS
Its Increase by Prophylactic Vaccination, with Special Reference to Children.

DR. K. V. RUCK AND DR. H. J. ACHARD
Asheville, N. C.

At the International Tuberculosis Congress in Washington, 1908, Irving Fisher (1.) presented statistical data on tuberculosis according to which it was estimated that, in 1906, a total of 138,000 persons died of tuberculosis in the United States and that 5,000,000 of all persons then living in our country will die of the disease.

The economic loss to the nation from death due to tuberculosis is over $8000. per death, and the total in the United States exceeds the sum of $1,100,000,000 per annum, two fifths of which ($440,000,000) must be attributed to other forms of tuberculosis than the pulmonary.

To cope with this evil which, translated in figures of dollars and cents is staggering, the Crusade against Tuberculosis in this country expended, in 1912 alone, the sum of $20,000,000 dollars and is spending similar sums by the year. Sanatoria, dispensaries, invalid homes, children's homes, floating hospitals, open air schools, preventoria, etc., have been and are being erected in great numbers to take care of the actually tuberculous, and also of those who show the earliest clinical signs of tuberculosis, or who appear to be in danger of acquiring it, for purposes of prevention. The entire far reaching mechanism of the social service, of district nurses, mother's classes, popular lectures, school inspection and factory inspection, etc., has been set in motion to find out the cases of tuberculosis at an early stage when they can derive most benefit from suitable treatment. Municipal and state authorities as well as business concerns, fraternal societies, private philanthropists and
life insurance companies have enlisted in this gigantic struggle, with the firm determination to clip the fangs of this terrible monster, the white death.

And yet, by all these great efforts and sacrifices the evil is only touched in its offshoots as it were. Persons ill with tuberculosis are cured or their lives are prolonged, and incidentally they are rendered harmless to a certain degree as possible sources of infection for others. Some early cases and predisposed persons are protected against the acquirement of clinical tuberculosis, by suitable treatment through which their nutrition and their natural resistance is increased. A more and more efficient follow-up system of the results of school inspection will aid in eliminating many of the future consumptives by relieving and removing the conditions which predispose them to the disease. In many portions of the country the mortality from tuberculosis has been lowered, and patients apply for examination and treatment far more frequently and at earlier stages than was the case formerly. In so far the crusade against tuberculosis has matured tangible results. But on the other hand it must be admitted that the frequency of tuberculosis has not only not diminished, but appears to have increased, owing to the more exact and refined methods of diagnosis by which tuberculosis can be recognized at a stage at which clinical signs, that may be present, as yet lack every characteristic feature.

In recent years the struggle against tuberculosis has entered into a phase which promises to produce more far-reaching and lasting results and to go more deeply at the root of the problem. We refer to the increasing efforts which are being made towards childhood prophylaxis, which followed upon the seemingly remarkable discovery that tuberculosis is actually a disease of childhood.

Assertions to this effect have been made as long ago as 1892 by Felix Wolff (2), in 1897 by Petruschky (3) and in 1899 by Heubner (4) before the Berlin Tuberculosis Congress. The fact has even been indicated in 1888, at the first French Tuberculosis Congress, when Babes (5) reported that in more than one-half of the children, dead from any cause whatever, tuberculosis of cervical, bronchial and mesenteric lymph glands was found at autopsy; and that, in 1887 for instance, 65 out of 93 autopsied children’s bodies showed such lesions, although tuberculosis had been the cause of death in only 13 of
the 93 cases. The assertion of v. Behring (6), that the actual source of adult phthisis must be referred to milk infection during infancy, stimulated the investigations concerning the true origin of phthisis and concerning the frequency of childhood infection; and the researches of Naegeli (7) for healed and obsolete, as well as latent and inactive tuberculous lesions in the organs of persons dead of other diseases than tuberculosis were supplemented by those of many other anatomists, with the results that the frequency of tuberculous lesions found in many series of autopsies was placed at figures varying from fifteen to ninety per cent of all bodies examined.

The finding of latent, inactive and even of healed lesions in the bodies of children, however, was at variance with the prevailing opinion that children were comparatively non-resistant to tuberculosis and that infants succumbed to it almost without exception. This difficulty was removed by the results of MaeFadyen & McConkey (8), Gaffky (9), Weichselbaum & J. Bartel (10) and of others who found virulent tubercle bacilli in lymph glands of children, and even of infants, in which microscopically no evidence of tuberculosis lesions could be discovered. It was thus shown that tuberculosis infection must be strictly differentiated from tuberculosis disease and that the organism may, after infection, resist the development of active tuberculosis. This resistance, evidences of which had long been noted in bodies at all ages, although the cause had not been appreciated, explained how it is possible that "most people are a little tuberculous" or at least infected by tubercle bacilli, while a comparatively small number develop the active disease and still less succumb to it.

The great frequency of infection with tubercle bacilli was further proved by the results of diagnostic tuberculin applications which were undertaken for the purpose of discovering lesions at a time before clinical symptoms had become manifest. This mode of investigation was made use of particularly after v. Pirquet had elaborated his cutaneous tuberculin test, but before him the employment of the subcutaneous method had likewise produced interesting results.

H. Kossel (11) had reported upon 63 children of 1-10 years of age, of whom 28 or 44 per cent reacted to subcutaneous tuberculin injections, although only 4 of the 28 showed clinical signs of tuberculous disease.

According to a letter from Budapest to the Berliner
klinische Wochenschrift (12), Berend & Preisich found in a considerable number of children that the tuberculin reaction occurred promptly in all cases of occult tuberculosis, including scrofulous of internal organs. Eighty per cent of all children with palpable lymph glands had reacted to the test.

The advantages to be derived from tuberculin tests, for statistical investigations, received particular emphasis through the publication, by the Austrian Staff Surgeon, K. Franz (13), of his results in the recruits of a Bosnian regiment. In a first series of 400 recruits, who were selected because tuberculosis is very frequent in Bosnia and in the Herzegovina, 245 or 61 per cent reacted to 1-2-3 subcutaneous injections of tuberculin, up to 3 mg; 10 or 2.5 per cent remained doubtful and 145 or 36.5 per cent did not react.

As these recruits had been in service but little over one month, they probably had not acquired the infection in this short time but had brought it from home. Representing, as they do, the peak of the male population and showing no signs of tuberculosis on repeated careful examination, the results demonstrate the possibility of a latent infection on the one hand, and on the other the great frequency of exposure to infection in the portions of the country from which these recruits were drawn.

Of a second series of 321 Bosnian recruits, who were subjected to examination the following year, under exactly like conditions (14), 222 and 68.8 per cent were found to react. By way of comparison, 279 recruits of another regiment, supplied mostly from Hungarian counties, were examined and of these 108 or 38.7 per cent responded with a positive reaction.

During their three years of active service and the three or four years of service in the reserve all these men were under more or less constant medical supervision, and it was found that during this period of six, resp. seven years: of the 1st series of 400 Bosnians, 32 or 8 per cent. acquired clinical tuberculosis; of the second series of 323 Bosnians, 23 or 7.12 per cent. acquired clinical tuberculosis; of the third series of 279 Hungarians 9 or 3.22 per cent. acquired clinical tuberculosis. Some of these men had not reacted to the diagnostic tuberculin injections in 1901 and 1902. Among a total of 1002 recruits, 575 or 57.38 per cent. had reacted, and 64 or 6.38 per cent. had become clinically tuberculous.

These two communications by Franz possess an interest
which is the greater as they record the results in a considerable number of subjects favorable to our inquiry, both at the beginning and at the end of a prolonged period of observation. Although the investigations made with the cutaneous tuberculin test do not possess this advantage, they will nevertheless serve to inform us of the frequency with which latent or inactive tuberculous foci may occur without causing clinical signs of tuberculous disease.

In the following tables we have collected the results of several authors who determined the frequency, in children, of positive reactions to the cutaneous tuberculin test. It is to be noted that these children were partly inmates of hospitals, some of them suffering from other diseases than tuberculosis, partly they were inmates of nurslings' homes, partly they were school children. The tables indicate the results for each year of life for all children included in the observations, and also for those who were not clinically tuberculous or suspected of being tuberculous. By collecting these various results and considering them from a uniform standpoint, we were enabled to deal with sufficiently large numbers to justify conclusions.

Engel & Bauer (15) tested 280 children in the Duesseldorf municipal nurslings' home, coming from the lowest classes of the population and frequently from consumptive families. Of these, 107 reacted to the cutaneous tuberculin test.

Of 241 patients in the Emperor and Empress Frederick Children's Hospital in Berlin, reported upon by Bing (16), 73 reacted.

In Professor Freer's (17) children's clinic at Heidelberg, 344 patients up to 15 years of age were tested, only few of them having been admitted on account of tuberculosis. The clinical material is not that of a large city but comes largely from the country. Of these children, 65 or 19 per cent reacted.

From the Dresden Nurslings' Home, Ellenbeck (18) reports on 232 infants under one year of age, all of whom were under prolonged observation and five of whom reacted to tuberculin.

Ganghofer's (19) statistics bear upon his observations in: 552 children in the Children's Hospital in Prague; of 462 non-tuberculous patients, 173 or 28 per cent reacted; of 90 tuberculous, 82 or 91 per cent reacted.
Ottokar Gruener's (20) tests were made on 400 children from the poorest districts in Vienna, in the Emperor Franz-Josef Hospital; of the 400 children, from 3 months to 14 years of age, 186 or 46.5 per cent. reacted.

Hamburger & Romeo Monti (21) examined 509 children in Professor Escherich's clinic in Vienna, ill with non-tuberculous acute diseases, only a few showing signs of existing tuberculous. In these children the behavior of the "Stichreaktion" was observed particularly. 271 or 53 per cent. gave a positive reaction.

v. Pirquet's (22) investigations were also made upon children admitted to Professor Escherich's clinic during a period of 1-2 years. They included 1407 children, 1134 of whom were not tuberculous. There were 539 positive reactions.

Lemaire (23) vaccinated 100 children between one and two years of age, with a ten per cent. solution of old tuberculin; 19 were positive.

The report of Hillenberg (24) presents several unusually interesting points. His tests were made on 650 school children, from 5-15 years old, in a small town of 3000 inhabitants, which had remained without much change for years, being without a floating population. The conditions which he found to exist are therefore of particular value. 175 or 26.9 per cent. of the children reacted to the skin test.

Results of Cutaneous Tuberculin Tests in Children up to 14 years old.

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<td>Number</td>
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<td>5—6 &quot;&quot;</td>
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</tbody>
</table>
A study of the tables emphasizes the fact which has been alluded to before, and pointed out especially by v. Pirquet and by Hamburger & Monti, that the frequency of tuberculosis-infection rapidly increases with age, from 6.98 per cent. during the first year of life in all children, to 59.85 per cent during the 14th year of life. This increase is equally manifest if, as was done by v. Pirquet, we group the children according to age-periods, of which the first year of life forms the first; the second year of life the second period; the third period takes in the ages from 2-4 years; the fourth those from 4-6 years; the fifth those from 6-10 years, and the sixth period includes all children between 10 and 14 years of age.

The differences between the results in all children tested and in those who were neither clinically tuberculous nor suspect of being tuberculous are not very great, and this fact again gives force to the necessity of actively protecting all children, even before they have reached the age of 14, against the disease the seeds of which they carry within their organs in sixty per cent. of all cases. Including, as these statistics do, not only hospitalized children and children from the lowest walks of life where tuberculosis is far more frequent than in other classes, but also school children who are apparently healthy, and children of the middle classes, the fact that even under these circumstances the frequency of tuberculous infection in clinically non-tuberculous children at the age of 13-14 years was 54.29 per cent. is significant and strongly shows the danger to which our growing youth is exposed. It requires only some of the additional strains incidental to puberty, to the beginning of a wage earner’s life and to the greater liberty of action enjoyed by young people as compared with school children, to activate, in many cases, the dormant infection and to develop the potential into actual tuberculous disease. It is therefore during childhood, when the disease is not usually
active, that the fight against it must find its most important point of attack and it is here that the best results can be expected from a deliberate creation or increase of specific immunity to the pathogenic action of the tubercle bacillus.

The evidence which we have presented will suffice to show that, in the majority of cases, infection with tubercle bacilli occurs during childhood and that the tuberculous diseases which occur after puberty are usually implanted, in their seeds, at an early period of life, remaining latent for years. The cause of this latency is found in the resistance which the human organism is capable of opposing to a tuberculous infection.

It must, however, not be supposed that all cases of adult tuberculosis are to be traced back to childhood-infection; some of them undoubtedly are due to recent infection, although this is not nearly as commonly the case as was supposed until quite recently. The development of tuberculous disease in the adolescent or adult may occur by local extension or by metastasis from an early focus, owing to activation of this focus, or then it may occur through infection from outside sources, that is through an exogenic infection. From the evidence at hand, v. Leube (25) places the frequency of exogenic infection at about one-third of all cases of adult phthisis.

The question as to the degree of resistance to infection offered by the normal organism is still an open one. With the application of biological methods in its study the subject acquires new interest and, judging from our own results, we are inclined to the view that the conclusions to be drawn from the studies of Reibmayr (26), published nineteen years ago, are destined to find more confirmation than we were then prepared to anticipate. Although we still recognize a predisposition to the acquirement of tuberculosis, our conception of its nature has greatly changed since the time when the simple fact, that the disease had been present in one of the ascendants or in blood relations, was considered evidence of an hereditary predisposition and a strong support in favor of the diagnosis of tuberculosis. The supposedly lowered resistance, by reason of such an heredity, was also considered to be a factor in prognosis, and both views are still held by many physicians in this and other countries. Concerning the prognostic significance, one of us (27) published, in 1907, his own observations to the con-
trary, and further clinical observations have confirmed the view which he then expressed that, if there is a difference in prognosis in tuberculous persons with, and in those without, a history of family tuberculosis, it is of favorable rather than of unfavorable import for persons with a so-called hereditary history.

