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[Bulletin No. 121.]

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GEOLOGICAL SURVEY

No. 121



WASHINGTON

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1894



UNITED STATES GEOLOGICAL SURVEY

J. W. POWELL, DIRECTOR

A

BIBLIOGRAPHY

OF

NORTH AMERICAN PALEONTOLOGY

1888-1892

BY

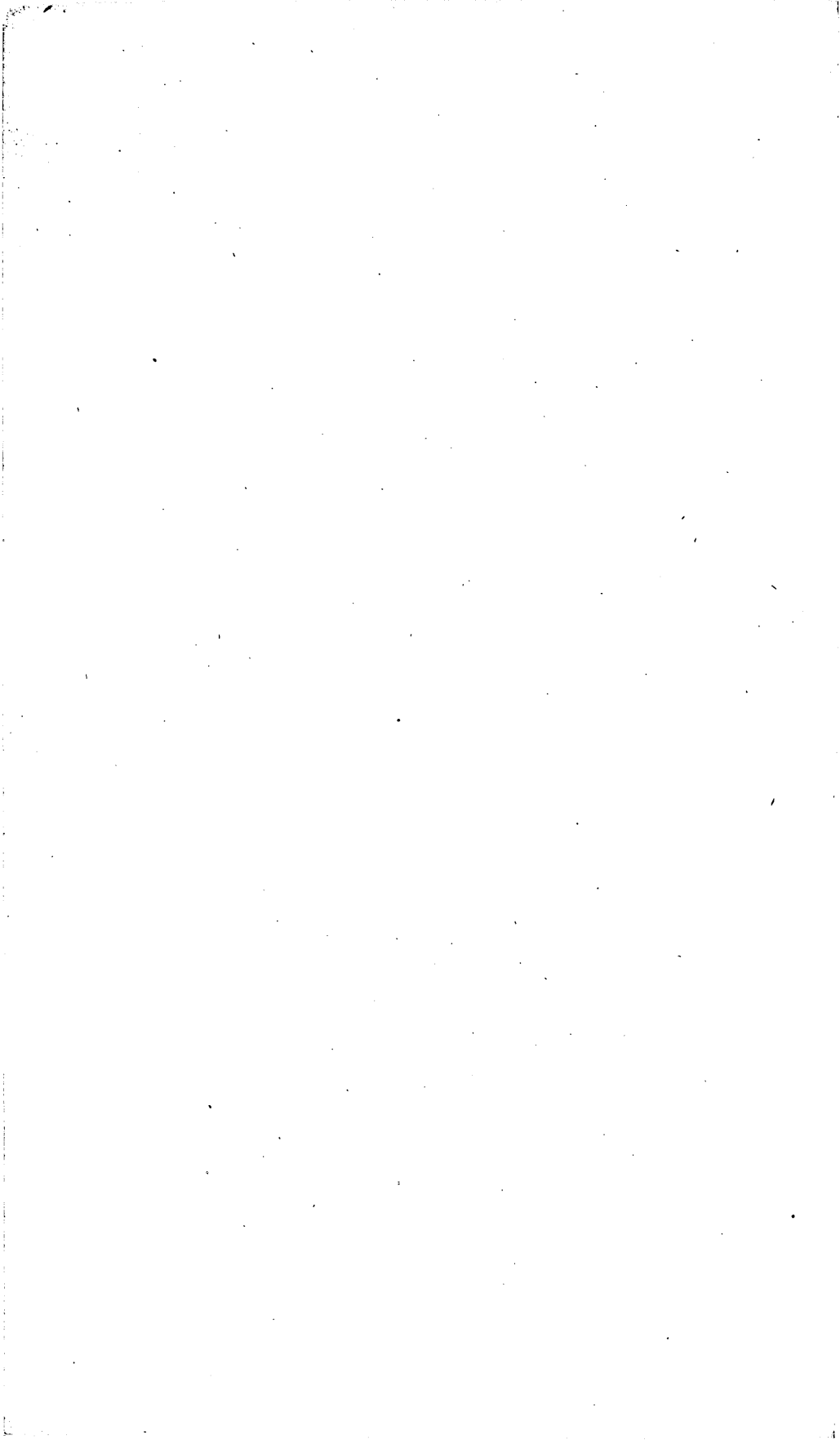
CHARLES ROLLIN KEYES



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LETTER OF TRANSMITTAL.

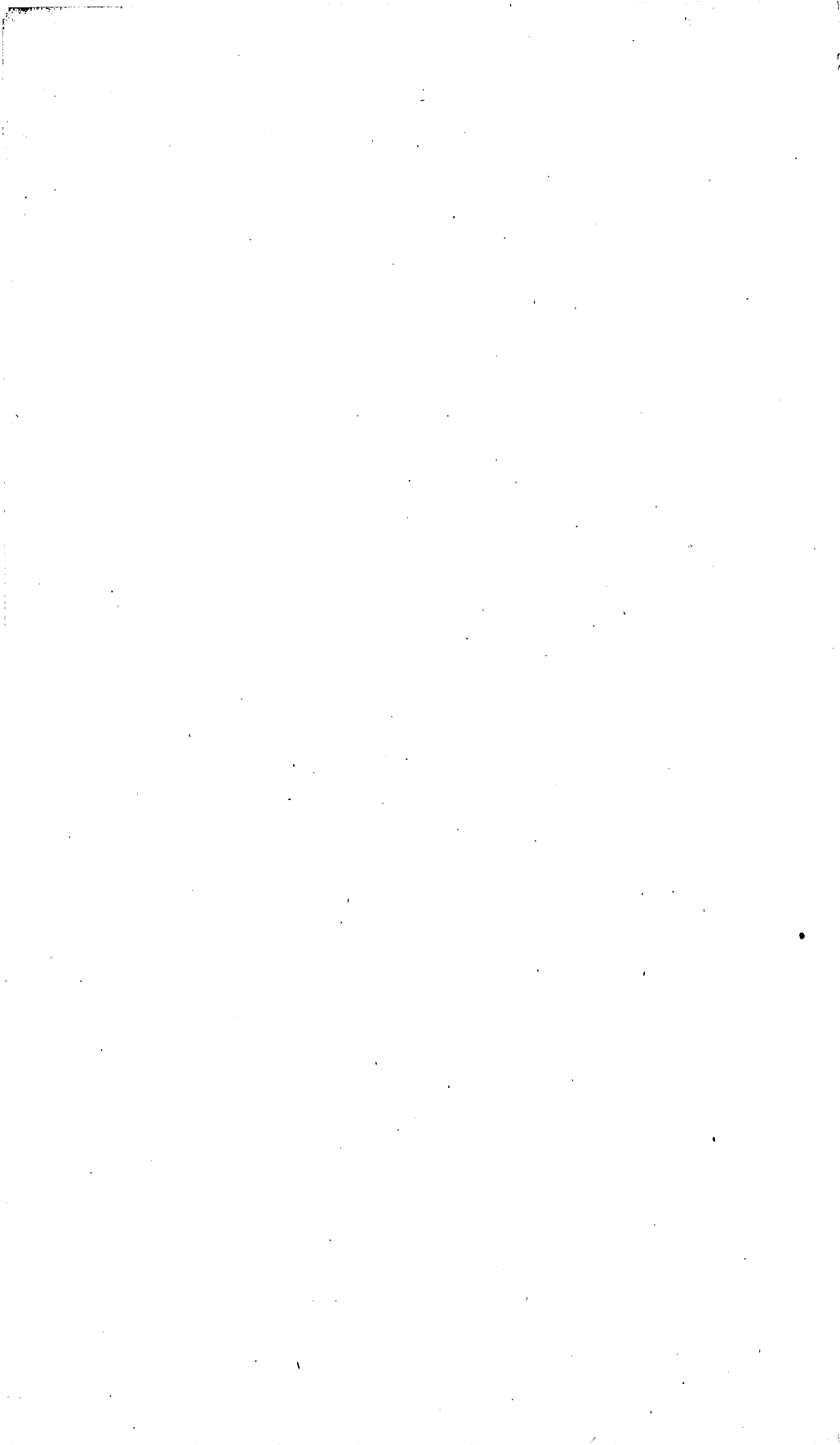
DEPARTMENT OF THE INTERIOR,
U. S. GEOLOGICAL SURVEY,
DIVISION OF GEOLOGY AND PALEONTOLOGY,
Washington, D. C., April 27, 1894.

