Western birds are largely at second hand and not very complete, while those of the species with which Mr. Nehrling is personally familiar —comprising the great majority—are full and show a real knowledge of the birds' haunts and habits. Mr. Nehrling is a botanist as well as an ornithologist, and many of his biographies tell more of the flowers and shrubs among which the birds live than of the birds themselves.

It is gratifying to see this meritorious work pressing so rapidly toward completion.

C. H. M.

SCIENTIFIC JOURNALS.

THE AMERICAN GEOLOGIST, SEPTEMBER.

Edward Hitchcock: By C. H. HITCHCOCK. President Hitchcock's name is thoroughly identified with the subject of ichnology and the Connecticut sandstone. To him belongs the honor of having proved the existence of a large fauna of giant bipeds and quadrupeds in the Trias of New England from their footmarks. The sketch of his life is accompanied by a portrait and an extended bibliography.

A Rational View of the Keeweenawan: By N. H. WINCHELL. The author continues his discussion of the Keweenawan from last month's number of this journal. His conclusions are briefly as follows: The so-called basal eruptives (gabbros, etc.) of the Keweenawan are pre-Keweenawan, and are separated from the Keweenawan by a long erosion interval. The lowest beds of the Keweenawan are conglomerates and sandstones, and not igneous rocks. With these basal clastics are included the Sioux, New Ulm and Baraboo quartzites. (This seems to be the first time that these quartzites have been assigned to the Keweenawan.) There is not sufficient evidence of a long erosion interval between the Keweenawan and the Upper Cambrian. The Animikie is Lower Cambrian in age, and the Olenellus horizon is separated from the Paradoxides horizon by the disturbance that closed the Animikie. The Keweenawan eruptive age, following the accumulation of the conglomerates and quartzites above mentioned, separated the Paradoxides horizon from the Dicellocephalus horizon.

The Mentor Beds: A Central Kansas Terrane of the Comanche Series: By F. W. CRAGIN. These beds, named from a small station in Saline county, Kansas, are a terrane of variegated earthy textured marine shales, with intercalated beds of brown sandstone, resting in part conformably upon the Kiowa shales, and in part unconformably upon the Permian. They are succeeded by the sediments of the Dakota. They were formerly considered by all geologists as constituting a part of the Dakota group, but are now known to belong to the upper part of the Comanche series. The Mentor beds are characterized by a fauna (which is here listed) related to that of the Denison beds, and still more closely to that of the Kiowa shales, with the latter of which its stratigraphic relation is close.

The Larval Stages of Trilobites: By CHARLES E. BEECHER. A common early larval form of trilobites is recognized and called the *protaspis*. It has a dorsal shield, a cephalic portion composed of five fused segments indicating as many paired appendages, and a pygidial portion consisting of the anal segment with one or more fused segments. The simplest larvæ are those of Cambrian genera. In later geologic time the protaspis acquired additional characters by earlier inheritance, as the free-cheeks, the eyes, the eye-line and ornaments of the test.

On account of the antiquity and generalized nature of the trilobites, their ontogeny is of considerable importance in interpreting crustacean phylogeny. The protaspis and crustacean nauplius are shown to be homologous larval forms, and the latter to have potentially five cephalis segments bearing appendages. The nauplius is considered as a modified crustacean larva. The protaspis more nearly represents the primitive ancestral larval form for the class, and approximates the protonauplius.

Recent Geological Work in South Dakota: By J. E. TODD. Prof. Todd, State Geologist, presents in a brief letter some points of general geological interest ascertained during this season's work in the Black Hills and in the northwestern part of the State.

THE ASTROPHYSICAL JOURNAL, AUGUST.

A New Form of Stellar Photometer: EDWARD C. PICKERING. A new photometer has been devised with special reference to the comparison

of stars some distance apart. The double-image prism is placed at the focus and the two images of the object glass are formed by two achromatic prisms which can be slid to any desired distance from the focus. A Foucault prism and eyepiece are placed behind the double-image prism. With this instrument stars 35′ apart may be brought together. This form is recommended for large telescopes for determining the brightness of the fainter stars.

On the Forms of the Disks of Jupiter's Satellites: S. I. Bailey. Observations made at Arequipa during the early part of the year indicate that under the best conditions, II., III. and IV. are always seen round. I. was twice observed to have an elongation, in each case being near the planet.

Note on the Magnesium Band at λ 5007: H. Crew and O. H. Basquin. This fluting upon being photographed plainly showed its bands to have a linear structure. A table gives the wave-lengths of the main lines.

Note on the Spectrum of Carbon: H. Crew and O. H. Basquin. This confirms the work of Kayser and Runge in showing by independent evidence that the three carbon bands at λ 4216, λ 3883 and λ 3590 were due to cyanogen.

The Measurement of some Standard Wave-lengths in the Infra-red Spectra of the Elements, II.: Exum Percival Lewis. In this second paper on the investigation of the infra-red spectra with the radiomicrometer, measurements are given of lines due to calcium, strontium and thallium.

Preliminary Table of Solar Spectrum Wave-lengths, VII.: Henry A. Rowland. The table is continued from λ 4903 to λ 5148.

Résumé of Solar Observations made in 1894 at the Astrophysical Observatory of Catania: A. Mascari. The months richest in the various phenomena were May for spots and pores, July for groups of spots and pores and for prominences, and September for faculæ. The prominences and faculæ have been more numerous in the southern than in the northern hemisphere. A marked maximum for the faculæ occurs between 10° and20°. There is a secondary maximum in the southern hemisphere between 60° and 70°, and a decided minimum in the polar regions. From the tables it is concluded that the secondary maxima of prominences of 1893 have moved toward the equator, while the absolute maximum has moved nearly 10° south. The phenomena of prominences and faculæ have not been always in complete accord.

A Spectrographic Determination of velocities in the System of Saturn: W. W. Campbell. The work of the new Mills spectograph on the Saturnian system has been a confirmation of that of Professor Keeler.

On the Existence of a Twilight Arc upon the Planet Mars: Percival Lowell. Micrometric measures of the equatorial diameter of Mars in November showed an increase over those made in October when the planet was nearer opposition, while the polar diameter remained practically unchanged. From this the author argues the existence of a twilight arc of 10° upon Mars.

Spectroscopic Observations of Colored Stars: Friedrich Krueger. This is a list of observations of such colored stars as have not hitherto been examined spectroscopically and of those which required a review because of former dubious results.

Minor Contributions and Notes: Preliminary Note on the Radiation of Incandescent Platinum. The Visible Spectrum of the Trifid Nebula. Note on the Spectrum of the Aurora Borealis. Observations of the B Band in Stellar Spectra. Note on the Spectroscopic Proof of the Meteoric Constitution of Saturn's Rings. Photograph of the Nebula near 42 Orionis Made at the Astrophysical Observatory of Colonia. Note on the D_3 Line in the Spectrum of the Chromosphere. Étienne-Léopold Trouvelot. The Belgian Astronomical Society.

NEW BOOKS.

The Alps from End to End. Sir William Martin Conway. Westminster, Archibald, Constable & Co. New York, Macmillan & Co. 1895. Pp. xii+403. $7.00.

Icebound on Kolguev. Aubyn Trevar Battye. Westminster, Archibald, Constable & Co. New York, Macmillan & Co. 1895. Pp. xxviii+458. $7.00.

An Introduction to the Study of Zoölogy. B. Lindsay. London, Levan, Sonnenschien & Co. New York, Macmillan & Co. 1895. Pp. xii+356. $1.60.