Concerning the difference, if there be any, in the resistance to infection and to the development of clinical disease, we have had opportunities of studying the subject in connection with our investigations on prophylactic immunization, and the results thus far shown appear to be of sufficient interest to be mentioned in this place.

Since 1906 the blood sera of 134 newborn infants were examined, in our research laboratory, for specific antibodies including precipitins, agglutinins, opsonins, and specific amboceptor as shown by complement fixation. Almost all these blood specimens were supplied by colleagues in general practice who, at the same time, gave us concise information as to the presence or absence of tuberculosis in the mother and in the family.

Tuberculosis of the mother, either then existing or clinically recovered from in the past, was shown in the case of 36 babies. The laboratory tests on their sera showed precipitins in serum dilutions averaging 1:400; agglutinins in dilutions of 1:60; the opsonic index averaging 0.98 and specific amboceptor in 24 out of the 36 cases.

In 27 cases in which there was no personal history of tuberculosis on the part of the mothers, but in which these had had opportunity for infection by exposure in their families, agglutinins were found in 17 specimens. Precipitins were present in dilutions averaging 1:450. The opsonic index averaged 0.85; and specific amboceptor was found in 10 of these sera.

No history of tuberculosis on the mother's part, past or present, was given in the case of 75 babies. In the sera of 72 of these, no agglutinins could be shown, while they were found twice in dilutions of 1:4. Precipitins were present in dilutions averaging nearly 1:100. The opsonic index averaged 0.87, and no specific amboceptor could be demonstrated in the sera of babies of apparently normal mothers. In one of these cases the demonstration of marked antibody formation in the infant's blood led to a closer inquiry, when it was found that
the mother had had spinal caries, when a child. This experience was the more interesting, as it suggests that it is possible to determine, by the examination of the serum of the baby, whether the mother is or has been tuberculous.

Differences of opinion still exist concerning the significance of specific antibodies and concerning their relation to resistance or immunity in general, and the opponents to the view, that the presence of specific antibodies justifies an inference of the existence of a degree of immunity, are inclined to take a negative position regarding their significance in their relation to immunity in tuberculosis. We shall revert to this consideration in another communication. For the moment it suffices to have shown that the sera of children born of mothers giving a history of tuberculosis differed in our findings, as stated above, from those of children born of non-tuberculous mothers.

Among the mothers with a history of tuberculosis there were six who had received specific treatment for their tuberculosis, either at our hands or at those of other physicians; and the sera of their babies not only showed the presence of antibodies but contained them quantitatively in larger amounts than they were found in the sera of babies of tuberculous mothers who had not received specific treatment. We have been able to continue our observations in two of these children, examining them every year or oftener, one child being now six and the other four years of age. They have continued in perfect health, have never reacted positively to a v. Pirquet test and, while their antibodies have diminished quantitatively, they have nevertheless continued to be present, having been demonstrated last in December 1912, at which time the sera were examined likewise for bactericidal and bacteriolytic power, with positive results. An animal inoculated subcutaneously with 1:100 mgm of virulent tubercle bacilli acted upon by the serum of the six year old child on December 19, 1912, died July 28, 1913, from another cause than tuberculosis, the autopsy showing slight enlargement of a mesenteric gland without caseation and some thickening of the omentum as the only suspicious lesions; and an emulsion of these tissues used for inoculation of a normal animal has at the time of writing, three months after inoculation, failed to produce any visible disease, the animal having doubled its weight during this time. The control animal infected December 19, 1912, died of generalized tuberculosis on the 63rd day.
In the case of the child four years old, the same kind of experiment was made but is not yet concluded, except that the control animal died 58 days after infection, from generalized tuberculosis, whereas the animal inoculated with tubercle bacilli acted upon by the serum of this child is living after ten months and is in good condition, having increased in weight from 460 to 710 grams. Another, still more recent experiment, in the case of a child born by an immunized mother likewise promises to be successful. While these experiments are insufficient to justify conclusions, they are sufficiently interesting to encourage further studies on the subject of an active bactericidal immunity, transmitted by an immunized mother and still apparent after a lapse of several years, no such observations having been made heretofore to our knowledge.

Further confirmation of our growing conviction, that the tuberculous mother, even though not artificially immunized, can nevertheless transmit to her offspring a certain, although perhaps insufficient degree of specific immunity, was supplied in the course of our studies on prophylactic immunization, in connection with bacteriolytic and bactericidal experiments made before and after vaccination of children with a single dose of vaccine. Although want of space prevents us from giving here the details of the individual experiments which have reached about 400 in number, we find that there is a marked difference, not only in the duration of life but also in the lesions found on autopsy of animals, accordingly as the child has or has not been born by a tuberculous mother, or again in others accordingly as the child gives absolutely no evidence or does give evidence of a preceding tuberculous infection. With rare exceptions only the sera of children born of tuberculous mothers and the sera of those who, without such a history, gave more or less evidence of an acquired infection showed specific antibodies, often including amboceptor as shown by complement fixation, though frequently only a trace was found or the test was otherwise lacking in completeness, by failing with one or more of the several partial antigens.

Animals inoculated with virulent tubercle bacilli acted upon such sera taken before vaccination, frequently outlived the control animals by two or three time the period, and in two instances, observed to the present time, the autopsy showed no evidence of tuberculosis whatever. In other autopsies the chronic course was exemplified by the absence of miliary
tubercle, by reparative processes in the form of fibro-caseous or purely fibroid lesions.

On the other hand the opposite results were shown from the use of sera of children whose mothers were free from tuberculosis and who themselves gave no evidence of preceding infection. The animals, after infection with tubercle bacilli acted upon by such sera, died as a rule from generalized miliary tuberculosis without material difference as to duration of life when compared with control animals in which normal solution had been substituted for the serum.

While we have seen exceptions and therefore do not wish to convey the claim that these observations have been entirely, uniform, yet they were sufficiently so, and sufficiently numerous to support us in the belief that the tuberculous mother does convey to her offspring not a predisposition, but a relative resistance to infection or, if this takes place, to the type and course of the subsequent tuberculous disease. This relative resistance is, as a rule not sufficient to afford absolute protection.

We may add that we believe to have observed something similar even in the supposedly non-resistant guinea pig, accordingly as it is born by a mother while undergoing treatment for immunization or after this had been accomplished, or again as the mother was normal in this respect. These studies will be continued and extended, if necessary, over several generations in order to show whether it is possible or not to obtain a relatively immune race of these animals.

The results of our experimental studies, which will be given in greater detail in the next report from the von Ruck Research Laboratory for Tuberculosis, show unmistakably that most sera of the apparently normal, as also of the tuberculous human subject possess the power of reducing the virulence of tubercle bacilli in vitro and that in exceptional cases their virulence for the guinea pig is completely destroyed.

The guinea pig being an animal in which spontaneous recovery from the disease has never been observed and the successful artificial immunization of which has heretofore appeared impossible, requires large and often repeated doses of our vaccine when its body weight is compared to that of children and adults. On the other hand, in human subjects we always succeed when a full single dose is administered and in clinical cases where for prudential and other reasons we have adopted a slower course, but few doses are required to develop a degree of
immunity under which the serum of the patient acquires complete germicidal power.

We believe therefore that in the human race a specific resistance either transmitted or acquired, though often inadequate, is as a rule already present and that this accounts for the complete resistance to tuberculosis in some persons, and in others for the presence of latent tubercle bacilli without lesions in various tissues, for the spontaneous healing of minute and localized foci found so frequently on autopsy after death from other diseases, as well as for the chronic course and the tendency to recovery in cases in which the disease has declared itself. If this should actually be the case, then only about one person in five would need greater protection than they actually possess, and if they could be known and recognized, only these would require the benefit of prophylactic immunization. In view of the apparent safety and simplicity of administration of the necessary dose of the vaccine, the selection of cases for vaccination on the plan of preceding biological tests, including animal experiments would, however, not appear to be needed, even if it supplied a correct criterion.

The evidences for the uniform presence of specific antibodies in the serum of vaccinated children at any time after the fourth or fifth day, and its coinciding bacteriolytic and bactericidal power as described in the first report from our research laboratory, (28) have been greatly augmented since that time, the number of such vaccinations having now reached over one thousand; and over two hundred re-examinations made at periods varying from 6 to 26 months after vaccination have shown no diminution of the specific antibodies in the sera, as shown by complement fixation tests, nor in the power of such sera to disintegrate living virulent tubercle bacilli and to destroy their violence in the test tube to a degree that subsequent inoculation with such bacilli fails to produce tuberculosis in guinea pigs or in other laboratory animals. In more than 400 of such inoculations there have been but a few failures to show the entire absence of tuberculous lesions on autopsy and these exceptions, while at first attributed to clumping of the bacilli by agglutination, to their very high degree of virulence, or to both factors, have since found their more probable explanation in the fact that other animals, supposedly normal when received from dealers, have developed tuberculosis. Within the last year over 100 such animals have
died of spontaneous tuberculosis after their arrival, before being used at all or while under treatment for the purpose of immunization, and before they were infected.

The remarkable improvement observed and reported upon by Dr. C. A. Julian (29), in vaccinated children who were probably or clinically tuberculous has continued, and in a much larger number of persons vaccinated by ourselves a like uniformly favorable change for the better, with disappearance of physical signs etc., has followed the treatment without a single exception.

These observations, together with the therapeutic results obtained with a similar but less perfect preparation in the Winyah Sanatorium from 1897 to 1912 and the much more rapid and still better results that are following the clinical use of the new vaccine since May 1912, support us in our belief that the prophylactic use of the vaccine is destined to enable us to cope hereafter with tuberculosis successfully and specifically, and in a like manner as we are accustomed to do with smallpox.

FOOT NOTE. We have been able to prove by biological and experimental tests that the principles in both diseases are the same. Using the fresh smallpox lymph for the antigen, we obtained complement fixation with sera from vaccinated rabbits, the same as we do with sera obtained after vaccination against tuberculosis. The action of these sera upon the smallpox vaccine destroyed its virulence in several trials, failing to cause the characteristic reaction which occurred in the control animals on using normal salt solution instead of the serum from a successfully immunized rabbit.

We have in the past obtained the same biological reactions with sera after more or less prolonged treatment with the Watery Extract of Tubercle Bacilli as we do now after a single full dose of vaccine, and the sera obtained from a number of patients treated 1 to 15 years ago, who have visited the Winyah Sanatorium during the last two years still showed complement fixation in high serum dilutions, as well as complete bacteriolytic and bactericidal power.

The chief difference which we have observed between the Watery Extract and the vaccine, clinically, during the 18 months of the employment of the latter is a greater uniformity in results and the fact that it requires now less than half the time it did formerly to reach these results in a degree sufficiently marked so as to justify the discharge of the patients as apparently cured.
literature.

5. V. Babes; Congres pour l'etude de la tuberculose—. Paris, 1883. p. 545.
6. v. Behring; Beitrage zur Klinik der Tuberkulose Vol. 3. 1904, p. 92, and elsewhere.
24. Lemaire; Revue de la tuberculose, 2e serie; Vol. 5. 1908, p. 199.
26. V. Leube; Tuberculosis, Vol. 12, 1913, p. 3.
30. C. A. Julian; Medical Record, 1913, June 14.

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Tuberculin in the Diagnosis and Treatment of Pulmonary Tuberculosis.*

By J. King Patrick, M.B., Ch.B., B.Sc., D.P.H.

Tuberculosis Medical Officer and Deputy Medical Officer of Health, Metropolitan Borough of Hampstead; late Senior Medical Officer, Municipal Tuberculosis Dispensary and Senior Assistant Medical Officer of Health, County Borough of Leicester.

Introduction.

Tuberculin as a therapeutic agent has had an interesting, if somewhat chequered, career. Introduced by Robert Koch in 1890, it was acclaimed as a specific cure for

*Practitioner, London.
tuberculosis, and the hopes of the physician and the patient for the speedy overthrow of the enemy were stimulated to an extraordinary degree. These hopes were not, however, destined to be realized, and, after a shortlived "boom," a revulsion of feeling took place, and tuberculin speedily became almost an unknown quantity in the treatment of tuberculosis. In the light of present-day knowledge, the cause for this neglect of tuberculin becomes apparent. When originally introduced, it was used without sufficient discrimination in respect of the choice of suitable cases, and the method of dosage was faulty. Although discarded by the great majority of the profession, a great deal of work continued to be done, both from the point of view of laboratory investigation and from the clinical side, by workers in this country and in Germany. Tuberculin as a therapeutic agent owed its revival in this country to the work of Wright, who was engaged in researches as to the mechanism of immunization by bacterial products in general. He contended that "we ought cautiously to exploit in the treatment of localized tuberculous affections the tuberculin, which we owe to the ever-fertile labours of Koch."