SIR: I have the honor to transmit herewith a bibliography of North American paleontology for the years 1888-1892, inclusive, by Charles R. Keyes, with the recommendation that it be published as a bulletin of the Survey.

I am, with respect, your obedient servant,

CHAS. D. WALCOTT,
Geologist in Charge.

Hon. JOHN W. POWELL,
Director U. S. Geological Survey.



BIBLIOGRAPHY OF NORTH AMERICAN PALEONTOLOGY, 1888-1892.

BY CHARLES ROLLIN KEYES.

INTRODUCTION.

The present bibliography is a record of North American paleontology for the years 1888 to 1892, inclusive. It is essentially a dictionary-catalogue of publications relating to the subject, which were issued in the lustrum mentioned. It may be regarded, therefore, as a condensed review of the paleontologic literature appearing during the period.

In arrangement, the references are primarily adapted to the convenience of the working paleontologist and geologist. There are embraced:

(1) An author's list, in which is given the full title and the volume, pages, and illustrations of the book or serial in which each article appeared, also the date and place of publication. This is followed by a brief synopsis of the contents of each paper, an enumeration of the new genera and species described, and a list of forms already known, which are described and figured anew.

(2) A title index, in which the name of each article appears under each of its leading words. Then comes the name of the author and an abridged reference to the place of appearance.

(3) Subject entries and cross references. These are biologic, geologic, and geographic. The first is divided into the great zoologic groups, under each of which appears all the published papers which refer to the particular sections. The names of the authors and abridged references to place and time of publication are given in all cases. Whenever additional information is wanted, as to the species described or the specific contents, reference may be readily made to the name of the author. Under the second, all papers treating of the larger geologic groups are classed together and the references given as before. In the third the different papers referring to the various States and Territories are brought together in a similar way. Whenever deemed necessary brief explanations are added. A full list of subjects is appended.

One of the principal advantages in the present scheme is that in no case is it necessary to turn back from title to title in order to obtain a full bibliographic reference. A worker upon any systematic group of animals, a particular geologic age, or a given area finds all the articles upon the subject brought together.

In the consideration of the bibliographic matter the literature of the subject may be classed under three categories: (a) That which is strictly paleontologic in its character, (b) that which is incidental to geologic work, (c) that which is largely secondary, forming important announcements of discoveries or partaking of the character of criticisms, notices, or reviews of work already done. References belonging to these three classes of literature have in the present connection received very different treatment, according to the importance of their bearing upon paleontology.

During the preparation of the Bibliography the works in the subjoined list were consulted. In addition circular letters were addressed to all the leading American workers who were known to have published articles relating to paleontology, in order that fuller justice might be done in each case. Most of these letters received cordial replies; in the case of a few answers were greatly delayed, while several were probably forgotten altogether.

For aid and suggestions in the preparation of this work sincere thanks are tendered Mr. Charles D. Walcott, chief of the Division of Invertebrate Paleontology; also to Mr. H. F. Bain, of the Iowa Geological Survey, for valuable assistance.

LIST OF SUBJECTS.

Biologic:

Protozoans.
Corals.
Hydroids.
Polyzoans.
Echinoderms.
Brachiopods.
Lamellibranchs.
Gasteropods.
Cephalopods.
Trilobites.
Crustaceans (nontrilobitic).
Insects.
Vertebrates.

Geologic:

Algonkian.
Cambrian.
Silurian.
Devonian.
Carboniferous.
Jurassic.
Triassic.
Eocene.
Neocene.
Pleistocene.

Geographic:

America (general).
Canada (general).
All States and Territories of the
United States and Canada.

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American Philosophical Society, Transactions, Philadelphia.

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Nord, Société Géologique, Memoirs, Lille.
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- | | |
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| Leptobalus insignis Hall. | Trocholites ammonicus Conrad. |
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| Neotremata. | Telotremata. |
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Sirenian Fossil from California. O. C. Marsh. (Am. Jour. Sci., (3), xxxv, 94-96. 1888.) One new genus and one new species described as new.

Call, R. Ellsworth. New Post-Pleiocene Linnæid. (American Geologist, Vol. i, pp. 146-148. Minneapolis, 1888.) *Pompholopsis whitei* described and figured as new from California.

Call, R. E., C. R. Keyes and. Quaternary Section Southeast of Des Moines, Iowa. (Proc. Iowa Acad. Sci., 1890-1891, p. 30. Des Moines, 1892.) Description of a section near the terminal moraine in the vicinity of Des Moines.

Calvin, S. Additional Notes on Devonian Rocks of Buchanan County, Iowa. (American Geologist, Vol. viii, pp. 142-145. Minneapolis, 1891.) Numerous references to fossils.

Calvin, S. Collection of Fossils from Lower Magnesian Limestone from Northeastern Iowa. (American Geologist, Vol. x, pp. 144-148. Minneapolis, 1892.)

Notes on various species, with descriptions, without figures:

<i>Metoptoma alta</i> Whitfield.	<i>Raphistoma paucivolvatum</i> sp. nov.
<i>Straparollus claytonensis</i> sp. nov.	<i>Holopea turgida</i> Hall.
<i>Straparollus pristiniiformis</i> sp. nov.	<i>Murchisonia</i> sp. ?
<i>Raphistoma pepinense</i> Meek.	<i>Orthoceras primigenium</i> Vanuxem.
<i>Raphistoma multivolvatum</i> sp. nov.	<i>Cyrtoceras luthi</i> sp. nov.

Calvin, S. Collection of Fossils from Lower Magnesian Limestone from Northeastern Iowa. (Bul. Lab. Nat. Hist. State Univ. Iowa, Vol. i, No. 2, pp. 189-193. Iowa City, 1892.) The following species described:

<i>Metoptoma alta</i> Whitfield.	<i>Raphistoma pepinense</i> Meek.
<i>Straparollus claytonensis</i> sp. nov.	<i>Raphistoma paucivolvatum</i> sp. nov.
<i>Straparollus pristiniiformis</i> sp. nov.	<i>Holopea turgida</i> Hall.
	<i>Murchisonia</i> sp. ?
	<i>Orthoceras primigenium</i> Vanuxem.
<i>Raphistoma multivolvatum</i> sp. nov.	<i>Cyrtoceras luthi</i> sp. nov.

Calvin, S. Description of a New Species of Spirifera from the Hamilton Group, near Iowa City, Iowa. (Bul. Lab. Nat. Hist. State Univ. Iowa, Vol. i, pp. 28-29. Iowa City, 1888.) *Spirifera urbana* described, without figure.

Calvin, S. Difference between *Acervularia profunda*, Hall, and *Acervularia Davidsoni*, Edwards and Haime. (Proc. Iowa Acad. Sci., 1890-1891, pp. 30-32. Des Moines, 1892.) The specific differences of the two forms are minutely described.

Calvin, S. Difference between *Acervularia profunda* Hall, and *Acervularia Davidsoni* Edwards and Haime. (American Geologist, Vol. ix, pp. 355-358. Minneapolis, 1892.) The specific characters and differences of the forms are fully described. A corrected republication of the preceding paper.

