

strata were well jointed, and at a time when the stratification planes were the leading lines of weakness. The dikes connected with the sills have irregular contact planes. The later dikes which cut the sills follow master joints. There is reason, in this field at least, for supposing that intrusion in the form of sheets took place, because the rock yielded more readily in a horizontal direction along the bedding planes than it did along vertical lines. But there is little in the mode of occurrence, or in the scale of these intrusions or the elevation of the strata above them, to afford a full comparison with the typical laccolites of the West.

In the review of the literature of laccolitic intrusions, an early account of a quaquaversal hill covering a domeshaped mass of trap in Derbyshire, England, seems to have been overlooked. The account and a cross-section will be found in Bakewell's *Introduction to Geology*, 2d Am. ed., New Haven, 1833, pp. 95-97.

J. B. WOODWORTH.

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Bibliography of North American Paleontology 1888-1892. By CHARLES ROLLIN KEYES. Bull. U. S. G. S., No. 121. 251 pp. Washington. 1894.

This publication will be received with welcome by paleontologists. Each separate paper appears under several subject headings, biologic, stratigraphic or geographic, so that the cross references make the list as good a substitute for a card catalogue as a printed list can be.

Several criticisms can, however, be made, for a close examination shows the work to be full of imperfections. Firstly, the compilation was carelessly done. This is evidenced in the careless copying of titles as well as in the omission from the list of nearly 150 papers published during 1888-1892, which is one sixth of the total number of papers appearing in the list under the authors' names. In many cases the titles are not given in full (as it is claimed they are in the introduction, p. 7).

Examples of such wrong copying are:

P. 229, second entry should be—Vodges, A. W. A *Bibliography of Paleozoic Crustacea* from 1698 to 1889, including a list of North

American species and a systematic arrangement of genera.

P. 70, seventh entry includes two separate papers by separate authors. They are—Dawson, J. William. Preliminary note on new species of sponges from the Quebec Group at Little Métis (Can. Rec. Sci. III, 49-59, figs. April, 1888). Hinde, George Jennings. Notes on sponges from the Quebec Group at Métis, and from the Utica Shale (Can. Rec. Sci. iii, 59-68. April, 1888).

P. 183, second entry should be—Ringueberg, Eugene N. S. The Crinoidea of the Lower Niagara Limestone at Lockport, N. Y., with new species.

P. 190, third entry should be—Shaler, N. S. The Geology of the Cambrian District of Bristol county, Mass.

P. 108—Hollick, Alfred, should be—Hollick, Arthur.

P. 73, fourth entry should be—Hamilton, Chenango and Otsego counties, New York.

P. 73, third entry. 'Geology of Skunnemunk Mountain, Osage county, N. Y.,' should be; Geology of Skunnemunk Mountain, Orange county, N. Y. This title together and several others, though appearing under certain of the subject headings, are not entered under their author's names.

Pp. 21, 86, 198, 226. — 'Bison latiformis' should be *Bison latifrons*.

Pp. 30, 39, 42, 71.—The generic term *Clymenia* (a Cephalopod) appears as 'Calymene' (a Trilobite).

The proof reading is very bad, surprisingly so in a publication issued by the United States Geological Survey. The proof was read evidently by a person having no knowledge whatever of paleontological terms, for a large number of generic and specific names are incorrectly spelled. Some of the most unpardonable mistakes are 'Necomian,' 'Cheyene,' 'Ciasaurus,' 'Paneka,' 'Ceatopsidæ,' 'Foraminiferial,' etc.

P. 76, twelfth entry, 'Magia' probably means Niagara. The spelling in the species lists under titles of Matthew, G. F., is particularly bad.

The value of the publication would be greatly increased were the subject-matter printed on one side of each sheet only. This arrangement would enable the working paleontologist to

cut out the various items for pasting upon cards of his catalogue.

Appended are some of the more important papers which, though having appeared during the interim of 1888-1892, have not been listed by Mr. Keyes.

Ami, Henry M. Notes and Descriptions of some New and hitherto Unrecorded Species of Fossils from the Cambro-Silurian (Ordovician) Rocks of the Province of Ontario. *Can. Rec. Sci.* v, 96-103. April, 1892.

Ami, Henry M. Palæontological Notes I. On a Collection of Fossils from the Ordovician of Joliette in the Province of Ontario. *Can. Rec. Sci.* v, 104-107. April, 1892.