As the result of work conducted on two distinct lines of research, laboratory and clinical, two schools came into existence: those who advocated the small dose at long intervals, and, on the other hand, those who favoured the "intensive method" of large doses at frequent intervals, which had previously been led up to by smaller doses. The rationale of the first method depends on the maintenance of sensitiveness without increase of tolerance, and of the second method on the gradual increase of tolerance and the abolition of sensitiveness. Increased knowledge of the action of tuberculin has shown that these two methods of administration, although at first sight antagonistic, are really not so, and each has its own particular sphere of usefulness if applied to appropriate cases. When the disease is strictly localized, as in so-called "surgical" forms of tuberculosis, the best results are obtained by the use of tuberculin in small doses repeated at long intervals without any attempt to reach massive doses. On the other hand, in pulmonary tuberculosis the "intensive" system gives the best results when large doses are given at short intervals, such doses having been led up to by a series of smaller doses frequently administered.

The writer is convinced that tuberculin has a distinct and
very important place in the treatment of tuberculosis, and that
it is a very valuable aid in diagnosis. It will not cure every
case of tuberculosis, and must be used with the greatest dis-


ermination and care. Sahli, insists very properly, on the
"two-edged" nature of the remedy, and, certainly, if used in
a haphazard way, without special skill and experience, it is an
agent with great potentialities for harm.

In view of the opportunities the writer has had of becom-
ing practically acquainted with the use of tuberculin in the
treatment of pulmonary phthisis, as senior medical officer at
the Leicester Municipal Dispensary, and more recently as
tuberculosis medical officer at Hampstead, he has ventured to
record some general observations on the subject.

WHAT IS TUBERCULIN?

Tuberculin may be defined as the toxic product of the
 tubercle bacillus grown upon artificial media, and capable of
 producing a "specific reaction" in an infected animal or in
the human subject, similarly infected by the bacillus. The
toxic products may be divided into two classes: (a) the
exotoxins—the soluble, diffusible products of the bacillus,
which are secreted into the culture fluid; and (b) the endo-
toxins—the insoluble toxins contained in the bacillary bodies.
Tuberculins may be divided into three classes:

1. Those which contain only the soluble exotoxins (ex-
tract tuberculins).

2. Those which contain bacillary endotoxins only (endo-
 plasm tuberculins).

3. Those which contain both soluble exotoxins and in-
soluble bacillary endotoxins.

Tuberculins may further be classified according to whether
they are prepared from human strains of tubercle bacilli, or
from bovine strains of the organism.

The following table gives some of the tuberculins in more
common use:

\begin{tabular}{ll}
<table>
<thead>
<tr>
<th>Human</th>
<th>Bovine</th>
</tr>
</thead>
<tbody>
<tr>
<td>\textit{Extract tuberculosis}. Koch's old tuberculin (T.)</td>
<td>\textit{Perlsucht Tuberkulin} (P.T.)</td>
</tr>
<tr>
<td>\textit{Tuberkulin original} (T.O.)</td>
<td>\textit{Perlsucht Tuberkulin original} (P.T.O.)</td>
</tr>
<tr>
<td>\textit{Albumose free tuberculin} (A.F.)</td>
<td></td>
</tr>
<tr>
<td>\textbf{(2) Endoplasm tuber. Koch's new tuberculin Perlsucht Tuberkulin Rück-}</td>
<td>\textbf{stand (P.T.R.)}.</td>
</tr>
<tr>
<td>\textit{tuberculins.} (T.R.)</td>
<td></td>
</tr>
</tbody>
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\end{tabular}
Although many tuberculins, are on the market, and their methods of preparation differ considerably, there is good grounds for believing that the essential and fundamental action of all tuberculins is the same, and that the active principle of all of them is of the same chemical nature. The proofs that can be adduced in support of this statement, are as follows:

a. All tuberculins produce the same specific reactions, both local and general in tuberculous subjects, differing only in intensity. This is true of both extract and endoplasm tuberculins, and is proof that all tuberculins contain bacillary protein.

b. All tuberculins applied to the skin, in the form of Von Pirquet’s test, will produce characteristic tubercles with epithelioid and giant cells.

c. All tuberculins produce similar blood changes in respect of opsonic content.

d. Clinical experience confirms the results of physiological experiments in emphasizing the fact that the action of all tuberculins is quantitatively similar, and only differs in degree; thus, the deduction may be allowed that the active chemical principle of all tuberculins is the same.

TECHNIQUE OF ADMINISTRATION BY SUBCUTANEOUS INJECTIONS

The following is a description of the technique employed by the writer in administering tuberculin both for purposes of diagnosis and treatment.

The necessary desiderata to be aimed at are:

1. Accuracy of dosage.
2. Thorough asepsis.
3. Apparatus which shall combine simplicity and accuracy with efficiency.

The technique to be described is believed to combine all these characteristics, and has been found to answer all requirements in a series of treatments running into many hundreds:

Syringe—The syringe used is the “Record” pattern, and consists of a glass barrel with metal ends and plunger, so
arranged that it can come to pieces very readily for purposes of sterilization. The capacity of the barrel is 1 cubic centimetre (c.c.), and it is divided into tenths, each division being further sub-divided into fifths, each sub-division thus representing one fiftieth of a c.c. A platino-iridium needle is employed, so that it can be flamed between each injection without damaging the needle. The syringe is sterilized each day, and between each injection the barrel is washed out with some 5 per cent. phenol solution, and the needle carefully flamed. It is quite unnecessary to sterilize the syringe for each patient, and the important part in the technique is undoubtedly the careful flaming of the needle. The fact that the writer has performed many hundred subcutaneous tuberculin injections, and has not yet seen a single case of septic infection result, would seem to indicate that the system combines simplicity with efficiency.

Site of Injection.—The best site is the outer side or extensor aspect of the arm or forearm. The latter being somewhat more sensitive is particularly useful for test injections. When the patient is at work, and has to use his arms, it is sometimes advisable to inject between the seapulae, but this position has the great disadvantage of being inaccessible. The injection should be strictly subcutaneous, and care should be taken to avoid injecting into muscular tissue on the one hand, or into the skin on the other.

Preparation of the Patient.—The skin at the point of injection should be cleaned thoroughly with alcohol (methylated spirits is quite efficient), or ether.

Method of Dilution of Tuberculin.—The preparation of his own dilutions of tuberculin by the practitioner is strongly to be recommended, as the trouble involved is very slight and the economy observed considerable. The bottles containing the original tuberculin are of 5 c.c. capacity, and are fitted with rubber corks. When empty they are useful in making up the series to be described. A series is made up commencing with the original bottle. By taking 1 c.e. of the original tuberculin and adding 9 c.c. of the diluting fluid (5 per cent. phenol in distilled water), the first dilution in the series is arrived at (in practice the writer uses half these quantities, i. e., .5 c.e. tuberculin plus 4.5 diluent). 1 c.e. of this dilution obviously contains :1 c. c. of the original tuberculin. Similarly 1 c.e. of dilution No. 1 is added to.
Tuberculin in Pulmonary Tuberculosis

9 c.c. of diluent in the second bottle, when 1 c.c. of the second dilution will contain :01 c.c. of the original tuberculin. Similarly a sub-dilution prepared in the same way from the second will contain in 1 c.c. :001 c.c. of the original tuberculin, and so on ad infinitum. Each bottle is labelled in series:—:1 c.c., :01 c.c., :001 c.c., and so on.

For this purpose the writer has designed a series of labels, which by their colour at once draw attention to the particular tuberculin being used. This is of importance when large numbers of patients are being treated with different tuberculins of varying strength, and mistakes are apt to be made if no distinction is made in the method of labelling. In making records of doses on charts or case books, it is also advisable to use different coloured inks, e.g., P. T., which is estimated to be 40 times stronger than P.T.O., is distinguished by red ink, and so on.

From the above series of dilutions:—

(1) (2) (3) (4)
:1 c.c. :01 c.c. :001 c.c. :0001 c.c., etc.

and by using the syringe described, graduated to 1-10ths and 1-50ths of a c.c., any dose can readily and accurately be given. For example, to give :001 c.c. one can either give 1 c.c. of dilution 3, or, what is better, give 0:1 c.c. of dilution 2. By making use of the sub-divisions on the syringe it is also obviously easy to give such doses as :0012 c.c., :0014 c.c., :0016 c.c., and so on.

In dealing with the tuberculin, it is best to use figures in terms of the original fluid, and the cubic centimetre (c.c.) as the standard. The writer has adopted this plan in relation to all tuberculins, including B.E., so as to avoid the confusion which is apt to arise in speaking of one in terms of fractions of a c.c. of the original fluid, and of another as fractions of a milligramme of bicillary content.

The original tuberculins appear to retain their active principles, and if properly kept, to remain sterile for considerable periods, but dilutions should be rejected if not used within a week, as they are apt to lose their potency. This applies particularly to the lower dilutions, which should be renewed every few days, the expense involved being infinitesimal.

The Use of Tuberculins in Diagnosis and Treatment—
Tuberculin when administered to a healthy person or a non-tuberculous animal is relatively non-toxic, large doses being required to cause any general disturbance in the organism, while in tuberculous man or animal minute doses give rise to fever, malaise, pains and selective action on tuberculous foci present in the body, together with local manifestations at the general term "tuberculin reaction," and include the local, focal, and general reactions to be described later.

Numerous theories have been advanced to explain this "sensitiveness" of the tuberculous subject to tubercle products but these need not be discussed here. The theory advanced by Wolff-Eisner is perhaps most generally accepted, and is as follows:—

Tuberculin itself is non-toxic, and, when introduced into the normal subject, it simply circulates as a comparatively innocuous foreign substance. But in the body of the tuberculous, it meets with a specific lysin (tuberculolysin, which has been produced by the tissues of the tubercle infected subject, and it is "lysinized," i.e., the molecule is broken up with the formation of "tuberculotoxin," which produces the "local reaction," and, if produced in sufficient quantity, causes irritation in the tuberculous focus, resulting in the "focal reaction," and finally entering the general circulation gives rise to the "general reaction." The tuberculous subject differs from the non-tuberculous in that tuberculolysin is present, and so "tuberculotoxin" can only be produced when tuberculin is introduced into the tuberculous. The introduction of tuberculin into the tuberculous subject, therefore, induces a condition of sensitiveness," which is utilized in the therapeutic application of tuberculin.

When tuberculin has been administered in an appropriate therapeutic dose, the action described above is followed by "immunizing response," i.e., a condition of increased physical well-being on the part of the patient, accompanied by a tendency to local healing in tuberculous foci, and characterized by an increase of antibody content in the blood and tissues, and a lessened response to injected tuberculin. In this way, "tolerance" to tuberculin is induced by a series of increasing effective doses, so arranged that the next dose is administered before the tolerance induced by the preceding one has waned. By this means, the tolerance curve may gradually be increased, until large doses of tuberculin are tolerated. Sahli (2) describes
the action of tuberculin as "an actively immunizing curative process," but the immunizing effect produced is only relative, no true immunity being established. Tuberculin increases the patient's resistance "by the stimulation of those physiological and anatomical processes by means of which tuberculosis so often heals spontaneously."

THE TUBERCULIN REACTION.

As already indicated, the tuberculin reaction comprises three distinct phenomena, viz:—

(1) Local reaction;
(2) General reaction; and
(3) Focal reaction,

which may now be discussed in more detail.

(1) Local Reaction.—This phenomenon may be absent, even in the presence in one or both of the others, but is more commonly a precursor of these, and frequently gives warning of approaching failure of tolerance during treatment, and the imminent danger of a general reaction. It is characterized by redness and oedema, accompanied by pain and stiffness affecting the area infiltrated by the tuberculin. It makes its appearance in a few hours after the injection, and has usually passed off by the end of the third day. Occasionally, a hard infiltrated mass persists for a few days after the passing of the acute symptoms. The "needle track reaction" is much more constantly present, and may be regarded as a very delicate test. It is caused by a drop of tuberculin escaping from the needle during its entrance and exit, and shows itself as a bright red spot at the seat of puncture, sometimes forming quite a considerable halo round the puncture wound.

(2) General Reaction.—This is characterized by a rise in temperature, sometimes sudden in onset, and at other times exhibiting itself as a more gradual upward tendency of the temperature curve. In addition, general symptoms, such as headache, pains in the body, malaise, or even actual sickness combined with drowsiness, lassitude and loss of appetite may be present. The symptoms quickly pass off, and the patient has a feeling of increased well-being, and feels better than he did prior to the tuberculin injection. The temperature usually reaches its maximum within twelve hours, and reaches its former level again in from 36 to 48 hours. Considerable variation, however, takes place in different individuals.
(3) The Focal Reactions—Caused by the irritative action of an inflammatory nature by the toxins on tuberculous foci, and evidenced by increased physical signs, such as crepitations over affected area, and increase of cough and sputum which may become streaked with blood.

DIAGNOSIS.

The difficulties which beset the physician in the early diagnosis of pulmonary tuberculosis are well known, and the importance of arriving at a definite diagnosis at the earliest possible moment is universally admitted. Unfortunately, the disease in its early stages may exist, when the only indication may be a slight departure from ordinary health, unaccompanied by any physical signs, and when it is impossible to demonstrate the presence of the tubercle bacillus by bacteriological examination. To wait for the presence of the tubercle bacillus too often means, that when it is at length demonstrated, the disease is no longer in the early stage; and, on the other hand, failure to find the organism, even with modern improved bacteriological technique, is no proof that they are not present.

It has been seen that tuberculin gives rise to a specific reaction only in the presence of a tuberculous focus. It demonstrates that the patient has, or has had, a tuberculous infection, but it fails to discriminate between an active infection and a latent lesion. Some indications can, no doubt, be obtained from the rapidity of the response. If the patient quickly responds to a minute dose of tuberculin an active lesion may be suspected; if, on the other hand, the reaction is delayed until the test dose has repeatedly been increased, a latent focus of disease may be the explanation. If, however, we carefully consider all the circumstances of the case, and fail by every other means to arrive at a definite diagnosis, the tuberculin test becomes a very helpful asset in the resources of the physician.