- Calvin, S.** Fossils Collected in Northwest Territory, Canada, by Naturalists from the University of Iowa. (Bul. Lab. Nat. Hist. State Univ. Iowa, Vol. II, pp. 163-165. Iowa City, 1892.) *Pentamerus decussatus* Whiteaves, described and figured, with notes on various other species.
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- Clarke, J. M.** Trilobitas do Grez de Ereré e Maecurú, Estado do Para, Brazil. (Archivos do Museu Nacional do Rio de Janeiro, Vol. IX, pp. 1-58, 2 plates. 1890.) Describes and figures 18 species of Devonian trilobites, all but two being new. The descriptions are followed by a summary of the faunal indications of the several species, and by a correlation based upon them.
- Clarke, J. M., C. E. Beecher and.** Development of Some Silurian Brachiopoda. (Mem. N. Y. State Mus. Nat. Hist., I, 1-95, 8 plates. Albany, 1889.) Reviewed in *Am. Geologist*, V, 54, 55, 1890.
- Clarke, J. M., C. E. Beecher and.** New Lower Oriskany in Columbia County, New York; with an Annotated List of Fossils. (*Am. Jour. Sci.*, (3), Vol. XLIV, pp. 410-414. New Haven, 1892.)
- Clarke, J. M., James Hall and.** Paleontology of New York. (*Nat. Hist. New York, Pal.*, Vol. VII, 236 pp., 36 plates. Albany, 1888.)
- Clarke, J. M., J. Hall and.** Paleontology of New York. (*Nat. Hist. New York, Pal.*, Vol. VIII, Pt. I, 367 pp., 20 plates. Albany, 1892.) An introduction to study of the genera of paleozoic Brachiopoda.
- Classification and Arrangement of American Paleozoic Crinoids into Families.** S. A. Miller. (*American Geologist*, VI, 275-286 and 340-357. 1890.)
- Classification and Arrangement of American Paleozoic Crinoids in Families.** S. A. Miller. (*Indiana Dept. Geol. and Nat. Hist.*, Sixteenth Ann. Rep. State Geologist, for 1889, 302-326. 1889.)
- Classification of Cephalopoda.** F. A. Bather. (*American Geologist*, X, 396, 397. 1892.)
- Classification of Crinoidea, Discovery of Ventral Structure of Taxocrinus and Haplocrinus and Consequent Modification.** C. Wachsmuth and F. Springer. (*Proc. Acad. Nat. Sci., Philadelphia*, 337-363. 1888.)
- Classification of Dyas, Trias, and Jura in Northwest Texas.** J. Marcon. (*American Geologist*, X, 369-377. 1892.) Incidental allusions to various species of fossils.
- Classification of Lower Carboniferous Rocks in Mississippi Valley.** C. R. Keyes. (Pamphlet, Washington: Judd & Detweiler, printers, 1892, 1-24. 1892.)
- Classification of Salter and Hicks; How is the Cambrian Divided?** G. F. Matthews. (*American Geologist*, VI, 139, 140. 1889.) Various references to fossils.
- Classification of Stages of Growth and Decline: Development of Brachiopoda, Part II.** C. E. Beecher. (*Am. Jour. Sci.*, (3), XLIV, 133-154. 1892.)
- Classification of Testudinata.** G. Baur. (*American Naturalist*, XXIV, 530-536. 1890.) Allusions to various species of fossils.
- Classification of Trilobites as Influenced by Stratigraphical Relations, with Outline of a New Grouping of these Forms.** E. J. Chapman. (*Trans. Roy. Soc. Canada*, VII, Sec. IV, 113-120. 1889.)
- Classification, Values of Stages in Growth and Decline, with Propositions of a new Nomenclature.** A. Hyatt. (*American Naturalist*, XXII, 872-884. 1888.)
- Claypole, E. W.** Discovery by Wm. Clark of Fossil Fish in the Cleveland Shale. (*American Geologist*, Vol. II, pp. 62-64. Minneapolis, 1888.) A few brief notes on the discovery and characters of the remains.
- Claypole, E. W.** Episode in the Paleozoic History of Pennsylvania. (*American Geologist*, Vol. VIII, pp. 152-160. Minneapolis, 1891.) List of fossils from the Hamilton given.

- Claypole, E. W.** Head of *Dinichthys*. (American Geologist, Vol. x, 199-207, 3 plates. Minneapolis, 1892.) A full description of the head of *Dinichthys intermedius*.
- Claypole, E. W.** New Gigantic Placoderm from Ohio. (American Geologist, Vol. x, pp. 1-4. Minneapolis, 1892.) *Gorgonichthys clarki* is described as a new genus and species from the Cleveland shale.
- Claypole, E. W.** Megalonyx in Holmes County, Ohio. (American Geologist, Vol. vii, pp. 122, 123 and 149-153. Minneapolis, 1891.) The discovery of Megalonyx announced and its characters described.
- Claypole, E. W.** Paleontological Notes from Indianapolis. (American Geologist, Vol. vi, pp. 255-260. Minneapolis, 1890.) Notes on the paleontological papers presented at the Indianapolis meeting of the A. A. A. S., with descriptions of *Eurysona newlini* gen. et sp. nov. from the Waterline of Indiana.
- Claypole, E. W.** Structure of American Pteraspidian Palaeaspis Claypole, with Remarks on the Family. (Quart. Jour. Geol. Soc. London, Vol. XLIII, pp. 542-561. London, 1892.) An "attempted restoration of *P. americana*" is given. Reviewed in Am. Jour. Sci., (3), XLIV, 428, 429, 1892; Ann. and Mag. Nat. Hist., 334, 1892.
- Cleveland Shale, Fossil Fish.** E. W. Claypole. (American Geologist, II, 62-64. 1888.)
- Clidastes**, Kansas Mosasaurs, Part I. S. W. Williston and E. C. Case. (Kansas Univ. Quart., I, 15-32. 1892.)
- Clinton Group of Ohio; Part IV, Chemical and Stratigraphical Geology and Geographical Paleontology.** A. F. Foerste. (Bul. Sci. Lab. Dennison Univ., III, Pt. I, 3-10. 1888.)
- Coal-measures and Subcarboniferous Rocks of Indiana, Missouri, and Iowa.** S. A. Miller and W. F. E. Gurley. (Indiana Dept. Geol. and Nat. Hist., Sixteenth Ann. Rep. State Geologist, for 1888, 327-373. 1889.)
- Coal-measures and Subcarboniferous Rocks of Indiana, Missouri, and Iowa, Echinodermata.** S. A. Miller and W. F. E. Gurley. (Jour. Cincinnati Soc. Nat. Hist., XIII, 25 pp. April, 1890; completed by the authors, 60 pp. 1890.)
- Coal-measures at Des Moines, Iowa, Fossils.** C. R. Keyes. (American Geologist, II, 23-28. 1888.)
- Coal-measures of Central Iowa, and Particularly in the Vicinity of Des Moines.** C. R. Keyes. (American Geologist, II, 386-404. 1888.)
- Coal-measures of Central Iowa, Contribution to Fauna.** C. R. Keyes. (Proc. Iowa Acad. Sci., I, Pt. II, 22, 23. 1892.)
- Coal-measures of Central Iowa, Fauna.** C. R. Keyes. (Proc. Acad. Nat. Sci., Phila., 1888, 222-247. 1888.)
- Cockroach Fauna at Richmond, Ohio, Interesting Paleozoic.** S. H. Scudder. (Proc. Boston Soc. Nat. Hist., XXIV, 45-53. 1889.)
- Cockroaches from Carboniferous Deposits of United States, New Types.** S. H. Scudder. (Mem. Boston Soc. Nat. Hist., IV, 401-415. 1890.)
- Cohasset, Mass., Lower Cambrian Fossils.** C. D. Walcott. (Proc. Biol. Soc. Washington, VII, 155. 1892.)
- Coleoptera in Interglacial Clays of Scarboro, Ontario.** S. H. Scudder. (Proc. Bost. Soc. Nat. Hist., XXIV, 467, 468. 1890.)
- Color in Fossil Shells, Preservation.** C. R. Keyes. (The Nautilus, IV, 30, 31. 1890.)
- Colorado.**
- Butterflies of Florissant. S. H. Scudder. (U. S. Geol. Sur., Eighth Ann. Rep., 433-474. 1890.)
- Butterfly, Fossil. S. H. Scudder. (Psyche, VI, 101. 1891.)
- Cretaceous Mammalia. O. C. Marsh. (Am. Jour. Sci., (3), XLIII, 247-262. 1892.)
- Denver Formation, Age. E. D. Cope. (Science, XIII, 290. 1889.)
- Denver Tertiary Formation. W. Cross. (Am. Jour. Sci., (3), XXXVII, 261-282. 1889.) Incidental references to fossils.

Colorado—Continued.