Ami, Henry M. Palæontological Notes II. On the Occurrence of Fossil Remains on the Manitou Islands, Lake Nipissing, Ontario. *Can. Rec. Sci.* v, 107-108. April, 1892.

Ami, Henry M. The Utica Terrane in Canada. *Can. Rec. Sci.* v, 166-183; 234-246. July and October, 1892.

Beecher, Charles E. On the Development of the Shell in the genus *Tornoceras*, Hyatt. *Am. Jour. Sci.* xl, 71-75, i. July, 1890.

Calvin, S. Some New Species of Paleozoic Fossils. *Bull. Lab. Nat. Hist. State Univ. Iowa*, i, 173-181, i-iii. June, 1890.

Dawson, J. Wm. On Sporocarps discovered by Prof. E. Orton in the Erian Shale of Columbus, Ohio. *Can. Rec. Sci.* iii, 137-140. July, 1888.

Hollick, Arthur. Additions to the Paleobotany of the Cretaceous Formation on Staten Island. *Trans. N. Y. Ac. Sci.* xii, 28-39, i-iv. Nov., 1892.

Hollick, Arthur. Paleobotany of the Yellow Gravel at Bridgeton, N. J. *Bull. Torr. Bot. Club*, xix, 330-333. Nov., 1892.

Hyatt, Alpheus. Jura and Trias at Taylorville, Cal. *Bull. Geol. Soc. Amer.* iii, 395-412.

Koken, E. Ueber die Entwicklungsgeschichte der Gastropoden vom Cambrium bis zur Trias. *Neues Jahrb. Min., etc.*, B. B. vi, 305-484, x-xiv. 1889.

Lapworth, Chas. On Graptolites from Dease River, B. C. *Can. Rec. Sci.* iii, 141-142. 1888.

Matthew, G. F. Illustrations of the Fauna of the St. John Group. No. vii. *Trans. Roy. Soc. Can.* x, Sect. iv, 95-109, pl. i. 1892.

Matthew, G. F. On the Diffusion and Sequence of the Cambrian Faunas. *Trans. Roy. Soc. Can.* x, Sect. iv, 3-16.

Scudder, Samuel H. Illustrations of the Carboniferous Arachnida of North America, of the orders Anthracomarti and Pedipalpi. *Mem. Bos. Soc. Nat. Hist.* iv, 443-456, xxxix-xl. 1890.

Scudder, Samuel H. The Insects of the Triassic Beds at Fairplay, Colo. *Mem. Bos. Soc. Nat. Hist.* iv, 457-472, xli-xlii. 1890.

Ulrich, E. O. Notes on Lower Silurian Bryozoa. *Jour. Cin. Soc. Nat. Hist.* Jan., 1890. Pp. 173-198.

Whitfield, R. P. Contributions to Invertebrate Paleontology. I. Descriptions of Fossils from the Palæozoic Rocks of Ohio. *Ann. N. Y. Ac. Sci.* v, 505-622, v-xvi. 1891.

Williams, Henry S. An account of the Progress in North American Paleontology for the years 1887, 1888. *Smithsonian Report for 1888.* Pp. 261-326. 1890.

GILBERT VAN INGEN.

SOCIETIES AND ACADEMIES.

BIOLOGICAL SOCIETY OF WASHINGTON, 248TH MEETING, SATURDAY, NOV. 2.

MR. F. V. COVILLE spoke of the botanical explorations of Thomas Coulter in Mexico and California.

Thomas Coulter, the Irish botanist, he said was born in the year 1793, near Dundalk, Ireland. He received his A. B. degree at Dublin University in 1817, and his A. M. in 1820. He then went to Geneva, where he studied for about three years under DeCandolle, and published a monograph of the Dipsacæ in 1823. In 1824 he sailed for Mexico, where for six years he made collections of plants at Real del Monte, Zimapan, Zacatecas, Hermosillo and presumably at intermediate points. In 1831 he reached Monterey, California, where he spent the winter with David Douglas, the Scotch botanist, and in the following Spring he made a journey from Monterey by way of San Luis Obispo, Santa Ynez, Santa Barbara, San Buenaventura, San Fernando, San Gabriel, Pala and San Felipe to a point on the Colorado River eight miles below its junction with the Gila, returning by