Camac Wilkinson claims that the tuberculin test is practically free from risk, and urges its routine use in all cases in which a diagnosis cannot be arrived at by other means. In the presence of definite physical signs, and in cases in which tubercle bacilli can be demonstrated, it is obviously an unnecessary proceeding to employ tuberculin for diagnostic purposes. The writer has found the subcutaneous tuberculin test of the greatest utility in doubtful cases, and has not seen any bad results from its use. The tuberculins have used been old
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tuberculin and A.F.; latterly, the albumose free tuberculin has been used for all tests.

The Subcutaneous Test.—Before submitting the patient to the subcutaneous test, the temperature is carefully recorded for several days, and he is enjoined to rest quietly. Provided the temperature has not exceeded 99° F. for some days, the test may be undertaken; the initial dose of A.F. in adults being :001 c.c, and in children and weakly persons :0005 c.c. If no reaction occurs, the doses may be boldly increased at intervals of three or four days to :002 c.c, :004 c.c, :006 c.c. up to .01 c. c. If the patient fails to react to the maximum dose, it may be safely inferred that there is no tuberculin lesion present. Before applying the tuberculin test, the patient's urine should be examined for albumen and sugar, as nephritis and diabetes mellitus must be regarded as contra-indications.

In the case of a positive reaction, attention must be paid to the tuberculin reaction in all its phases, viz., local, focal and general. The site of injection must be inspected minutely, increase of variation of the physical signs in the chest studiously sought for, and, finally, the temperature chart carefully studied, and the patient's statements with respect to general disturbance, in the shape of headache, pains in joints, malise, etc., thoroughly investigated. Advanced cases of tuberculosis frequently fail to give a reaction, but in early cases, the test, if properly carried out, never fails. The writer is convinced that the subcutaneous test is the most reliable and useful of the tuberculin diagnostic methods, and has discarded the use of all others.

TREATMENT.

As already indicated the method of treatment by tuberculin, which gives best results in the case of pulmonary phthisis, is the "intensive" method by which the patient's tolerance is gradually increased by frequently repeated small doses, until massive doses of tuberculin are exhibited. The observations in the section are based entirely on the writer's experience as medical officer at a tuberculosis dispensary, and the methods described apply to the treatment of patients attending such an institution. Before commencing tuberculin treatment, a period during which the patient is kept under observation is a sine qua non.

The applicant for treatment if found, after careful examination, to be a suitable case for dispensary treatment, is pro-
vided with a clinical thermometer, and instructed in its use by the nurse. He is also given a card on which he records his temperature, which is charted by the nurse on the occasion of each visit. If it is found necessary to apply the subcutaneous test, it is done after a period of observation, and if the result is positive, a therapeutic course of tuberculin is instituted. The character of the reaction to the test dose often gives a valuable indication as to the patient's "sensitiveness," and so the initial therapeutic dose can be gauged with some accuracy. During the whole course of treatment the patient continues to take his temperature, and in many cases charts it as well, and he is taught to be observant as to the amount of cough and sputum, presence of headache, and other subjective phenomena, especially in relation to his injection, so that these facts can be noted by the doctor on his next visit to the dispensary. It will be seen that the "ambulant" treatment of phthisical patients on these lines makes a considerable demand on the intelligence and patience of the patient, and without this co-operation the doctor's task becomes a well-night hopeless one. If patients are impressed with the idea that the course of treatment must necessarily be a protracted one, and are alive to the fact that their active co-operation is essential, no difficulty will be experienced in getting them to attend with the greatest regularity for periods ranging from six to fifteen months, which is a fair estimate of the limits between which dispensary treatment may vary.

Selection of Cases.—Each case must be considered and dealt with on its own merits. The class of case, in which the greatest success will be met with, is the afebrile case with indefinite physical signs, and slight constitutional disturbance. In these cases, in which, if necessary, the subcutaneous tuberculin test may be employed to clinch the diagnosis, tuberculin will invariably work wonders. The use of a tuberculin is, however, by no means restricted to this class of case, else would its use very seriously be circumscribed. Cases in stages I. and II. of Turban's classification are for the most part suitable for the treatment, provided no mixed infection is present. In later stages a condition of "compensation" may be established, in which the progress of the disease is retarded, although permanent damage may have been effected in the lungs, and in stage III. cases, considerable relief from its
distressing symptoms can often be afforded to the patient by the judicious use of tuberculin.

An idea which has much to commend it, and which is carried out in Leicester, is to send the great majority of cases for a preliminary educational period to the sanitarium. This period varies from four to eight weeks, depending on the condition of the patient, and while there, under strict supervision and improved hygienic surroundings, the tuberculin treatment may be inaugurated, and, if necessary, a preliminary test carried out. There can be no possible doubt that such a preliminary sanatorium period of education has a very decided influence on the patient's subsequent dispensary course of treatment. He is taught to appreciate the advantages of fresh air and cleanliness, and his faculties of observation are trained.

In the absence of such facilities, it is highly important that each tuberculosis dispensary should have attached to it observation beds, for the careful study of doubtful cases. The value of the sanatorium in this connection is more educative than therapeutic. It is obviously quite impossible during such a short stay to make any permanent impression on the course of the disease, but apart from the valuable training he receives, the patient has his nutrition improved, and is in every way prepared for the subsequent "ambulant" course of treatment at the dispensary.

Principles of Dosage.—A wide diversity of opinion exists among observers as to the particular tuberculin and the method to be employed; the result is that uniformity in practice is conspicuous by its absence. On the one hand, we have those who take no notice of slighter reactions, and "rush" the dosage until tolerance has been established. At the other end of the scale, are those who studiously avoid reactions, even of the slightest kind, by beginning with very minute doses and increasing them by very small ratios. The most outstanding exponent of this class of reactionless treatment is Sahli, who regards any reaction which is clinically perceptible as harmful.

Occupying an intermediate position, are those who endeavor to keep just below the reaction point by utilizing the reactions which occur in the course of treatment. When reactions occur, an injection may be missed, and then by reducing the dose of tuberculin tolerance is again gradually increased, until the limit is reached by carefully increased dosage.
An important indication for careful increase, or even for a pause, is the occurrence of a marked local reaction, especially if associated with a distinct upward tendency on the part of the temperature curve. It may be regarded as a danger signal, indicative of the early failure of tolerance and the approach of a general reaction, and the dosage may be modified accordingly.

It is impossible to lay down hard-and-fast rules in the matter of tuberculin dosage, and any method based on "rule-of-thumb" principles will speedily break down in practice. Many writers give what they consider to be an ideal series of doses for different tuberculins, but, except as a rough guide for the uninitiated, such a series cannot be regarded as of any value. The initial dose and the ratio of increase for future doses can only be arrived at by a careful study of the individual case, and by accurate observation of the effect of each dose. This is the only method of dosage which can lay claim to be regarded as scientific in its application. Different patients vary very considerably in their response to tuberculin, depending on idiosyncrasy, temperament, and other individual factors, and the "sensitiveness" of each patient will depend, apart from their individual peculiarities, on the stage on the disease, and the degree of tolerance already acquired by natural means.

The initial dose of P.O.T. may vary from :0005 c.c., to :001 c.c. and for B. E. it may be very much smaller. An ideal series for P. T. O. commencing with :001 may be as follows:— :001, :0015, :002, :003, :004, :005, :007, :009, :01, :015, :02, :03, :04, :05, :07, :09, :1, :2, :3, :4. This may be followed by P.T., which is regarded as being 40 to 50 times more potent than P.T.O., in the following series:— :01, :15, :02, :03, :04, :05, and so on up to :4 c.c. A course of old tuberculin may then be given commencing with 0.1 c.c., and a final dose of :6, or even 1 c.c., of T. may be given. It is advisable to give the smaller doses twice weekly, but the larger ones should be given, at weekly intervals, and the maximum dose of T. should be repeated several times at intervals of two weeks, or even a month.

It must, however, clearly be understood that any such series of doses is only to be regarded as a rough guide, and any attempt to adhere rigidly to any stereotyped system of dosage will assuredly break down in practice, and will require
considerable modification. The duration of such a course of tuberculin treatment will vary between 8 and 15 months, depending entirely on the time taken to establish tolerance. It is always advisable to keep patients under observation at regular intervals after the expiration of their treatment, and, if indicated, a second course of treatment should be undertaken.

In dispensary practice, the writer has found, what may be described as the "P.T.O.—P.T.—T. sequence," the most useful in the treatment of phthisis pulmonalis. Nathan Raw believes that bovine tuberculins should be used for infections by the human bacillus, and vice versa, a view from which many observers dissent. Be that as it may, there can be little room for doubt that, in the treatment of pulmonary phthisis, a somewhat lengthy course of bovine tuberculin, followed by a comparatively short course of human tuberculin, is followed by excellent results.

Hyslop Thomson states that the use of exotoxic tuberculins alone "does not protect the patient sufficiently against the body of the bacillus, and may indeed mask the presence of a slowly progressive lesion." He claims that endotoxins alone can produce "any efficient and permanent immunizing response." He, therefore, advocates the use of T.O. followed by T.R. or new tuberculin (W.) with a maximum dose of 0:1c.c. for dispensary treatment. The experience of Camac Wilkinson, Hilda Clark, and many other observers, does not bear out the contention, and it is worthy of note that Hyslop Thomson does not advance any clinical evidence in support of his thesis.

Contra-indications to the use of Tuberculin—These are neither numerous nor formidable. The chief contra-indication is fever of the hectic type, due to "mixed" infection, and characterized by a "swing" of 3° to 4° F., with high evening temperature. These cases can rarely be dealt with at a dispensary, as their treatment calls for absolute rest in bed and general hygienic treatment, combined with appropriate vaccine treatment, and, it may be, minute doses of B.E. Tuberculin treatment, which often causes surprising defervescence of temperature, can only be carried out in such cases when the patient is under strict and constant supervision in an institution. Cases in which the disease is obviously advancing rapidly, and the general condition is grave, are not suitable for tuberculin treatment.

Camac Wilkinson considers haemoptysis, so far from being
a contra-indication, to be a positive indication for tuberculin. If rest in bed is possible, it is certainly practicable to continue tuberculin treatment carefully with apparently good results in such cases; but it is wise, in the case of the dispensary patient, to suspend the tuberculin temporarily and to resume treatment with caution. Pregnancy cannot be regarded as a contra-indication, and the writer has in several cases administered full doses of tuberculin to expectant mothers with the happiest results. Menstruation does not contra-indicate the use of tuberculin, but it is better to avoid giving an injection immediately before a "period," in view of the frequent occurrence of a premenstrual rise of temperature, which might cause the observer to be misled. Diabetes mellitus and chronic Bright's disease have already been mentioned as contra-indications, and the same applies to hepatic cirrhosis.

Hygienic Measures.—In treatment by tuberculin, the mistake must not be made of depending entirely on the effect of the injections, without having regard to the ordering of the patient's whole manner of living by adopting, in addition, a satisfactory hygienic regime. The resistance of the patient must be increased by calling into play every measure calculated to react favorably upon him. The improvement of his nutrition by appropriate dietetic treatment and rest, the adoption of the open-air regime, and appropriate breathing exercises must not be neglected; and in patients who are at work, the amount of such work and exercise must carefully be controlled. Tuberculin must only be regarded as an item in the treatment, and its use must not be allowed to over-shadow the other factors in the remedial propaganda.

Results.—It must be admitted at once that immediate results in pulmonary tuberculosis, however satisfactory, are lacking in finality. It is only after the lapse of years, during which the patient has been able to lead a normal life, and at the end of which he has shown no disposition to a recurrence of the disease, that we can claim a cure. We must be content, at the present stage to judge our results on a much less exacting basis, and to defer our final judgment until such time has arrived.

CONCLUSIONS.

In attempting to estimate the value of any new remedy, an attitude of caution on the part of those qualified to judge is highly to be commended. It is essential, however, to ap-
proach the subject with an open mind, and it is just in this par-
ticular that many of the detractors of tuberculin, as of many
other new therapeutic measures fail. When a critic, however
eminent, speaks of that about which he has little or no knowl-
dge, his opinion is not entitled to any more consideration than
that of the humblest member of the profession. These re-
marks are inspired by the fact, which cannot be gainsayed,
that many of the outstanding opponents of tuberculin have
never used it. Tuberculin is on its trial, and it is surely not
asking too much that this trial should be a fair one. As al-
ready indicated, finality, for obvious reasons, cannot yet be
claimed for immediate results, however brilliant. It would
appear, however, that in tuberculin we have the most im-
portant addition to the therapeutic agencies brought to bear
against tuberculosis which has been introduced within recent
years. It is not a "specific" remedy, but there seems every
reason to suppose that it will occupy an important place among
anti-tuberculosis therapeutic agents in an ever-increasing
measure as time goes on.

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THE PIORKOWSKI TURTLE TUBERCULIN*

BY MAX PIORKOWSKI, M.D.,
Berlin, Germany

In 1901 Friedmann came to me and brought two large Tur-
tles, which had become spontaneously tubercular, their lungs
containing a large number of Tubercular nodules. He asked
me to prepare pure cultures from these organs, and I have suc-
cceeded in obtaining pure cultures on suitable nutriment media
such as Glycerine Agar and Bouillon. Friedmann remained
with me nealy a whole year in order to do further work with
these cultures.