- Dinosauria, New American. O. C. Marsh. (Am. Jour. Sci., (3), xxxvii, 331-336. 1889.)
- Dinosaurian Reptiles, Description. O. C. Marsh. (Am. Jour. Sci., (3), xxxix, 81-86. 1890.)
- Distinctive Characters of Order Hallopoda. O. C. Marsh. (Am. Jour. Sci., (3), xxxix, 415-417. 1890.)
- Field Work of U. S. Geological Survey. S. H. Scudder. (Psyche, vi, 101, 102. 1891.) Incidental references to fossils.
- Fishresten in Untersilur, Auffindung. C. D. Walcott. (Neues Jahrbuch f. Min., Geol. u. Pal., 284. 1891.)
- Gigantic Horned Dinosauria from Cretaceous. O. C. Marsh. (Am. Jour. Sci., (3), xxxviii, 173-176. 1889.)
- Goniopholis in Jurassic of Colorado. E. D. Cope. (American Naturalist, xxii, 1106, 1107. 1888.)
- Identification of Dinosaur from Denver Group. G. L. Cannon, jr. (Proc. Colorado Sci. Soc., viii, 253. 1892.)
- Identification of Dinosauria from Denver Group. G. L. Cannon, jr. (Proc. Colorado Sci. Soc., iii, 253, 254. 1890.)
- Insects, Fossil. S. H. Scudder. (Psyche, vi, 118. 1891.)
- Insect, Fossil, Localities in Rocky Mountain Region. S. H. Scudder. (Psyche, v, 362. 1892.)
- Laramie Group. J. S. Newberry. (Bul. Geol. Soc. America, i, 524-527. 1890.) Abstract.
- Llama Remains from Colorado and Kansas. F. W. Cragin. (American Geologist, ix, 257-260. 1890.)
- Post-Laramie Deposits of Colorado. W. Cross. (Am. Jour. Sci., (3), xlii, 19-42. 1892.) Fossils mentioned.
- Restoration of Ciasaurus and Ceratosaurus. O. C. Marsh. (Am. Jour. Sci., (3), xlii, 343-349. 1892.)
- Revision of Cretaceous Echinoidea of North America. W. B. Clark. (Johns Hopkins Univ. Circulars, x, No. 87, 75-77. 1891.)
- Silurian, Fish Remains. [Anon.] (Science, xvii, 107. 1891.)
- Silurian (Ordovician), Ichthyic Fauna and its Mode of Occurrence. C. D. Walcott. (Bul. Geol. Soc. America, iii, 153-172. 1891.) Abstract.
- Torosaurus, Skull. O. C. Marsh. (Am. Jour. Sci., (3), xlii, 81-84. 1892.)
- Trenton Fish, Supposed. (American Geologist, viii, 178-180. 1891.)
- Vertebrate Fauna of Puerco Epoch. E. D. Cope. (American Naturalist, xxii, 161-163. 1888.)
- Comparisons of Eozoon.** (American Geologist, ix, 53-55. 1892.) An editorial with notes on different forms.
- Comparisons of Principal Forms of Dinosauria of Europe and America.** O. C. Marsh. (Am. Jour. Sci., (3), xxxvii, 323-331. 1889.)
- Comparisons of Principal Forms of Dinosauria of Europe and America.** O. C. Marsh. (Rep. British As. Adv. Sci., 1888, 660. 1889.)
- Concho Country, State of Texas, Geological Survey.** W. F. Cummins and O. Lerch. (American Geologist, v, 321-323. 1890.) Incidental references to fossils.
- Confounding of Nassa Trivittata (Say) and Nassa Peralta (Conrad).** G. D. Harris. (American Geologist, viii, 174-176. 1891.)
- Connecticut.**
- Dinosauria, American. O. C. Marsh. (Am. Jour. Sci., (3), xxxvii, 331-336. 1889.)
- Fishes and Fossil Plants of Triassic Rocks of New Jersey and Connecticut Valley. J. S. Newberry. (U. S. Geol. Sur., Mon. xiv, 95 pp. 1888.)
- Taconic System of Emmons and use of Name Taconic in Geologic Nomenclature. C. D. Walcott. (Am. Jour. Sci., (3), xxxv, 229-242. 1888.) Incidental references to the fossils.

Connecticut—Continued.

- Triassic Dinosauria. O. C. Marsh. (Am. Jour. Sci., (3), XLIII, 543-546. 1892.)
- Triassic Formation of Connecticut, two Belts of Fossiliferous Black Shale. W. M. Davis and S. W. Loper. (Bul. Geol. Soc. America, II, 415-430. 1891.)
- Vertebrate Fossils. O. C. Marsh. (Am. Jour. Sci., (3), XLII, 265-269. 1891.)
- Connecticut Valley, Fossil Fishes and Fossil Plants of Triassic Rocks. J. S. Newberry. (U. S. Geol. Sur., Mon. XIV, 95 pp. 1888.)
- Connecticut Valley, New Footprints. M. M. Nitiver. (Proc. Am. As. Adv. Sci., XL, 286. 1892.) Abstract.
- Conocardium* from Devonian. C. R. Keyes. (Proc. Iowa Acad. Sci., I, Pt. II, 23, 24. 1892.)
- Conularia* Missouriensis, Swallow, with Crenulated Costae. S. Calvin. (American Geologist, v, 207-208. 1890.)
- Cooper, W. F. Tabulated List of Fossils known to occur in the Waverly of Ohio, Compiled. (Bul. Sci., Lab. Dennison Univ., Vol. IV, Pt. I, pp. 123-130. Granville. 1888.) This list gives the known stratigraphic range of the species in Ohio.
- Cope, E. D. Adhesive Disk of *Echeneis*. (American Naturalist, Vol. XXIII, pp. 254, 255. Philadelphia, 1889.) Critical notes on recent work by Storms on *Echeneis glaronensis*.
- Cope, E. D. Age of Denver Formation. (Science, Vol. XIII, p. 290. New York, 1889.) Says that the Denver and Willows Creek formations are Laramie. Incidental references to fossils.
- Cope, E. D. Age of Staked Plains of Texas. (American Naturalist, Vol. XXVI, p. 49. Philadelphia, 1892.) A brief note.
- Cope, E. D. Aneghino on the Extinct Mammalia of Argentina. Review. (American Naturalist, Vol. XXV, pp. 725-727. Philadelphia, 1891.) A critical synopsis.
- Cope, E. D. Artiodactyla. (American Naturalist, Vol. XXIII, 111-136 bis, 3 plates. Philadelphia, 1889.) Continuation of paper in same journal in Vol. XXII, pp. 1079-1095.
- Cope, E. D. Artiodactyla. (American Naturalist, Vol. XXII, pp. 1079-1095, 2 plates. Philadelphia, 1888.) This is a general discussion of the group and its evolution.
- Cope, E. D. Baur's Morphogeny of the Carpus and Tarsus of the Vertebrates. (American Naturalist, Vol. XXII, pp. 435-437. Philadelphia, 1888.) A critical review of the work.
- Cope, E. D. Boulenger on Rhynchocephalia, Testudinata, and Crocodila. (American Naturalist, Vol. XXV, pp. 813, 814. Philadelphia, 1891.) A review of a portion of the catalogue of the British Museum.
- Cope, E. D. California Cave Bear. (American Naturalist, Vol. XXV, pp. 997-999, 1 plate. Philadelphia, 1891.) A description of *Arctotherium simum* Cope, from the Pleistocene.
- Cope, E. D. Catalogue of Fossil Reptilia and Batrachia of the British Museum, Pt. I; by Dr. Lydekker. Review. (American Naturalist, Vol. XXIII, p. 43. Philadelphia, 1889.) Brief notes.
- Cope, E. D. Catalogue of Fossil Reptilia and Batrachia in the British Museum, Parts II, III, and IV. Review. (American Naturalist, Vol. XXV, pp. 644-646. Philadelphia, 1891.) A critical review of the work.
- Cope, E. D. Cetacea. (American Naturalist, Vol. XXIV, pp. 599-616, 4 plates. Philadelphia, 1890.) A revision of the group with a list of extinct species.
- Cope, E. D. Character of Some Paleozoic Fishes. (Proc. U. S. Nat. Mus., Vol. XIV, pp. 447-463, 6 plates. Washington, 1892.) Contains: (1) New Elasmobranch from the Permian; (2) New Ichthyodolites; (3) Cranial Structure of Macropetalichthys; (4) Pectoral Limb of the Genus Holonema Newberry; (5) Paired fins of Megalidithys mitidus Cope; (6) New Species of Platycomidae.

Cope, E. D.—Continued.

The following described as new:

Styptobasis.	Ctenacanthus amblyxiphis.
Styptobasis knightiana.	Platysomus palmaris.
Hybodus regularis.	Platysomus lacovianus.

Reviewed in Am. Naturalist, ix, 263, 264, 1892.

Cope, E. D. Contribution to a Knowledge of Fauna of Blanco Beds of Texas. (Proc. Acad. Nat. Sci. Phila., Vol. XLIV, pp. 226-230. Philadelphia, 1892.)

The following species described as new:

Mastodon successor.	Testudo turgida.
Testudo pertenuis.	

Cope, E. D. Contribution to Vertebrate Paleontology of Texas. (Proc. Am. Philos. Soc., Vol. xxx, pp. 123-131. Philadelphia, 1892.) The following species described:

Creceoides osbornii Shufeldt.	Equus simplicidens sp. nov.
Episcoposaurus haplocerus sp. nov.	Microdus dumbelli sp. nov.
	Testudo turgida sp. nov.

