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As their early name implies, these swifts are all wings; accordingly the swiftness of their flight is such that the best shots make many misses and few hits. It took several rounds of ammunition for the five just added to the State collections. These specimens are all males, and inasmuch as their measurements differ slightly from published measurements, i. e., length 6.50-7.00 inches; extent, 14.00; they are given below for each bird:—

	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.
Length,	6½	6¾	6½	6¾	6½
Expanse,	14	14½	14½	14¾	14

From the foregoing measurements it will be seen that, while the length is less, the expanse is greater than those published. These swifts were first observed by Professor Bruner while on a government entomological expedition in the summer of 1891. At the direction of Professor Bruner his ornithological assistant, Mr. J. B. White, shot and prepared the above specimens this past summer. Being in charge of the Morrill geological expedition sent to this region by the University, I had occasion to fall in with Professor Bruner's party, and to observe these swifts personally. We must have seen several hundred at Squaw Canon flying in and out among the buttes which rise with nearly vertical walls five hundred to twelve hundred feet above the Hot Creek Basin.

Having occasion to visit this region several times annually with parties of students, it is to be hoped that we may obtain data for further notes, and that it may be possible to secure their nests and eggs, in spite of their inaccessible abodes.

ERWIN H. BARBOUR.

University of Nebraska, Sept. 30.

Star 1830 Groombridge.

In *Science* for Sept. 30, I note the letter of Professor A. W. Williamson, in which he propounds an hypothesis, admitted by himself to be forced and unwarranted by any natural facts, to

account for the incredible velocity attributed to the Star 1830 of Groombridge's catalogue. It is not necessary to resort to such untenable speculations to explain the phenomena referred to. The only reason for assigning such an extreme velocity to the star in question is the fact that it exhibits quite a large proper motion and no appreciable parallax. It may be, however, merely a case of masked parallax. If we suppose the star to have a large dark companion (numerous instances of which are known, as Algol, Procyon, etc.), we only need to assign to it a period and radius of revolution closely approximating that of the earth in its orbit, and a favorable position of orbital plane, to render the parallax quite imperceptible by the old methods. In such case the spectroscope might solve the problem by determining the orbital velocity, and thence the other elements, in case the plane of the orbit lay in our direction, and thus show that this star is really one of the nearest in the heavens to our system.

HENRY H. BATES.

Washington, D.C., Oct. 5.

Dr. Brendel's Photographs of Auroras.

IN your issue of July 22, 1892, you copied from *The Scottish Geographical Magazine* an interesting notice of the expedition made by Dr. Martin Brendel and Herr O. Baschin to Bossekop on the northern coast of Norway, last winter, to study the northern lights and attendant phenomena. Therein mention was made of the photographs of the aurora obtained by Dr. Brendel.

By his courtesy copies of some of these pictures are before me. Dr. Brendel modestly regards them as valuable chiefly for what they promise for the future. He hopes to visit the Arctic regions again with a much better equipment. But he has already achieved a great feat in securing even these photographs, the first of the kind ever taken. Tromholt's attempt in 1885 cannot be regarded as a success. The faintness of the light, the quivering and shifting of the auroral rays, and the non-actinic quality of certain colors, combine to make this a very difficult task. Dr. Brendel

Reading Matter Notices.

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By ALPHEUS SPRING PACKARD, M.D., Ph.D.

Sportsmen and ornithologists will be interested in the list of Labrador birds by Mr. L. W. Turner, which has been kindly revised and brought down to date by Dr. J. A. Allen. Dr. S. H. Scudder has contributed the list of butterflies, and Prof. John Macoun, of Ottawa, Canada, has prepared the list of Labrador plants.

Much pains has been taken to render the bibliography complete, and the author is indebted to Dr. Franz Boas and others for several titles and important suggestions; and it is hoped that this feature of the book will recommend it to collectors of *Americana*.

It is hoped that the volume will serve as a guide to the Labrador coast for the use of travellers, yachtsmen, sportsmen, artists, and naturalists, as well as those interested in geographical and historical studies.

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The American Geologist for 1892.

Edited by PROF. S. CALVIN, University of Iowa; DR. E. W. CLAYPOLE, Buchtel College; JOHN EYERMAN, Lafayette College; DR. PERSIPOR FRAZER, Penn. Hort. Soc.; PROF. F. W. CRAGIN, Colorado College; PROF. ROBT. T. HILL, U. S. Irrigation Survey; DR. ANDREW C. LAWSON, University of California; R. D. SALISBURY, University of Wisconsin; JOSEPH B. TYRRELL, Geol. Sur. of Canada; E. O. ULRICH, Minnesota Geological Survey; PROF. I. C. WHITE, University of West Virginia; PROF. N. H. WINCHELL, University of Minnesota. Now in its IXth volume. \$3.50 per year. Sample copies, 20 cents. Address

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does not say who manufactured the plates which he used; but they measure four by five inches. With a steady, diffused glow on an arch he has had very fair success, with an exposure of between forty seconds and five minutes. With a greatly agitated, curtain-like display, and an exposure of only one minute, he lost all detail. But a very sharp picture was secured, with an exposure of six seconds, of one end of an arch, which was composed of radiant streamers; the structure is distinctly shown. The pictures were obtained between Jan. 4 and Feb. 1, this year. On the night of Feb. 13-14, a heavy snow-storm prevented observations of the famous aurora of that date; but, as has already been mentioned, a remarkable magnetic disturbance was recorded by the needles.

The scientific world will wish Dr. Brendel good luck in his future endeavors, and will watch eagerly to see whether he finds it practicable to determine the parallax of auroras by this method.

JAMES P. HALL.

Brooklyn, N. Y., Oct. 8.

BOOK-REVIEWS.

The Horse: A Study in Natural History. By WILLIAM H. FLOWER, Director of the British Natural History Museum. New York, D. Appleton & Company.

THE "Modern Science Series," edited by the distinguished scientist, Sir John Lubbock, is not primarily designed for the specialist, nor, on the other hand, for the class of readers that reads merely to be entertained. It attempts rather to supply accurately, yet in language divested of needless technicalities, such information as is needed by everyone who desires to keep fairly abreast of the progress of modern knowledge.

The name of the author of the present volume is in itself a guarantee of the accuracy and interest of its contents, and in the reading we are not disappointed; for within 204 short pages the

horse and its relations to nature are presented in a sketch which is at once attractive and thorough.

In the first chapter the ancestral relations of the horse are especially considered; the second chapter discusses chiefly the horse's living allies; while the third and fourth chapters are devoted to structural features. But what adds unusual interest to the book is that the bearing of the facts upon the origin of the horse is in every chapter constantly kept in view. "The anatomy and history of the horse are . . . often taken as affording a test case of the value of the theory of evolution, or, at all events, of the doctrine that animal forms have been transmuted or modified one from another with the advance of time, whether, as extreme evolutionists hold, by a spontaneous or inherent evolving or unrolling process, or, as many others are disposed to think, by some mysterious and supernatural guidance along certain definite lines of change."

The conclusion is forced home to the reader that the horse is a very highly specialized type derived from a generalized ancestor by slow and gradual change, or evolution. The one-toed animal was once five-toed, and its heel was less raised above the ground than now; its teeth were once fitted for a much wider range of diet; its neck was short and a collar-bone, now absent, was once present; its tail was long; its brain — and especially the cerebrum — was small; instead of the open plain, it frequented the shady or often marshy borders of lakes and streams.

The various pages in the history of this evolution are presented as they have been recorded in the book of nature till at last the genealogy is traced back to the five-toed and otherwise generalized type, *Phenacodus*, of early Eocene age.

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