Meanwhile I made a large number of experiments on my
own account. Some Turtles I fed, others I inoculated, and of
the large number of the latter only two manifested the symp-
toms shown by Friedmann's Turtles. It was, therefore, evi-

*Address Royal Hospital Diseases of the Chest, London British
Journal of Tuberculosis.
dent that we were dealing with a special strain of bacillus, which, when developing on a specially prepared nutrient medium, exhibited the symptoms of Tuberculosis. It is very noteworthy that the Turtle Tubercle Bacillus in its further behaviour, both culturally and morphologically, displayed an extraordinary resemblance to the human tubercle bacillus. Its growth at 37 degrees F. is remarkably characteristic.

The main point about this strain is that it can be used without the risk of any manifestations—a circumstance which may be ascribed to the fact, that for the last 10 years it has been re-inoculated afresh weekly, and thus has acquired generally an extra-ordinary innocuousness, becoming both avirulent and atoxic.

The differentiation of the various tubercle bacilli is especially well carried out by Knoll's modification of Much's method, consisting of a double stain by means of Fuchsin, Methyl Violet and Resorcin. This method reveals long slender structures with regular nuclei in human tubercle bacilli, but in the bovine variety the nuclei are often seen to be irregularly divided and of a variable size. The avian tubercle bacilli are somewhat shorter and the turtle bacilli are very small, almost like dots. In my opinion the extraordinary resemblance of the various tubercle bacilli is to be attributed to the zoological grouping, and such resemblances only occur in lung-breathing animals.

We must differentiate between mammals which produce their offspring alive—the class to which human beings and oxen belong—and birds, that is animals which lay eggs, and thirdly reptiles which possess horny or long integument and also lay eggs. Lizards, crocodiles and turtles belong to the last class. Finally, we have to think of fishes which breathe as long as they are young through gills and also lay eggs.

We see very clearly that resemblances are to be found only among lung-breathing animals, and it is for this reason probably that the results described are obtained on the injection of tubercle bacilli of similar kind. It became very evident that Turtles were especially adapted for our purpose.

The method of working with living bacilli is not entirely new, for the same principle was used by Behring in his experiments on the extermination of Bovine tuberculosis. He employed human tubercle bacilli, which are atoxic to oxen, with good results, and therefore, the attempt to immunise human
beings with turtle tuberculin is quite rational. I can explain the process very satisfactory by the side-chain theory of Ehrlich. According to this theory, the nutriment of an animal is taken up by means of cells. Each cell possesses a central active nucleus which carries out the function of the cell, and a so-called side-chain, a "Receptor. The cell takes up nutriment by means of this Receptor; and then a very remarkable proceeding occurs. The portion of the cell, which has absorbed the nutriment, breaks away from the rest, becomes metabolized. A new receptor is developed in the original cell, but not merely one receptor, an actual overgrowth of receptors takes place (Weigarts law of over-compensation). The new Receptors, having been charged with nutritive material, break away and carry the nutriment to different parts of the organism, thus effecting nutrition. This theory not only accounts for the method of nutrition, but it also explains how toxic action occurs. Cells do not only possess receptors for food molecules, but also for other substances, and these receptors are as numerous as they are varied. Some of them take up particles of nutriment, others take up poisons, others absorb ferments or the products of bacterial fermentation or similar processes.

Let us, for example, consider a toxic action a little more closely. When a poison enters the body (e.g., tubercle toxin) the first point concerns the existence of receptors which can take up the tubercular poison. If these do not exist no infection by tubercle bacilli can occur, for the organism possesses congenital immunity towards the action of these bacilli. But if there be some arrangement for receiving them, and that is if appropriate receptors for the tubercle bacilli exist, these take up the poison, and if absorbed in sufficient quantity a general toxæmia ensues, which may lead to the destruction of the organism. If, however, the receptors have opportunity of loading themselves with the poison, and if they drop off the cell after they have become useless and harmless, then an excessive production of these receptors occurs, as stated previously. A constant succession of new receptors becomes formed. But there is not room enough on one cell for the attachment of so many receptors, and the result is that the newly formed elements become discharged into the Serum before they have been able to take up any of the toxin.

The receptors, thus discharged, come into contact with poison in regions far distant from the site of the sensitive cells.
and are there seized upon, whereby a neutralization of the poison takes place and it is rendered non-injurious. In this manner, an acquired specific immunity is developed, and the newly found bodies are termed "antitoxins."

The harmless turtle tubercular toxin combines with the receptors, and the combination is thrown off into the blood as antitoxin. New receptors are formed in large quantity but they are capable of seizing, not only the Turtle tubercle bacilli, with which they have been hitherto dealing, but also human bacilli, and thus render them harmless. If there is a profuse formation of new receptors and if the human Tubercle Bacilli have not increased unduly, complete recovery may be effected and the rationale of the cure is along these lines. There is also the additional advantage that Turtle Tubercle Bacilli are innoxious and harmless, and therefore this method is especially well adapted for protecting inoculation. But even if the body is already affected with Tuberculosis, the disease can be suppressed because its course is so protracted. That process is very much the same as that of Jenner's vaccination against Small Pox, except that in the latter case the agent is calf lymph, whereas here it is the Turtle Tubercle Bacillus. All the endeavours of therapeutic in Tuberculosis based upon Koch's work, which consists of injections of living Tubercle Bacilli or the virus, attain a certain result, but if accurately judged, fail to reach their ultimate aim. In order to attain this end, it is necessary that the Antigen, which is to invoke the protective and curative powers of the body should be alive but deprived of the poisonous properties—avirulent and atoxic. It is further necessary that the Tubercle Bacilli, which is concerned in this matter, should be treated as carefully as possible, and should be both active and specific. To a very considerable extent these desiderata have been arrived at.

I have made two preparations; one is the suspension of living turtle tubercle bacilli in Physiological Salt Solution and the other is Turtle Tuberculin prepared like Koch's, but at a temperature not higher than 35 degrees C. in vacuo.

The administration should be intra-muscular, but it may also be given subcutaneously or into a vein. The Suspension should first be given in doses of 5, 1-2-3 ccm., later on the Turtle Tuberculin in doses of 1, 5, and 1 ccm., according to the stage of the disease and the temperature, in other words
according to the clinical condition. It is best to begin with 1 c.c. of the Suspension to double the dose in 8 to 10 days, repeating the latter injection at increasing intervals. It has appeared as a rule that the doses of living Turtle Tubercle Bacilli do not require to be used more than three times. Numerous experiments on animals and the treatment of a large number of cases have confirmed the absence of any toxic effects.

Owing to the careful methods of preparation of this remedy there have hitherto, been no instances of induration or abscesses, there have only been slight infiltrations which subsided very satisfactorily. The most striking clinical results have been the rapid subsidence of fever, night sweats, pain in the chest and other pains. Very soon there is an increase in weight, appetite returns and the feeling of fatigue disappears.

Professor Myer has obtained very good results with Turtle Tuberculin, and in his opinion it is in every way superior to Koch's tuberculin. Bandolior refers to a case, which could not tolerate even the smallest doses of sensibilized bacilli and albumose free tuberculin, but which tolerated large doses of Turtle Tuberculin easily and satisfactorily. Klemperer is able already to point to a large number of cases wherein the remedy was well borne. Karfunkle of Berlin has also injected a large number of patients. Heid of Pittsburg has demonstrated good results in 80 per cent. of the cases.

Detailed publications will follow in due course. It is obviously necessary to treat a very much larger number of cases and the remedy requires further trial. It is best to inject into the muscles of the gluteal region. Larynx, Skin and Surgical Tuberculosis have been benefited, and I am convinced that the trials which you are about to make will also be followed by good results.

MEDICAL TREATMENT OF TUBERCULOSIS

With Special Reference to Children.

BY STEPHEN HARNSBERGER, M.D.

Introduction.—Locke says, "It is easier to believe than to be scientifically instructed." The appointing committee must have read that. Anyway I was requested to record my

*Read before the forty-fourth annual meeting of the Medical Society of Virginia, at Lynchberg, October 21-24, 1913, as a part of the Symposium on Tuberculosis.
own crude observations and experience in treating tuberculosis. This I have in part outlined and I trust that my efforts may evolve something of more than transient interest. And I would have you keep in mind this truth—that no one can say anything that any one else can use as it is said. The rational use of every suggestion must be adapted to the varied requirements and changed environments of the individual case under treatment.

Early Experience Amateur—My first experience began in the early seventies, when pulmonary complaints were fixed by that ponderous trio—bad air, bad hygiene and bad cod-liver oil. That was before I began the study of medicine. Though the cause of the recovery of the consumptives who went into the army during the war between the States was not immediately obvious, the fact of their restored health led me to believe there was balm in closer communion with nature and a fragmentary discontinuous fat meat and hard-tack diet. I advised three persons, one with hemorrhages and hectic, said to be tuberculous by physicians of standing, to stay out of doors day and night and to make fat hog meat a part of their regular meals. They did this and all recovered. Two, at least, are still living and in good health. During the thirty-six years of my professional life, I have remained "wedded to the idol" of my early days.

I wish to state at this juncture that I shall devote my time to the treatment and eradication of tuberculosis and not to the treatment of the symptoms of the disease. In order to do this, I must necessarily encroach upon ground already covered by previous speakers.

Fresh Air and Sunlight.—Tuberculosis, like crime, is best subdued by light. There can be no tuberculosis without the tubercle bacillus. The tuberele bacillus lives and multiplies only in the absence of pure air and light. As long as the germ is open to pure air and light, it remains inhabited and harmless. Hence, to the extent that pure air can be utilized by the host does the danger from tuberculosis become lessened. The first, last and indispensable principle, then, in the treatment of these cases is to see that the patient is at all times exposed to pure, fresh air. And while this is beyond dispute, we must not be lavish with the sunlight. This, never neglect to impress. Intense sunlight depresses, and anything that de-
presses injures. Have the air and light enter, but always shade from the direct rays of the sun when the thermometer ranges high.

Body Resistance Essential.—The very fact that so large a proportion of tuberculous persons who come under observation get well, even without treatment and mostly under the worst conditions of environment, seems sufficient evidence that the protective forces of nature are the only dependable means of cure we have.

The well nourished have most stamina. We need to feed differently. We pay too little attention to the prime factors which underlie the majority, if not all, of these cases. In my practice the pre-disposed to tuberculosis have been those who shunned meats, especially the fat of meats. Nor are the heavy meat eaters, for obvious reasons, exempt. Years ago, I recognized this fact. And whenever I could get my tuberculous patient to eat and digest fats, especially hog fat, (it is easy to learn to eat it), I felt optimistic, and rarely did I fail to see them recover. Hence, it has been my invariable rule to put these patients on the fat test. Whenever, from obstinacy, they refused to take fat, especially hog fat, I gave a gloomy prognosis and one that has rarely gone astray. On the other hand, the tuberculous patient who would persist in taking hog fat, unless he was too near death, would improve and ultimately get well. It may be that these are the kind of people David referred to when he said, "Their soul abhorreth all manner of meat; and they draw near unto the gates of death." Eat meat, but eat it sparingly. Eat vegetables, fruits nuts, etc., but eat sparingly. Give the metabolic processes a chance to work unhindered. Persons who do not consume some fat hog meat or other fats or oils lack something which resists the invasion of the tubercle bacilli. Their cell loss is uncompensated and, of course, cell activity is lowered. Fats are necessary to carry on the metabolic processes that keep up compensatory capacity. You do not or rarely see tuberculosis in fat eating persons. You do not see it even in the cotton seed oil eating negroes in the South. The negroes who work in the oil mills in Texas saturate their bread in the hot cotton seed oil and eat it abundantly every day the mills run. They are practically immune to tuberculosis. And I am told that many of the more intelligent negroes who are exposed to infection or who are in the initial stage at once seek
work at the oil mills; and they soon take on weight and strength.
Fats and oils seem to supply to the system one therapeutic aid which helps to inhabit, subjugate or oust the etiologic microbes; not, however, in any specific way, but through the added resistance it furnishes.

Child Welfare.—Viewing the matter in the light of autopsy, rather than of tuberculin findings, we must be impressed with the necessity of directing the major part of our efforts to the care of children. To content ourselves with marking time, as in the past, is to doom not only the predisposed and actively tuberculous children, but as well to concentrate the action of all the worst etiological factors on the physically well. Obviously it is first and foremost by the employment of educational methods in the schools and homes that we can best ensure the cure and prevention of this disease in the future. The only dependence rests on the prophylaxis of education; and I wish to reiterate the importance of this.

The pre-natal and later acquired faulty mechanism, which lays this early period of human life wide open to tubercular infection, demands profound thought, keen judgment and imparative social and legal action and regulation. The persons most susceptible to tuberculosis are the children that are made susceptible by pre-natal delinquencies, or bad environment and defective care, or when weakened by some preceding acute disease. Now if the seeds of this disease are planted in infancy, as we are told they are, then we should see that the ground is barren to their growth.

New biological facts must be learned in regard to the internal secretions, etc., before we can get a trustworthy working conception of the peculiar taint or fault which invites activity of the tubercle bacillus. But one thing we do know—we want more energy construction and less energy consumption in these little ones. The question is: How are we to get it?

Increase Inherent Defensive Immunity Mechanism.—Wright says: No one recovers from an acute or chronic bacterial disease, unless it be by the production of protective substances in his organism. No one secures protection against disease, except, again, by the production of protective substances; and finally, no one lives in the presence of infection and repels that infection except by the aid of the protective substances in his blood.' "Therefore, the prognosis de-
pends upon the capacity of the organism to develop specific substances, and no person gets well unless the protective mechanism of the body develops sufficient anti-bodies to neutralize the effects of the overdoses of the toxines.'—Forchheimer.