Cope, E. D. Contribution to Vertebrate Paleontology of Brazil. (Proc. Am. Philos. Soc., Vol. xxiii, pp. 1-21, 1 plate. Philadelphia, 1889.)

Cope, E. D. Cranial Characters of Equus Excelus. (Proc. Am. As. Adv. Sci., Vol. xl, p. 285. Salem, 1892.) Abstract. A discussion of characters of the skull and the relations of the species as indicated by the characters.

Cope, E. D. Credner on Palæohatteria. (American Naturalist, Vol. xxiii, pp. 148, 149, bis. Philadelphia, 1889.) The conclusion is reached that the Palæohatteria is one of the Proganosauria and probably a member of the Stereosternidæ.

Cope, E. D. Crook and Saurodontidæ from Kansas. (American Naturalist, Vol. xxvi, pp. 941, 942. Philadelphia, 1892.) A critical review of "Ueber einige fossile Knochenfische aus der mittleren Kreide von Kansas; von Alja Robinson Crook: Palæontographica, xxxix, 107, 1892.

Cope, E. D. Degenerate Types of Scapular and Pelvic Arches in the Lacertilia. (Jour. Morph., Vol. vii, pp. 223, 224. Boston, 1892.)

Cope, E. D. Dicotylinae of John Day Miocene of North America. (Proc. Am. Philos. Soc., vol., xxv, pp. 62-79. Philadelphia, 1888.) The following are the new forms:

Bothrolabis gen. nov.
Bothrolabis rostratus, sp. nov.

Reviewed in Neues Jahrbuch, 322-323. 1890.

Cope, E. D. Dinosauria of the Laramie. (American Naturalist, Vol. xxiii, pp. 904-906. Philadelphia, 1889.) Notes on several species with description of *Pteropelyx grallipes* (gen. et sp. nov.).

Cope, E. D. Edentata of North America. (American Naturalist, Vol. xxiii, pp. 657-664, 2 plates. Philadelphia, 1889.) A general review of the group.

Cope, E. D. Extinct Sirenia. (American Naturalist, Vol. xxiv, pp. 697-702, 2 plates. Philadelphia, 1890.) A review of the group with the expression of the lines of descent.

Cope, E. D. Fishes from South Dakota. (American Naturalist, Vol. xxv, pp. 654-658. Philadelphia, 1891.) The following are described as new:

Gephyrura concentrica.	Oligoplarchus squamipinnis.
Sardinus blackburni.	Mioplosus multidentatus.
Proballestomus longulus.	

Reviewed in American Geologist, ix, 57, 1892.

Cope, E. D. Fourth Note on Dinosauria of the Laramie. (Am. Naturalist, Vol. xxvi, pp. 756-758, 1 plate. Philadelphia, 1892.) The following described:

Maraospondylus gigas, gen. et sp. nov.	Agathaumas Cope.
Claorhynchus trihedrus, gen. et sp. nov.	Pteropelyx Cope.

Cope, E. D. Glyptodon from Texas. (Am. Naturalist, Vol. xxii, pp. 345, 346. Philadelphia, 1888.) *Glyptodon petaliferus* announced from Texas.

- Cope, E. D. Goniopholis in the Jurassic of Colorado. (Am. Naturalist, Vol. XXII, pp. 1106, 1107. Philadelphia, 1888.) *Goniopholis lucasii* described as new.
- Cope, E. D. Handbuch der Paleontologie von Zittel. (Am. Naturalist, Vol. XXII, pp. 1018, 1019. Philadelphia, 1888.) A brief review of the work.
- Cope, E. D. Homologies of Cranial Arches of the Reptilia. (Am. Naturalist, Vol. XXVI, pp. 407, 408, 1 plate. Philadelphia, 1892.) An analysis of the cranial characters of the genera of Reptilia discovered in the Permian of North America by the author.
- Cope, E. D. Homologies of Cranial Arches in the Reptilia. (Trans. Am. Philos. Soc., Vol. XVII, pp. 942-944. Philadelphia, 1892.)
- Cope, E. D. Horned Dinosauria of the Laramie. (American Naturalist, Vol. XXIII, pp. 715-717, 1 plate. Philadelphia, 1889.) A short list of species from this formation, with descriptions of the following as new:
- Monoclonius recurvicornis*.
Monoclonius sphenoceras.
- Reviewed in Neues Jahrbuch, 435-486, 1890.
- Cope, E. D. Horned Dinosaurian Reptile. (American Naturalist, Vol. XXII, pp. 1108, 1109. Philadelphia, 1889.) A brief account of a Dinosaur found by O. C. Marsh in Montana.
- Cope, E. D. Hyena and other Carnivora from Texas. (American Naturalist, Vol. XXVI, pp. 1028, 1029. Philadelphia, 1892.) Notes on the discovery of carnivora in the Pliocene of Texas, with a description, without figures, of *Borophagus diversidens*.
- Cope, E. D. Hyena and other Carnivora from Texas. (Proc. Acad. Nat. Sci., Phila., Vol. XLIV, 326, 327. Philadelphia, 1892.) A note describing the following genera and species as new:
- Borophagus diversidens*.
Canimartes cummingsii.
- Cope, E. D. Intermediate Pliocene Fauna. (American Naturalist, Vol. XXIII, pp. 253, 254. Philadelphia, 1889.) A list of interesting species, with notes.
- Cope, E. D. In the Texas Panhandle. (American Geologist, Vol. X, pp. 131, 132. Minneapolis, 1892.) Brief notes on collections made.
- [Cope, E. D.] Lectures on Geology and Paleontology. (American Naturalist, Vol. XXVI, pp. 940, 941. Philadelphia, 1892.) A brief synopsis of a syllabus of a course of lectures delivered before the University of Pennsylvania.
- Cope, E. D. Litopterna. (American Naturalist, Vol. XXV, pp. 685-693. Philadelphia, 1891.)
- Cope, E. D. Lydekker's Catalogue of Fossil Mammalia in the British Museum, Part v. (American Naturalist, Vol. XXII, pp. 164-165. Philadelphia, 1889.) A brief synopsis of the work.
- Cope, E. D. Marsh on Cretaceous Mammalia. (American Naturalist, Vol. XXIII, pp. 490, 491. Philadelphia, 1889.) A brief review on an article by O. C. Marsh in Am. Jour. Sci. (3), pp. 81 and 177, 1889.
- Cope, E. D. Mechanical Causes of Development of Hard Parts of Mammalia. (Journal Morphology, Vol. III, pp. 137-290. Boston, 1889.) Reviewed in Neues Jahrbuch, 389-405 1892.
- Cope, E. D. Mechanical Causes of Origin of the Dentition of the Rodentia. (American Naturalist, Vol. XXII, pp. 3-13. Philadelphia, 1888.) Consideration of the peculiarities of the rodent dental system as a result of the mechanical consequences of an increase in the length of the incisor teeth, with notes on the *Marsupialia multituberculata*.
- Cope, E. D. Mechanical Origin of Dentition of Amblypoda. (Proc. Am. Philos. Soc., Vol. XXV, pp. 80-89. Philadelphia, 1888.) The action of mechanical forces and their effects on the evolution of the dentition in this group discussed and illustrated.

- Cope, E. D.** New and Little Known Paleozoic Vertebrates. (Proc. American Philosophical Soc., Vol. XXI, pp. 221-228. Philadelphia, 1892.) The following species described:
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| <i>Cœcostius macromus.</i> | <i>Holotychnus filorus.</i> |
| <i>Ganorhynchus oblongus.</i> | <i>Megalichthys macroporus.</i> |
| <i>Holonema horrida.</i> | |
- Cope, E. D.** New Dog from the Loup Fork Miocene. (American Naturalist, Vol. XXIV, pp. 1067, 1068. Philadelphia, 1890.) *Elurodon compressus* described as new.
- Cope, E. D.** New Fishes from South Dakota. (American Naturalist, Vol. XXV, pp. 654-658. Philadelphia, 1891.) The following described, without figures, as new:
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| <i>Gephyrura.</i> | <i>Oligoplarchus.</i> |
| <i>Gephyrura concentrica.</i> | <i>Oligoplarchus squamipinnis.</i> |
| <i>Proballostomus.</i> | <i>Mioplosus multidentatus.</i> |
| <i>Proballostomus longulus.</i> | |
- Cope, E. D.** New Form of Marsupialia from the Laramie Formation. (Proc. Am. As. Adv. Sci., Vol. XLI, p. 177. Salem, 1892.) Notice of the new genus *Thlædon*.
- Cope, E. D.** New Horizons of Fossil Fishes. (Am. As. Adv. Sci., Vol. XL, p. 285. Salem, 1892.) Announcement and discussion of the discovery of fish remains at Rose Hill, South Dakota.
- Cope, E. D.** New Genus of Mammalia from the Laramie Formation. (American Naturalist, Vol. XXVI, pp. 758-762. Philadelphia, 1892.) *Thlædon padanicus* (gen. et sp. nov.) described without figures.
- Cope, E. D.** New Genus of Triassic Dinosauria. (American Naturalist, Vol. XXIII, p. 626. Philadelphia, 1889.) The genus *Cœlophysis* described as new from the Triassic of New Mexico.
- Cope, E. D.** Non-Actinopterygian Teleostomi. (American Naturalist, Vol. XXV, pp. 479-481. Philadelphia, 1891.) A new arrangement of the group.
- Cope, E. D.** New Perissodactyls from the White River Neocene of Nebraska. (American Naturalist, Vol. XXV, pp. 47-49. Philadelphia, 1891.) *Nenodus peloceras* and *Cænopus simplicidens* described, without figures, as new.
- Cope, E. D.** New Species of Mustelidæ from the Loup Fork Miocene of Nebraska. (American Naturalist, Vol. XXIV, pp. 950-952. Philadelphia, 1890.) The following species described, without figures, as new:
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| <i>Stenogale robusta.</i> |
| <i>Brachypsalis pachycephalus.</i> |
- Cope, E. D.** Osborn on Mesozoic Mammalia: Jour. Acad. Nat. Sci. Philadelphia, (2), Vol. IX, pp. 186-265, July, 1888. (American Naturalist, Vol. XXII, 723, 724. Philadelphia, 1888.) A careful review of the work.
- Cope, E. D.** Permanent and Temporary Dentitions of Certain Three-toed Horses. (American Naturalist, Vol. XXVI, pp. 942-944. Philadelphia, 1892.) A study, with figures, of the dentition of these forms.
- Cope, E. D.** Permanent and Temporary Dentition of Certain Three-toed Horses. (Proc. Acad. Nat. Sci. Phila., Vol. XLIV, pp. 325-326. Philadelphia, 1892.) Brief notes on the subject.
- Cope, E. D.** Phylogeny of the Horse. (American Naturalist, Vol. XXII, pp. 448-449. Philadelphia, 1888.) A review of "Études sur l'Histoire Paléontologique des Ongules; II, Le Développement des Equidæ; par Marie Parlon, Moscow, 1888.
- Cope, E. D.** Pineal Eye in Extinct Vertebrates. (American Naturalist, Vol. XXII, pp. 914-917, 1 plate. Philadelphia, 1888.) Probable origin of the organ and its significance in vertebrates.
- Cope, E. D.** Pohlig on Elephas Antiquus. (American Naturalist, Vol. XXIII, pp. 712-713. Philadelphia, 1889.) A brief review of recent work by Pohlig.

- Cope, E. D.** Proboscidea. (American Naturalist, Vol. xxiii, pp. 191-211, 8 plates. Philadelphia, 1889.) A general account of the group and its evolution. Reviewed in Neues Jahrbuch, 150-154, 1891.
- Cope, E. D.** Professor Marsh on Extinct Horses and other Mammals. (American Naturalist, Vol. xxvi, pp. 410-412. Philadelphia, 1892.) A review of articles in Am. Jour. Sci., April and May of 1892.
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- Cope, E. D.** Skull of Dinosaurian, *Laelaps Incrassatus*, Cope. (Proc. Am. Philos. Soc., Vol. xxx, 240-244. Philadelphia, 1892.)
- Cope, E. D.** Skull of *Equus Excelsus*, Leidy, from the *Equus* beds of Texas. (American Naturalist, Vol. xxv, pp. 912, 913. Philadelphia, 1891.) Characters described.
- Cope, E. D.** Species of *Plioplarchus* from Oregon. (American Naturalist, Vol. xxiii, pp. 625, 626. Philadelphia, 1889.) *Plioplarchus septemspinus* described as new from Miocene of Oregon.
- Cope, E. D.** Syllabus of Lectures on Geology and Paleontology; III, Paleontology of Vertebrata. (Pamphlet, 90 pp. Philadelphia, 1891.)
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- Cope, E. D.** Vertebrata from Tertiary and Cretaceous Rocks of the Northwest Territory. (Cont. Canadian Pal., Vol. iii, pp. 1-25. Ottawa, 1891.) The species from the Oligocene or lower Miocene beds of the Cypress Hills. The following species are described:
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| <i>Amia macrospondyla.</i> | <i>Rhinestes rhæas.</i> |
| <i>Amia whiteavesiana.</i> | <i>Trionyx leucopotamicus.</i> |
| <i>Amia macconnelli.</i> | |
- Reviewed in Neues Jahrbuch, 394, 395, 1892.
- Cope, E. D.** Vertebrate Fauna of *Equus* Beds. (American Naturalist, Vol. xxiii, pp. 160-165. Philadelphia, 1889.) List of species and localities, with descriptions, without figures, of *Alces brevitrabalis* sp. nov., *Alces semipalmatus* sp. nov., and *Casicus ensifer* sp. nov.
- Cope, E. D.** Vertebrate Fauna of Puerco Epoch. (American Naturalist, Vol. xxii, pp. 161-163. Philadelphia, 1888.) Analysis of the characters of the fauna.
- Cope, E. D.** Vertebrata from Tertiary and Cretaceous Rocks of Northwest Territory; I, The Species from Oligocene or Lower Miocene Beds of the Cypress Hills. (Geol. Sur. Canada, Vol. iii, pp. 1-25, 14 plates. Ottawa, 1891.) Five species of fish, one reptile, and a number of mammals are described, the following as new:
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| <i>Amia whiteavesana.</i> | <i>Amiurus cancellatus.</i> |
| <i>Amia macrospondyla.</i> | <i>Amiurus macconnellii.</i> |
| <i>Rhinestes rhæas,</i> | <i>Trionyx leucopotamicus,</i> |

Cope, E. D.—Continued.

Reviewed in *Science*, xiv, 53, 1891; also *Ottawa Naturalist*, v, 74-77, 1891; and *Am. Geologist*, viii, 326, 1891.

Cope, E. D. *Vertebrata of Swift Current River*, II. (*American Naturalist*, Vol. xxiii, pp. 151-155 *bis*. Philadelphia, 1889.) Description of some material collected by the Canadian Geological Survey. The following species are described:

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| <i>Haplacodon</i> <i>angustigensis</i> nov. gen. | <i>Leptomeryx</i> <i>esulcatus</i> sp. nov. |
| <i>Anchiterium</i> <i>westoni</i> sp. nov. | <i>Leptomeryx</i> <i>mammifer</i> . |
| <i>Hypertragulus</i> <i>transversus</i> sp. nov. | <i>Leptomeryx</i> <i>semicinctus</i> sp. nov. |

Cope, E. D. *Vertebrata of Swift Current River*, III. (*American Naturalist*, Vol. xxiii, pp. 628, 629. Philadelphia, 1889.) The following species described as new from the Neocene of Canada:

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| <i>Menodus</i> <i>selwynianus</i> . | <i>Elotherium</i> <i>coarctatum</i> . |
| <i>Menodus</i> <i>syceas</i> . | |

C[ope,] E. D. *Woodward's Fossil Fishes*. (*American Naturalist*, Vol. xxv, pp. 646, 647. Philadelphia, 1891.) A critical synopsis.**Corals.**

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- Acervularia Profunda*, Hall, and *Acervularia Davidsoni*, Edwards and Haime, Differences. S. Calvin. (*Proc. Iowa Acad. Sci.*, Vol. I, Pt. II, 30-32. 1892.)
- Age of Cincinnati Anticlinal. A. F. Foerste. (*American Geologist*, vii, 97-109. 1891.) Incidental references to fossils.
- Archæocyathus*, Billings, and other Genera allied to or associated with it from the Cambrian Strata of North America, Spain, Sardinia, and Scotland. G. J. Hinde. (*Quart. Jour. Geol. Soc.*, London, xlv, 125-148. 1889.)
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- Cambrian Fossils in Neocene Gravels of Islands of Martha's Vineyard. J. B. Woodworth. (*American Geologist*, ix, 243-247. 1892.)
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- Chaetetes, Typical, in Devonian Strata at the Falls of Ohio and Likewise in Analogous Beds of the Eifel in Germany. C. Rominger. (*American Geologist*, x, 56-63. 1892.)
- Characters of *Diphyphyllum Simcense*, (Bill.) Rom. W. H. Sherzer. (*Am. Geologist*, iv, 93-95. 1889.)
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- Cincinnati Group, Manual of the Paleontology. J. F. James. (*Jour. Cincinnati Soc. Nat. Hist.*, Pt. I, xiv, 45-72; Pt. II, 149-163; Pt. III, xv, 88-100; Pt. IV, 144-159. 1891-1892.)
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- Correlation Papers; Cambrian. C. D. Walcott. (*Bul. U. S. Geol. Sur.*, No. 81, 447 pp. 1891.)