We take the following from T. D. Wood's statistics: 1,000,000 out of 20,000,000 children attending the public schools of this country die of tuberculosis before maturity; 5,000,000 public school children suffer from malnutrition, etc.; 6,000,000 have enlarged tonsils, adenoids, or enlarged cervical glands, which require surgical attention; 10,000,000 (in some schools as many as 98 per cent.) have defective teeth, which interfere with health; 15,000,000 need attention for physical defects, which are injuring their health, etc.

If 1,000,000 of the public school children die, as stated, how many millions have the disease? This does not take into account the great number of children who have the disease, and who are not of school age; nor does it include those of school age who do not attend public schools and others who go to schools other than public. And we might with propriety mention the great numbers who have tuberculosis and who give no symptoms of the disease.

According to Calmette and others, with slightly lower percentages, 9 per cent. of children under one year of age are tainted with tuberculosis; between one and two years, 22 per cent; between three and five years, 33 per cent.; between five and fifteen years, 90 per cent., and over fifteen years of age, from 91 to 97 per cent.

Viewed in this relation, it becomes a question of vital economic interest and public policy. Communities, especially municipalities, must take some action commensurate with the importance of the matter. The tuberculosis child should be properly cared for. The well child should be adequately protected against infection. In no other way can we expect to effect optimum obstacle to the spread of the disease. The boy and the girl are father and mother to the man and woman. To represent their highest value as assets to the community, they must be physically, mentally, morally and spiritually sound.

In the home, where the tuberculosis child, if the disease is far advanced, cannot be segregated, if practicable, it should be done at public expense. In daily contact there is gross and definite menace. In cities and other compactly settled communi-
ties, tuberculosis school-children should be taught in classes to themselves, and in open-air buildings. In the absence of this arrangement, these children had better go untaught than that healthy children to be exposed to the disease. In fact, many of these children should not be sent to school, for the tax on their systems, especially nervous systems, hazard their chances of recovery.

The weaklings under school age demand special and constant care. Give them fresh air, and rational regulation and protection, and strive to build up their vigor by every possible means. Children are practically inclined to malnutrition, and the most frequent nutritional error is the lack of fats, lime, soda, etc. Teach them to take cream, fats and oils. Give them the organic and inorganic salts that go to make bone, muscle, etc.; also iron and manganese, and use such other auxiliary aids as best keep the blood cells at par. The apple contains an abundance of potash, soda, magnesia and phosphorus. All ripe fruits supply organic salts to the system and to the red blood cells. They also keep the intestinal canal free of the products of fermentation, making a bad culture medium for germs in the intestines. Meat in small amounts is essential to a child's growth. Prolonged or overcooking withdraws the lime and phosphorus from meats, which makes faulty food for children. Grape juice and fresh ripe grapes, in season, are highly relished by most children. If the juice is given in small quantity at a time, their taste for it lasts. It is the next best single therapeutic remedy they can take. It contains nearly as much nutriment, quantity for quantity, as milk, and it does not produce gastro-intestinal errors, as does milk. Besides its food and anti-fermentative worth, it aids digestion and assimilation. Persons who take it for long periods gain in weight and strength. And it seems to aid glandular function—just what most children need, especially the tubercular disposed. Grape juice and grapes have superseded milk in my adult practice since 1879. Two to three pounds of grapes daily will put on fat. Owing to the large percentage of carbohydrates and food salts, persons can live on grapes alone for a long period. They are also laxative and diuretic.

It is especially well to see that glandular function is kept active. With good glandular activity, which is usually impaired in children, they are apt to withstand even the infection of tuberculosis. Besides the long range of fruits and berries, or
the juices of fruits and berries, which I prescribe constantly to both sick and well, we have an easily administered and consistent co-worker in calomel and corrosive sublimate. Calomel in fevers and infections has maintained supremacy. It is sedative to the gastric mucous membrane, an intestinal alternative, and its power in this respect reaches the glandular apparatus and the emunctories. It promotes activity of all glandular structures, and commonly the secretions are increased in amounts. The lymphatic or absorbent system, also, becomes more elastic, and morbid products are absorbed and eliminated. There is probably not an organ or gland in the body, not even the pancreas, thymus gland, bone marrow and heart, upon which calomel does not manifest a tonic or alterative effect. There will often result a considerable improvement in the ordinary forms of malnutrition or anemia from the judicious administration of calomel alone. It seems to add cellular richness to the blood, to improve nutrition and to increase the weight and vigor of the body. It has been my custom to give calomel in doses of one-twentieth to one-fourth of a grain from two to six times a day, as indicated. When required, assist by enemas and pleasant laxative agents. If necessary to get desired results, do not hesitate to keep the calomel up every day for weeks or months. I always prescribe the best English calomel—it differs from America calomel in appearance, taste and color. I have never known it to give the least trouble. When it is advisable to hasten results or modify the course of infection quicker, my reserve is corrosive sublimate—one one-hundredth to one-eighth of a grain three or more times a day; adult doses larger.

This clinical knowledge, I find since writing my paper, now bears the stamp of science. The science of ions is brought out by Dr. Lewellys F. Baker, of John Hopkins, in a paper read before the Canadian Medical Association, August 1913. In speaking of the autonomic (sympathetic) nerves supplying the viscera and glands of the internal secretions, he says: "In the third place, the amount of certain ions, calcium, magnesium, sodium, etc., present in the medium through which nerve terminals act upon the end organs (smooth muscle, secreting gland), seems profoundly to influence the activities of the system concerned."* And Cushing says calomel retards the decomposition of food in the intestines; also it is a powerful diuretic. Mercury in small

*It gives me great pleasure to acknowledge my indebtedness to Drs. Forcheimer, Philip S. Roy and J. Staige Davis.
continued doses long increases nutrition and weight. After prolonged use, mercury is found in almost every organ of the body.

Influences Modifying Infection.—Tuberculosis is a penalty of civilization. It is the inevitable sequence of close housing and gross carelessness. Laziness, false pride and inebriants are ruling contributory factors. Tuberculosis, with pitiless certainty, stamps infancy and childhood with its indelible mark, throughout life. Those of weak tension die. Only the strong survive. In this, death is life, for in death of the unfit rests the greatest safety of the strong. Struggle and danger is a basic condition of progress. It is the whip which urges to preparedness against the forces that subdue and destroy—that makes the earth quick with life, and that makes life worth living. Upward our pathway leads, ascending, not descending—ever emerging from the gloom of the years just passed. Tuberculosis is gradually losing its own power to destroy human life. When the less resistant are thinned out from decade to decade in the way established by nature and further aided by the resistance gained by a more resistant infancy and childhood, the most strongly impressed predisposing ages, the prevalence and virulence of tuberculosis will grow less and less. Science is striving to render the etiologic microbe more innocuous and to lessen the inherited tendency to tuberculosis. Therefore, the decrease of prevalence and virulence, with the increase of resistance to the disease, is likely in the future to bring about fewer deaths from tuberculosis than is caused today. And if we will but give proper credit to the still acting influence of natural selection, which is patent through all nature, we may be pardoned for assuming that the day may come when tuberculosis will perhaps cease to concern mankind. Natural selection is a potent force in grading up mankind—it leaves those who are best suited to the environment. And then that something (stamina, if you like) which we call resistance is gradually gaining in power, and it may be the main reason why tuberculosis is decreasing, as well as the fact that so many with symptoms of infection get well under any treatment, and even without treatment and in spite of unsatisfactory conditions and surroundings. It is also probable that a large proportion of the cases which enter sanatoria and are discharged as well belong to this class. For even in sanatoria we frequently see the milder cases steadily grow worse, while out of sanatoria many with definite lesions get in excellent condition and later have been found to be entirely free from any symptoms or signs of active tuberculosis. I make
no reflection on sanatoria. They are fine educational centers, and
the conscientious patients who go out from them scatter instruc-
tion that carries authority.

Status of Tuberculin not Settled.—For reasons stated above, I
feel constrained to put the following question: Can we gauge
and read the value of any treatment, especially tuberculin and
allied therapy, instituted for the cure of tuberculosis? In one
we have high resistance of the individual versus virulence of
the infecting organism, or high resistance versus virtually in-
nocuous organism. Or else the reverse—minimum resistance ver-
sus virulent organism, or minimum resistance versus innocuous
organism. It is known, or at least fair to assume, that the potency
of various strains of tubercle bacilli differs to extreme degrees.
We can perhaps gauge and measure the strength of these, but we
cannot gauge and measure the value of the resistance of the in-
dividual patient. Therefore, no one can forestall what the out-
come will be when tuberculin is administered; nor can any one
tell what effect the tuberculin had upon any patient—whether he
lives or dies. It is claimed evidence shows that one infection
with tubercle bacilli may immune against a second attack. But
even should this be true, we cannot tell which of the various
strains of tubercle bacilli immunizes against a second attack; nor
do we know which of these strains is best adapted to the pur-
poses of bacterial therapy in a given case. Hence, I wish to em-
phasize what seems to me to be an undeniable fact—that the
cures, or majority of cures we see today are due, in great part, if
not fully to individual resistance to the less toxic infections, and
not to any preferred direct therapy that we use, and that cases
with scant resistance infected with virulent strains of tubercle
bacilli succumb, as a rule, under the best and most scientific up-
to-date treatment. From what I can understand, tuberculins
give evidence of value only in the milder cases and we know that
the milder cases get well under any treatment and forsooth with-
out treatment.

Probably in no other infection have we any counterpart to the
pathological condition found in connection with tuberculosis. The
bacilli are walled off either in "dead caseous material or within
the fibrous, non-vascular tubercle, alike inaccessible either by the
blood stream or by the inspired air." Therefore, it is not unreas-
onable to believe that an impenetrable defense is presented to
every means of direct anti-toxic or bacteriolytic medication.

Tuberculins, whence their conception or make, are not doing
what it was thought and claimed they would do. While some shadow of results seem enough to nurture continued effort, nothing has been established as sufficiently basic to warrant the expectation of the originators or the hope of a wistful public. It does appear that those who have been tuberculinized and sent out from sanatoria as benefited, do show a longer stay to the activity of the infection than do those who have not had tuberculin. This, to the bacteriolytic student, with his inborn interest and pre-existent knowledge, gives the encouragement and hopefulness that leads to further trial. But in the last analysis, with all our interest, expectation, work and increased knowledge, we must confess that medicine has little in its favor, and that we stand today as—

"An infant crying in the night,
An infant crying for the light,
And with no language but a cry."

SOCIETY TRANSACTIONS

XVIIth INTERNATIONAL CONGRESS OF MEDICINE
London, August the 6th to the 12th, 1913

Section of Diseases of Children.
President: DR. EUSTACE SMITH

Surgical Treatment of Tuberculosis.—Dr. V. Menard (Berck-sur-Mer) said that tuberculous osteitis should be separated from tuberculous osteo-arthritis. Evacuation was often applicable for the cure of tuberculous osteitis, especially with fistulae, whether distant from or close to the joints. The local treatment of tuberculous arthritis depended on the conservative method, which was almost always successful if applied throughout the whole course of the disease. The best operative methods, including filling, could not be substituted for conservative method.

The most pressing indication for operation—septic suppuration—was usually due to neglect in the conservative treatment. Surgical interference was also required for associated and accidental infections and certain cases of joint tuberculosis. An operation such as drainage or atypical resection removed an obstacle to local repair. Mortality from operation was very low except for hip disease, and the results were good if the after-care was properly carried out.

In spite of the progress of medical treatment of glandular tuberculosis, there was still a part for surgery to play in the rapid removal of a localized mass of glands in the groin, axilla and neck. The length of the scar could easily be limited. Whether operated on or not, the patient could only recover if placed under favorable conditions for a long time.

The Necessity for a more thorough Control of the Milk Supply in combating Surgical Tuberculosis in Childhood.—Mr. H. J. Stiles (Edinburgh), as the result of his experience at the Edinburgh Hospital for Sick Children, was convinced that Koch was mistaken in disregarding milk as the source of tub-
ereulOUS INFECTION IN CHILDREN. Though pulmonary tuberculosis in adults was usually due to infection through the respiratory tract, in children infection was usually conveyed through the alimentary canal. Of sixty-seven tuberculous bone and joint cases investigated by his assistant, J. Fraser, the bovine bacillus was present in forty-one (61 per cent.) and the human bacillus in twenty-three (34 per cent.), while in three cases both types were present. Forty-one children were under four years, and of these 78 percent, owed their disease to the bovine bacillus. The same bacillus was the organism found in all the children aged less than twelve months, and these had all been fed entirely on cow's milk. Of seventy-two cases of tuberculosis cervical adenitis operated on at the sick Children's Hospital and investigated by A. F. Mitchell, in sixty-five years, and of these all but three were bovine affected.

In sixty-four cases the tonsils were removed from children suffering from tuberculosis of the upper carotid glands. Histological evidence of tuberculosis was found in 39 per cent. The bovine bacillus was found in twelve and the human in three cases.

Mr. Stiles held that the prevalence of tuberculosis in his country was due to the frequency of the disease among dairy-cows and to the rarity with which milk was sterilised.