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Remonoia ferrissii, sp. nov.

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- Reptiles from Laramie Formation. O. C. Marsh. (Am. Jour. Sci., (3), 449-453. 1892.)
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- Vertebrates from Tertiary and Cretaceous Rocks of the Northwest Territory; I, Species from the Oligocene or Lower Miocene beds of the Cypress Hills. E. D. Cope. (Geol. and Nat. Hist. Sur. Canada, III, 1-25. 1891.)
- Virginia, Fossils in the Lafayette Formation. N. H. Darton. (American Geologist, IX, 181-183. 1892.)

- Cretaceous and Tertiary Strata near Wilmington, N. C.** T. W. Stanton. (*American Geologist*, vii, 333, 334. 1891.) Occurrence of characteristic fossils noted.
- Cretaceous, Later, Deposits in Iowa.** C. A. White. (*American Geologist*, i, 221-227. 1888.) Various species of fossils referred to.
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- Cretaceous Mammalia, Part II.** O. C. Marsh. (*Am. Jour. Sci.*, xxviii, 177-180. 1889.)
- Cretaceous Mammalia, Review of Discovery.** H. F. Osborn. (*American Naturalist*, xxv, 44, 45. 1891.)
- Crinoid Heterocrinus Subcrassus.** D. T. D. Dyche. (*Science*, xx, p. 66. 1892.)
- Crinoid, Species of Burlington.** R. R. Rowley. (*American Geologist*, v, 146, 147. 1890.)
- Crinoidea, Attachment of Platyceras.** C. R. Keyes. (*American Naturalist*, xxii, 924, 925. 1888.)
- Crinoidea of Lower Limestone at Rockport, New York, with Descriptions of New Species.** E. N. S. Ringueberg. (*Ann. New York Acad. Sci.*, v, 301. 1890., Reviewed in *American Geologist*, vi, 250, 1890.)
- Crinoidea, Ventral Structure of Taxocrinus and Haplocrinus, and Consequent Modifications in Classification.** C. Wachsmuth and F. Springer. (*Proc. Acad. Nat. Sci. Phila.*, 337-363. 1888.)
- Crinoids and Blastoids, Natural Casts from Burlington Limestone.** R. R. Rowley. (*American Geologist*, vi, 66, 67. 1890.)
- Crinoids and Blastoids from Kinderhook Group of Lower Carboniferous Rocks at Le Grand, Iowa.** C. Wachsmuth and F. Springer. (*Geol. Sur. Illinois*, viii, 155-205. 1890.) A number of species described and figured as new.
- Crinoids, British Fossil.** F. A. Bather. (*Ann. and Mag. Nat. Hist.*, (6), v, 325-334, and 373-388. 1890.)
- Crinoids, Camerate from Niagara Group, Two New Genera and Eight Species.** C. Wachsmuth and F. Springer. (*American Geologist*, x, 133-144. 1892.)
- Crinoids, from Niagara Group, Genus.** S. A. Miller. (*American Geologist*, i, 263, 264. 1888.)
- Crinoids from Niagara Limestone at St. Paul, Decatur County, Indiana.** C. S. Beachler. (*American Geologist*, iv, 102, 103. 1889.)
- Crinoids from Missouri, Lower Carboniferous.** S. A. Miller. (*Bul. Geol. Sur. Missouri*, No. 4, 40 pp., 5 plates. 1891.) Descriptions of new species.
- Crinoids in Families, Structure, Classification and Arrangement of American Paleozoic.** S. A. Miller. (*Indiana Dep. Geol. and Nat. Hist.*, Sixteenth Ann. Rep. State Geologist, for 1889, 302-326. 1889.)
- Crinoids, Perisomic Plates.** C. R. Keyes. (*American Geologist*, vii, 255-258. 1891.)
- Crinoids, Perisomic Plates.** C. R. Keyes. (*Am. Jour. Sci.*, (3), xli, 247, 248. 1891.)
- Crinoids, Structure, Classification, and Arrangement.** S. A. Miller. (*American Geologist*, vi, 275-286 and 240-357. 1890.)
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- Critical Revision of Species Monticuliporoid Corals of the Cincinnati Group.** U. P. and J. F. James. (*Jour. Cin. Soc. Nat. Hist.*, x-xi, 118-141, 158-184, 15-48. 1887-1888.)
- Crook, A. R.** Ueber einige fossile Knochenfische aus der Mittleren Kreide von Kansas. (*Palaeontographica*, Vol. xxxix, p. 107. Cassel, 1892.)
- Cross, Whitman.** Denver Tertiary Formation. (*Am. Jour. Sci.*, (3), Vol. xxxvii, pp. 261-282. New Haven, 1889.) Incidental references to fossils forms.
- Cross, Whitman.** Post-Laramie Deposits of Colorado. (*Am. Jour. Sci.*, (3), Vol. xlv, pp. 19-22. New Haven, 1892.) Incidental references to the fossils found in the different formations at various localities.

Crustaceans (non-trilobitic). *See also* Trilobites.