The First Signs of Pulmonary Tuberculosis in the Infant. —Dr. P. van Pee (Verviers) advocated Goldscheider's method of percussion as the simplest and most precise of examining the lungs of infants. After experience of his method the speaker differed from the majority of paediatrists, who hold that tuberculosis in infants is usually latent, and that its manifestation is rapidly followed by a fatal issue. In the immense majority of cases he believed it was possible to suspect, if not to affirm absolutely, the presence of tuberculosis, and that most of these cases, as in the adult, were of chronic evolution, with a tendency to relapses and further extension.

PAPULO—NECROTIC TUBERCULIDES IN INFANTS.

Centres of Tuberculosis Infection in Home Districts Will be Attacked. Hospital For The Family.

Wronker found that in nine cases of infantile tuberculosis the diagnosis was first made by the finding of papulo-necrotic tuberculides. These skin lesions were characteristic and when seen are not easily confused with other conditions. In the
majority of cases these tuberculides are indicative of general miliary tuberculosis. The prognosis is generally bad, but not always fatal. The von Pirquet reaction is a great aid in diagnosis. A negative reaction may be misleading as it is sometimes absent in malignant types of tuberculosis. Wronker describes small, round, slightly raised, rather hard, flat papules ranging in size from a pinhead to a millet seed, of red to reddish-brown to livid brown color and as often presenting on their surface a small dry crust which is easily removed, leaving a whitish, central depression with occasionally a small bleeding point in its center. If put on the strength they have a gleaming appearance.

**LES DEUX SYNDROMES PANCREATICS CHEZ LES TUBERCULEUX**

The pancreas which is so extremely important to insure perfect balance of all organic functions seems to play a prominent part in consumptive patients. According to whether the pancreatic secretion is insufficient or too abundant various troubles may complicate consumption and alarming symptoms may arise, most of which are amenable to judicious treatment.

The most frequent sign of pancreatic insufficiency in consumptive patients is diarrhoea which in many cases is merely a dyspeptic diarrhoea. An abnormal amount of fat, carbohydrates, muscles fibres, is always found in the feces and the data of a chemical examination of the stools are then quite typical of pancreatic insufficiency.

In some cases there may be no diarrhoea or no obvious digestive disorder, but then an abnormal loss of weight out of proportion with the pulmonary lesions, and sometimes a slight glycosuria, lead to a diagnosis which is soon confirmed by the examination of the feces.

Hypersecretion of the pancreas is not infrequent at the beginning of consumption. Its symptoms, according to Professor M. Loeper, are; good appetite, even bulimia, and at the same time distinct wasting, increase of amylase in the blood and urine; presence of a proteolytic urinary ferment which very likely is trypsin; sometimes after the meals some temporary glycosuria, there is also an increase of indican in urine, although there is no diarrhoea.

As to morbid anatomy, Prof. Loeper has come to the following conclusions after many post mortem examinations and
numerous experiments on animals; tuberculosis may lead either to sclerosis, degeneration, atrophy or inflammation of the pancreas, or to hypoplastic reactions which are well marked not only on the lobules but also on the islets of Langerhans.

From a practical point of view Prof. Loeper recommends what he calls 'the intensive pancreatinisation' of tuberculous patients and he states that, in many cases of consumption where sclerotic or degenerative changes of the pancreas have followed hypersecretion, the stimulation of the pancreatic secretion has given him very satisfactory results.

CENTRES OF TUBERCULOSIS INFECTION IN HOME DISTRICTS WILL BE ATTACKED—HOSPITAL FOR THE FAMILY

An experiment to demonstrate the feasibility of a plan to wipe out the centres of tuberculosis infection in the tenement district of New York and other cities, has been undertaken by the New York Association for Improving the Condition of the Poor. An entire section of the East River Homes, more familiarly known as the Vanderbilt Tenements, has been leased for three years and has been converted into a home hospital. In this new institution the Association has begun a new experiment in the home treatment of consumptives and the relief of persons suffering from the disease. Into each of the twenty-four apartments will be moved a family which is dependent because of tuberculosis and which has been under the care of the Association. For the next three years an effort will be made to determine whether the spread of tuberculosis can be checked and cures effected under medical direction, aided by competent nursing, adequate relief, freedom from worry, fresh air and sunshine, and room for reasonable segregation. In this way the Association hopes to get near the home of the poor consumptive.

The new experiment was prompted by the increasing number of families that are reduced to dependency by tuberculosis, and by the length of time that it is agreed will be necessary to provide hospital and sanatorium care for all who are in need of treatment. Out of the total of 3,500 families now under the care of the Association, there are 284 in which there are one or more cases of tuberculosis. In 15 of these families both parents and one or more of the children are consumptive. According to the statistics of the Health Department, New York
City suffered a loss of 10,074 lives in 1910 as the result of this one disease. There were in the same year 32,065 new cases reported, and it is conservatively estimated that there were 50,000 living cases in the city a year ago. Despite the aggressive and successful campaign now under way for the adequate care of tuberculosis patients, it is admitted by experts that several years will elapse before ample hospital and sanatorium care can be provided.

In this new Home Hospital the Association will provide for segregation within each department and for fresh air treatment, especially for the children. A hospital and sanatorium regime will be instituted and everything affecting the health both of the patient and the other members of the family will be carefully supervised. Equal attention will be paid to the social and medical side of the families.

Patients will be allowed to work only on the advice of the physician, and when permitted they will begin gradually as their strength permits. In order that cures may be permanent, families will not be dismissed from the hospital until the patients have practically recovered full strength and until they are able to work full time. After dismissal each family will be moved into a suitable home and supervision will be continued by the Association until it is assured that the cure is permanent and the family actually self-supporting.

The tuberculosis children and those predisposed to the disease will attend an open air school, which will be established on the roof of the East River Homes. This will be equipped and the teacher will probably be provided by the Board of Education. The children of school age who are in good health will attend the public school, and others whose health will permit will work.

This experiment, which experts consider to be of national importance, will be conducted under a special committee of the Association consisting of Dr. Linsly R. Williams, chairman, Mr. Cornelius N. Bliss, Mr. Harry Pelham Robbins and Dr. Livingston Farrand. Miss Helen Knight Smith has been engaged as a supervising nurse and will devote her whole time to the personal direction of the experiment. There will be a visiting housewife, who will assist the housewives with their work, the Association's dietitian will give individual and group instruction in food economics and food values, and visitors and other members of the A. I. C. P. staff will co-operate on the social side of the experiment.
The Association announces that practically all of the fund necessary to finance the experiment for the first year has been raised.

The Association's General Agent, Mr. John A. Kingsbury, said today: "The cost of this experiment will cover not merely the maintenance of the patients and the medical oversight, but it will cover also the relief of the family. When it becomes necessary for the chief bread winner in the average working-man's family to submit to the prolonged treatment of tuberculosis in a sanatorium, his care is but a small part of the total expense involved. Someone must provide for his family. In considering the cost of tuberculosis, this large item is usually entirely overlooked. In the Association's estimate the entire cost has been covered and the family's earnings have been deducted to get the net cost not simply of treating the patient but of relieving his family from distress and of preventing the spread of his disease within the family. It is estimated that it will require about $23,500 a year for three years to determine the feasibility of this plan. It should be remembered that while the experiment is being carried on the families participating in it will be receiving adequate relief and that this will be an important factor in the plan. The families will be receiving decent care in suitable quarters instead of being treated in dirty tenements, the patients will be free from worry and wholesome food will be assured.

"We desire to emphasize that this experiment is not to demonstrate something to take the place of hospital segregation or sanatorium treatment, but to prove that even in a crowded city, given proper housing, sufficient food and sanitary supervision, it is possible to check the spread of tuberculosis, and to treat the disease with a reasonable measure of success. The experiment is planned as a supplement to, not as a substitute for, the hospital and sanatorium. We do not propose home treatment in preference to a sanatorium, but for hundreds now on waiting lists and for thousands now spreading contagious in dark dirty tenements it is home treatment or nothing at least for years to come. The success of this experiment would encourage the community vigorously to combat tuberculosis in the city tenements; it would impel the community to begin the combat at once; it would convince the community that it is necessary to wait years, until sufficient hospi-
tal and sanatorium facilities are provided, before attempting in a large way to eliminate tuberculosis; it should stimulate the community to forbid the maintenance of unsanitary buildings, as well as to construct those of the same high standard as the East River Homes and there to treat persons having tuberculosis without the necessity of breaking up homes or of depriving those who are able to work of the opportunity to do so, and thus to contribute as much as they possibly can to their support."

**EIGHT PER CENT OF POVERTY IS DUE TO TUBERCULOSIS**

That tuberculosis is responsible for one-third of the sickness that reduces the dependency is indicated by a study just completed by the New York Association for Improving the Condition of the Poor. In a statement sent out today the Association says that the facts obtained also indicate that this disease is the cause of over 8 per cent of the destitute homes in New York City.

Having determined by investigation that sickness is the chief cause of dependency among families in its care, the Association recently began an inquiry to learn which diseases are most prevalent among dependents so that it can plan more intelligently its preventive work. The 6,565 families which sought the Association's aid between October 1, 1911, and June 30, this year, were selected for the study. It was learned that of these families 1,605 were forced to seek aid because of illness. In some the income had been hampered or cut off by the illness of the father or mother. In others sickness of one or more members had exhausted savings and heavily taxed earnings.

Tuberculosis was the disease found in 555 or 34 per cent of these families. Rheumatism forced 187 other families into dependency. The remaining were classified as follows: Illness attending child birth 161, kidney and heart disease 156, anaemia 156, operations resulting from injuries 106, pneumonia 99, children's contagious diseases 48, paralysis and epilepsy 48, eye and ear diseases 45, cancer and tumor 44.

The results of this study show the urgent necessity for more adequate care of tubercular patients, especially those in impoverished homes," said General Agent Kingshury. "They also demonstrate how important is the prevention of the disease in the campaign against poverty. The facts justify
the effort now being made by the Association to devise a practical plan for the treatment and cure of the disease in the home. If the three-year demonstration the Association is making in its Home Hospital in the East River Homes is successful, a practical means of wiping out the disease in the tenements will have been effected. As the hospital has been in operation only since last March, Dr. Linsly R. Williams, the Medical Director, believes it is too early to determine with any degree of accuracy what effect adequate home treatment under proper conditions will have upon the disease. However, the fact that no unfavorable conditions have been noted thus far leads him to believe that the Association will before long be able to offer a more speedy and economic plan of wiping out the disease than is now employed. Moreover, the Association is, for the first time in the history of relief work in this country, providing on a comprehensive scale, adequate relief, care and treatment for tuberculosis in the tenement homes of the poor.

"Some plan of effective home treatment must be found, for it will be many years before there will be enough hospitals and sanatoria to accommodate all tuberculosis patients, despite the excellent work now being done to meet demands. A comparison of the hospital provisions in the United States with the needs and growth of population shows that the demand is increasing twice as fast as the supply."
RETROSPECT OF CURRENT PEDIATRIC LITERATURE

Diseases of the Respiratory System

Under Charge of
W. C. HOLLOPETER, A.M., M.D.

Professor of Pediatrics, Medico-Chirurgical College, Philadelphia

An Open Air School for Tuberculosis Children and Its Cost.—Since writing the editorial remarks on the question of an open air and open window schools, which can be found in the current number of the Journal, we have made a brief study and investigation of the money needed to build an open air school and to maintain it in good shape for one year. We find, then that the cost of building a standard open air school for thirty-five children will be somewhere in the neighborhood of $600 without the land. If the land for the school and playground is municipal, then of course no extra cost for land will have to be added to our estimate. If land has to be bought, then something fancy in the way of expense will have to be added to the $600 assumed. One city was able to put up an open air school for $525, owing to the generosity of some lumber merchants who furnished material at a wholesale figure for the sake of helping out in the good fight against tuberculosis.

To this sum now, of $600, land free, for the building we are to add $900 for a directress, $650 for an assistant teacher, $300 for a matron who takes care of cooking and dish washing, $5 per child for cost of material for keeping warm out of doors, making $150, and $600 for cost of provisions and fuel for a year for an estimate of thirty-five children. Possibly an additional estimate for the cost of transporting the children to the school might need to be added to the former sums mentioned.

In round numbers then, we reach an estimate of at least $3,000 for building on a piece of land free and maintaining an open air school for thirty-five children for one year. During the second and third or fourth years, the cost of the original investment for the land and building can be omitted, and thus we reach a safe estimate, year for year, succeeding until the building decays from exposure, of the sum of about $2,500 for the number of children mentioned.

Although we do not claim that our figures and estimates are absolutely correct, yet they are near the mark and go to show that it is only large communities which can afford such a permanent yearly cost, unless friends of the good cause will come forward and help to pay the salaries, furnishings and provisions. We intend in a later issue to return to the question of the cost of furnishing and maintaining an ordinary school-room with open windows, and furthermore to report the health and educational results obtained by both the open air and the open window schools in a city of about double the population of Portland.—Maine Medical Journal.

Open Air or Open Window Schools for Tuberculosis Children.—People of today rush unthinkingly into every novelty. Just at present we rush, or are being rushed by other enthusiasts, into all sorts
of untested fancies in the antituberculous direction. The open air school is one of the latest freaks urged incessantly upon tax payers, although the results of such schools in other State than in Maine have not yet proved superior to other methods of education and prevention, or of permanent value in the cure of tuberculosis. We hope, indeed, that they will prove advantageous, in time, but before entering in upon the large expenses which they involve, let us look at the question from various points of view.

Whilst thinking whether some sort of arrangements might not be made in our present schoolhouse to prepare them for occupancy by the tuberculous children of the community, we read with great pleasure in the Boston Medical and Surgical Journal, a very competent paper by Dr. Rice of Springfield, Massachusetts, in which he stands forth as a champion of the open window school, as against the open air school because it affords as much benefit to the improvement of the tuberculous as the much more expensive open air school.

An open air school, as its name implies, consists in utilizing, as Dr. Rice points out, any ordinary school-room provided with abundance of light and exposed to the sun, and in letting in fresh air through wide opened windows properly screened to guard from draughts and to keep out rain and snow. From a hygienic point of view, such rooms are as healthy as open air schools, the marked improvement in the condition of children using them, comparing favorably with those educated in open air schools built on the latest sanitary plans.

If a community utilizes its present school buildings as suggested, they avoid the expense of an open air school with its expensive roof and super roof, and a large sum for equipments such as coverings, felt boots, blankets, sitting out bags, cooking utensils, places for preparing food, and a warm place in which to serve it. Then, too, the open window school calls for slight expense in comparison with the open air school in the matter of arranging the windows with cheese cloths, and window strips for ventilation and keeping out snow or rain.
—Maine Medical Journal.

Pulmonary Tuberculosis in Infants.—Lederer (Monatschrift fur Kinderheilkunhnde, Berlin,) August, XII, No. 4, outlines five fatal cases of pulmonary tuberculosis in infants and three in which the children recovered. Miliary tuberculosis of various internal organs was the cause of the fatal issue in all cases. He was inclined to think that the infection was of air-borne origin, the primary focus occurring in the lung and involvement of neighboring lymph-nodes following. In early infancy the prognosis is extremely unfavorable, but three cases of recovery are cited to show that it is not entirely hopeless. The variability in the outcome is due partly to the severity of the infection, partly to the environment of the child as to light, air, food, etc., and partly to predisposition, as he is a firm believer in the fact of congenital tuberculosis.

The Value of Tuberculin in Tuberculosis.—A résumé of the discussion that took place on the value of tuberculin at the National Conference for the Prevention of Consumption, held in London on August last, forms a fitting epilogue to a review of the subject. This discussion serves to focus the opinions of leading authorities, some of whom differ widely in their views, and the general conclusion to be drawn is that tuberculin, if kept in its proper place, is a useful weapon in the hands of the practitioner. It must not be regarded as a cure for tuberculosis; it merely stimulates the curative efforts of the patients' own system, and it must not be considered as more than an adjunct to rational hygienic treatment. The following is a summary of the principal opinions expressed:

Sir James K. Fowler offers from his experience the following conclusions: 1. The use of tuberculin in any form in the treatment of
the disease is not free from danger. Even with extremely small doses, gradually increased the limit of tolerance may be reached suddenly and a reaction may occur. 2. In any case in which there is fever its use is absolutely inadmissible. 3 Fever is the guide to the activity of the disease, and therefore, a remedial agent which can be used in a febrile cases only is, of necessity, of very limited usefulness. 4. General reactions are to be avoided, and if one occurs treatment must cease at once. 5. Focal reactions are dangerous also, for they cannot be controlled. They may occur in the region of an obsolete lesion and lead to its reactivity, with a resulting increase in the activity and severity of the disease. Such focal reactions have been known to cause the coughing up of calcareous masses and lung tissue with the development of a secondary cavity. 6. The most successful treatment should be on the lines of rest and exercise as originated by Walther.

Sahli holds that all tuberculins are essentially identical, their apparent differences being due to impurities. To prevent disastrous mistakes he advocates the use of ready-made dilutions as is done in the case of Beranek's tuberculin. For diagnostic purposes tuberculin is dangerous and unreliable. Tuberculin treatment is free from danger only if the more obvious clinical reactions are avoided, in which case it is harmless. Its chief value is in incipient cases. It is not necessary to increase the doses to the furthest limit of tolerance: there is an individual optimum dose which should not be overstepped. The action of tuberculin is an immunisatory healing action, and not actual immunisation, which is a state never obtained in tuberculosis. Localised tuberculosis is suitable for tuberculin treatment, provided the patient is not already overloaded with tuberculin. As a rule acute cases are not suitable.

Sims Woodhead considers that complete immunity is never produced by tuberculin: at best relative immunity or decreased susceptibility only can be expected. In selected cases tuberculin is of material assistance, but its indiscriminate and unintelligent use is still a grave danger. As the exotoxic products of the bacillus are probably negligible factors in the production of symptoms, antitoxic sera are useless, the opposite of what occurs in diphtheria. If we could control the tuberculin stimulus to the exact point at which the tissues are rendered most capable of dealing with the bacilli, then the remedy could be used in every case. This, however, is impossible, for the focal reaction may at any time aggravate the condition. If the products of the bacilli are already present in such quantities that they are capable of stimulating a curative reaction, tuberculin can do no good and may do harm. He lays great stress on the avoidance of reaction.

W. C. White, of Pittsburg, says that no manufacturer prepares the same strength of tuberculin twice. A standard is necessary for the preparation, and still more for the physician who administers it. A small part of a drop of some tuberculin may make the difference between too severe a reaction and just the right reaction. He considers that we are in the trough of the sea following the second wave of enthusiasm for tuberculin treatment.

Beranek says that the toxins of the bacillus have a double action: they produce a local necrosis and a general intoxication, particularly of the nerve-cells. Rational treatment is to raise the activity of the protective cells, and this is the role of tuberculin therapy. With the exception of Koch's bacillary emulsion, all tuberculins are simply solutions of tuberculous toxins. To treat a disease by the injection of its own toxins, which when produced by the bacilli in the body weaken the natural defences, seems paradoxical. He holds, however, that the toxins evolved in the body are not identical with those artificially produced as tuberculin, and that the differences justify their therapeutic use. He presupposes that the toxins of tuberculin are more easily dealt with by the protective cells than the toxins pro-
duceed by bacilli in vivo, and that the diastatic function of these cells is thus exercised, and ultimately educated to be better able to neutralise the true tubercle toxins. His tuberculin, accordingly, is prepared from an attenuated bacillus. Tuberculin therapy, inasmuch as it is applied to declared tuberculosis, does not constitute immunisation, and is nothing but a curative method. A case cured by tuberculin is not thereby immunised against the disease. Large doses of tuberculin are not justified. The optimum dose—that which produces signs of improvement—ought not to be exceeded so long as improvement continues. Reaction is evidence of excess. The optimum dose is always less than the reactional dose of Beraneck's tuberculin. Only those cases benefit whose defences are still in a position to subdue the tubercle bacillus, and whether this power is or is not retained can only be determined by trial. Tuberculin should not be used in very rapid and severe or very advanced cases. On the other hand, it should not be restricted to afebrile, limited, localised cases; fever is in itself no contraindication. The chance of success is increased by beginning the treatment as early as the diagnosis is made.

Nathan Raw reiterates the opinions already expressed in his article in the British Med. Jour. These are summarised on pp. 310 and 323.

E. Rist (Paris) uses sensitised bacillary emulsion, and emphasises the need for selecting suitable cases. He states that he has "never seen a patient doing well under tuberculin." He never relies on tuberculin alone, and he suspects that the benefit sometimes seen may be due to detoxication, or merely to suggestion.

H. W. G. Mackenzie, of the Brompton Hospital for Consumption, says that he tried tuberculin extensively, using all varieties in every way, and he still feels uncertain as to its value. Tuberculin treatment is still on its trial, and the results so far are not brilliant, certainly not convincing.

N. D. Bardswell quotes statistics of twenty months' work with tuberculin at the King Edward VII. Sanatorium. He finds it difficult to say how much of a patient's improvement is due to tuberculin and how much to sanatorium treatment, but he considers tuberculin a useful addition to other methods, and it sometimes seems to expedite convalescence. It is quite unsuitable as a routine treatment. He strongly insists on the avoidance of reactions, and thinks that a rise of even one degree should not be allowed to occur.—The Prescriber.

**Treatment of Pulmonary Tuberculosis in the Child by the Method of Ferrier.**—Galliot (Arch. de med des enf.) gives his results in children-renunable to leave the poorer quarters of Paris for the country, when treated by the remineralization of Ferrier. The children treated were in the first and second stages of pulmonary tuberculosis, or had trachoebronchial adenopathies. The remineralization is accomplished by the administration of a mixture of carbonate and phosphate of lime, chloride of calcium, calcined magnesia, and arrhenal, given in powders proportionate to their age, three times daily for months. He also gave codliver oil because in its composition it has lecithin, and organic phosphorus, iodine, and bromine assisting in remineralization. The little patients treated by this method all were benefited by it. Two typical histories are given in detail. The Dr. finds that the pulmonary lesion was benefited by the treatment, although cicatrization has not yet been obtained and there must be some reserve as to the ultimate results, still there has been a complete arrest of the development of the disease. The general condition has much improved, the loss of flesh and cachexia have ceased; weight has increased and growth has gone on regularly. He recommends this method of treatment which is applicable among the poor who cannot go to the country or undertake expensive treatment.
BOOK REVIEWS


The appearance of a fourth edition of this work in less than five years, bespeaks its popularity and its usefulness. This edition is abreast with the knowledge of dietetics of the present day, being thoroughly revised and rewritten, bringing it up to the point of highest excellence as a guide to the physician and dietitian. As a text-book it ranks with the work of W. Gilman Thompson, Taylor and Gouraud.

The alterations of the present edition are rather extensive. The chapter on metabolism and the prescribing of diet have been practically rewritten. A section has been added on the mechanism of digestion. The portion of the work dealing with salt metabolism has also been largely rewritten. The sections on gout and diabetes have undergone similar revisions. Many new tables of the composition and caloric value of foods have been included. The text of this book is clear, conservative and reliable. There is an abundance of good formulas and the authors treat their subjects with profound and erudite good judgment. The table of food values for the various articles of diet are valuable on account of their thoroughness; but they are we believe, wrong in this estimate of the food value of nuts, though correct as to their indigestibility.

The authors' literary style is clear and interesting, and the volume should be a valuable addition to the physicians library, especially to those who have not been able to take recent post-graduate study and who wish to be most servicable to their clientele. And even though he has a dozen works on the the same subject in his library, he will find this book decidedly worth a place there, also.

Stories of Doctors, for Doctors, By a Doctor, by Dr. W. T. Bertrand. Bound in English silg-finished cloth decorative covers 12 mo. Printed on high-grade paper. By prepaid mail to address on receipt of price, $1.00. The Boxburgh Publishing Co., Boston.

The title of this book is misleading, to an extent inasmuch as it is not in the technical text enjoyed by the laity as well as the busy practitioner.

The book is made up of reminiscences; stories as told by seven physicians who undertook for recreation, rest and recuperation, to spend their vacation together in the backwoods away from the ding of telephone and constant call upon their services.

The constant calls made on them gives one an insight of what the country doctor has to face in his practice. Each evening, just before retiring, and when, fortunately, none would be absent visiting some patient, these seven physicians would compare notes and tell their experiences and practice and practice of medicine, such as the laity seldom hear. The incidents told are, in the main, true and actually experienced by some of these doctors, and the physicians who are subject to these sketches are still in active practice. We commend the book to all who enjoy stories well told.

Case Histories in Pediatrics, A new book on diseases of children by John Dovett Morse, A.M., M.D., Assistant Professor of Pediatrics,
Harvard Medical School, Associate Visiting Physician at the Infants Hospital and at the Children's Hospital, Boston, containing 630 Octavo pages and a few illustrations. Price express paid $5.50. W. M. Leonard, publisher, 101 Tremont Street, Boston.

The appearance of the second edition of the Case Histories in Pediatrics by John Lovett Morse is welcome by the reviewer. The first edition, which appeared two years ago contained 100 case histories in this revision 100 additional case histories has been added, so that the work in its present revision contains 200 carefully selected cases, definitely classified. The book is now twice as large as in the first edition. An introductory chapter—in itself practically a small book upon diagnosis in children's diseases—entitled, "the normal development and physical examination of children," is one of the prominent features of this new edition. This chapter is fully illustrated by photographs taken in the course of the author's work, which accurately illustrates the text. The merits of the Case History Book is now well known. It supplements the systematic book in which diseases are described, and brings to the physician cases exactly as he will find them in his daily work. This book taken as a whole, presents a post-graduate clinical course in the diseases of children. Dr. Morse devotes much space and attention to diagnosis, which is thoroughly discussed by naming diagnosis, which might with some reason be made eliminating each in turn by careful reference to clinical signs, terms and symptoms. The clinical terms being that which cannot be set aside and which all symptoms support.

There is a vitality in this work which is refreshing. It deals with actual conditions, as the Doctor meets them in daily practice it is absolutely true throughout, without possible error or misstatement. The book is original and thorough and the general practitioner can look to it for helpful suggestions as to a consultant and not be disappointed. It gives much pleasure to command this valuable work.


This old and favorable visiting list contains the usual ruled pages for daily use, and also space for consultations, obstetric engagements and practice, vaccinations, addresses of patients and nurses, and for cash account. There is also the usual introductory matter, and a number of necessary changes have been made in the table of drugs and doses, in order to bring it up to date, and some of the unimportant and obsolete preparations have been omitted. The visiting list has long enjoyed a well deserved popularity, not only on account of its excellent arrangement but also because it is of convenient size and is handsomely bound.


For sixty-three years the enterprising publishing house of P. Blakiston's Son & Co., have issued a physicians visiting list. None has been more complete than that for 1914 which contains treatment for poisons, the metric system simplified, dose-tables, periods of infectious diseases, asphyxia of apnoea, thermometric scale, etc. This handy pocket visiting list is bound in Russian leather and printed on good paper in clear type. We recommend this old standby to all physicians.