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in the Pleistocene. W. Dawson. (Canadian Rec. Sci., III, 287-292. 1889.)
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can Geologist, VIII, 197-204. 1891.)
- Bibliography of Paleozoic Crustacea from 1698-1889. A. W. Vogdes. (Bul. U.
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dian Paleontology, I, 151-196. 1889.)
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VII, Sec. iv, 135-162. 1889.)
- Canada, Micro-Paleontology of Cambro-Silurian Rocks. E. O. Ulrich. (Geol.
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phorus. T. R. Jones. (Quart. Jour. Geol. Soc., London, XLVI, 534-556. 1890.)
- Devonian Crustacea Described in Paleontology of New York, Vol. VII, List of
Type Specimens in Possession of New York State Museum of Natural History.
J. Hall. (Eighth Ann. Report State Geologist, New York, for 1889, 24-27.
1889.)
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Nat. Sci., Phila., XLII, 132-147. 1890.) Incidental references to fossils.
- New and Little Known American Paleozoic Ostracoda. E. O. Ulrich. (Jour.
Cin. Soc. Nat. Hist., XIII, 104-137, 173-211. 1890-1891.)
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VI, 337-342. 1889.)
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Pal., VII., 236 pp. 1888.)
- Paleozoic Bivalve Entomostraca, North American Species. T. R. Jones. (Ann.
and Mag. Nat. Hist., (6,) III, 154. 1889.)
- Phyllocarid Crustacea from Middle Cambrian of Mount Stephens, B. C. J. F.
Whiteaves. (Canadian Rec. Sci., v, No. 4, 205-208. 1892.)
- Silurian Ostracoda, No. 1. E. O. Ulrich. (American Geologist, x, 263-270.
1892.) New forms described.
- Species of Fossils from Cambro-Silurian Rocks of Manitoba. J. F. Whiteaves.
(Trans. Roy. Soc. Canada, VII, Sec. IV, 75-83. 1889.)
- Tracks of Organic Origin in Rocks of Animikie Group. A. R. C. Selwyn. (Am.
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- Turrilepas in Utica Formation of Ottawa, Canada. H. Woodward. (Geological
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- Crustacea** Described in Paleontology of New York, Vol. VII, in the Possession of the New York State Museum of Nat. Hist., List of Type Specimens. J. Hall. (Eighth Ann. Rep. State Geologist, for 1889, 24-27. 1889.)
- Crustacea** from Lower Silurian of Tennessee, with Remarks on Others not well Known. J. M. Safford and A. W. Vodges. (Proc. Acad. Nat. Sci., Phila., 166-168. 1889.) Description of new species.
- Crustacea** from 1698-1889, Bibliography of Palæozoic. A. W. Vodges. (Bul. U. S. Geol. Sur., No. 63, 177 pp. 1890.)
- Crustacea**, Non-Trilobitic Genera and Species, Catalogue of North American Palæozoic. A. W. Vodges. (Ann. N. Y. Acad. Sci., v, No. 1. 1889.)
- Crustaceous** Tracks from the Potsdam Sandstone of Port Henry, New York. J. Hall. (New York State Mus. Nat. Hist., 42d Ann. Rep., 25-27. 1889.)
- Cryptozoon** Minnesotaensis in Shakopee Limestone at Northfield, Minnesota. L. W. Chaney, jr. (Bul. Minnesota Acad. Nat. Sci., III, 280-284. 1891.)
- Cuboides** Zone and its Fauna, a discussion of Methods of Correlation. H. S. Williams. (Bul. Geol. Soc. America, I, 481-500. 1890.)
- [**Cummins, W. F.**] Appendix to Geology of Coleman County. (Texas Geol. Sur., Second Ann. Rep., p. 552. Austin, 1890.) Describes as new *Hadrophyllum aplatus*.
- Cummins, W. F.**, and Otto Lerch. Geological Survey of the Concho country, State of Texas. (American Geologist, Vol. v, pp. 321-335. Minneapolis, 1890.) Incidental references to fossils are given.
- Cumnoria** (Camptosaurus), Pelvis. S. W. Williston. (American Naturalist, xxiv, 472, 473. 1890.)
- Cusps**, Mammalian, Nomenclature. H. F. Osborn. (American Naturalist, xxii, 926-928. 1888.)
- Cuyhoga** Shale and Problem of Ohio Waverly. C. L. Herrick. (Bul. Geol. Soc. America, II, 31-47. 1891.) Incidental references to fossils.
- Cyclocrinus**, Ueber die Gattungen Pasceolus. F. Roemer. (Neues Jahrbuch f. Min., Geol. u. Pal., 74, 75. 1888.)
- Cypræa**, Fossil. J. H. Campbell. (The Nautilus, vi, 50, 51. 1892.)
- Cystidians** of Jefferson County, Indiana. G. C. Hubbard. (Proc. Indiana Acad. Sci., I, 67. 1891.)
- Cytherea** Convexa, Say. W. H. Dall. (The Nautilus, vi, 52, 53. 1892.)
- Dakota (South).**
 Cambrian Fossils, Upper, Description of New Forms. C. D. Walcott. (Proc. U. S. Nat. Mus., XIII, 266-279. 1891.)
 Cretaceous Echinoidea of North America, Revision. W. B. Clark. (Johns Hopkins Univ. Circulars, No. x, 87, 75-77. 1891.)
 Palæozoic Fossils of Wisconsin, Minnesota, Iowa, Dakota, and Nebraska, Check-List. B. Bierbauer. (Bul. Minnesota Acad. Nat. Sci., III, 206-247. 1889.)
 Tertiary Mammals. O. C. Marsh. (Am. Jour. Sci., (3), XXXIX, 523-525. 1890.)
- Dall, W. H.** Age of the Peace Creek Bone Beds of Florida. (Proc. Biol. Soc. Wash., Vol. vi, Mch. Washington, 1891.) Reviewed in Am. Naturalist, xxv, 400, 401, 1891.
- Dall, W. H.** Contributions to Tertiary Fauna of Florida. (Trans. Wagner Free Inst. Sci., Phila., Vol. III, pp. 1-178, 11 plates. Philadelphia, 1890.) This is on the plan of an annotated catalogue of the Gasteropods of the region, with brief notes on the structure of the shells. The following species are figured or described, most of them as new:
- | | |
|---|--|
| <i>Lioplax floridana</i> . | <i>Bulimulus</i> (? <i>Anctus</i>) <i>heilprinianus</i> . |
| <i>Helicina ballista</i> . | <i>Bulimulus</i> (? <i>Anctus</i>) <i>americanus</i> |
| <i>Planorbis wilcoxii</i> . | Dall. |
| <i>Bulimulus</i> (? <i>Anctus</i>) <i>floridanus</i> | <i>Bulimulus</i> (? <i>Anctus</i>) <i>stearnsii</i> Dall. |
| Conrad. | <i>Helix latebrosa</i> , |

- Helix instrumosa*.
Helix crusta.
Helix crusta var. *cunctator* Dall.
Helix diespiter.
Helix direpta.
Helix haruspica.
Helix adamnis.
Strophia (*Eostrophia*) *anodonta*.
Strophia (*Anodonta* var.) *floridana* Dall.
Cylindrella floridana.
Ringicula floridana Dall.
Ringicula (*floridana* var. ?) *Guppyi* Dall.
Utriculus vaginatus.
Scaphander (*Bucconia*) *grandis* Aldrich.
Dollabella aldrichi.
Planorbis conanti.
Planorbis dissoni.
Physa meigsii.
Conus planiceps Heilprin.
Conus cruzianus.
Drillia newmani.
Drillia acurugata.
Drillia acucincta.
Drillia ebenina.
Drillia edilia.
Drillia sedilia.
Drillia podagrina.
Drillia piscator.
Drillia bigemma.
Drillia (*Lissotropis* var.) *perpolita* Dall.
Cythara terminula.
Daphnella cingulata.
Daphnella modesta.
Glyphostoma watsoni.
Pleurotomella chariessa, var. *pistillata*, Dall.
Cancellaria conradiana.
Cancellaria venusta.
Trigonostoma tenera Philippi.
Trigonostoma subthomasi.
Olivella lata.
Ancillaria shepardii.
Marginella ballista.
Marginella precursor.
Marginella pardalis Dall.
Marginella floridana.
Marginella wilcoxiana.
Marginella aurora.
Marginella denticulata Conrad.
Marginella bella Conrad.
Marginella faunula.
Marginella elegantula.
Marginella newmani.
Marginella styria Dall.
Marginella gravida.
Marginella (*Volutella*) *amiantufa*.
Liopeplum spillmani Dall.
Liopeplum subjugosum Dall.
Lyria costata Sowerby.
Volutilithes precursor Dall.
Scaphella (*Caricella*) *leana* Dall.
Scaphella (*Caricella*) *subangulata* Conrad.
Scaphella trenholmi, Tuomey and Holmes.
Scaphella floridana Heilprin.
Eucymba ocalana Dall.
Perplicaria perplexa.
Mitra holmesii.
Mitra wilcoxii.
Mitra (*mississippiensis* var. ?) *sili-cata* Dall.
Conomitra staminea Conrad.
Mitromorpha cineta.
Mitromorpha pygmaea Dall.
Turbinella chipolana.
Turbinella regina Heilprin.
Turbinella scolymoides.
Mazzalina costata.
Latirus floridanus Heilprin.
Latirus callimorphus.
Latirus rugatus.
Latirus tessellatus.
Latirus hypsipetius.
Fulgur stellatum.
Fulgur echinatum.
Melogenia sculptarata.
Melogenia sculpturata var. *turricula* Dall.
Melogenia subcoronata var. *aspinosa* Dall.
Solenosteira mungeana.
Solenosteira inornata.
Fusus (*Papillina*) *dumosus* Conrad.
Fusus ballista.
Fusus ? *quinquespinus*.
Fusus (*Chrysodomus* ?) *nexilis*.
Tritonidea pauper.
Nassa bidentata Emmons.
Nassa lapenotierei.
Nassa caloosaensis.
Anachis camax.
Anachis ithitoma.
Murex (*Chicoreus* ?) *micromeris*.
Murex (*Pteronotus*) *texilis* Gabb.
Eupleura miocenica.

- Muricea spinulosa* Heilprin.
Typhis linguiferus.
Typhis floridanus Dall.
Rapana tampaensis.
Coralliophila magna.
Coralliophila lepidota.
Opalia de-bouryi.
Eulima conoidea Kurtz and Stimpson.
Niso willcoxiana.
Phalium globosum.
Phalium aldrichi.
Ovula (*Transovula*) *multicarinata*.
Cypræa pinguis Conrad.
Cypræa heilprinii.
Cypræa wilcoxi.
Cypræa (*Siphocypæra*) *problematica* Heilprin.
Orthaulax pugnax Heilprin.
Orthaulax gabbi.
Rimella smithii.
Strombus albirupianus.
Strombus aldrichi.
Strombus chipolana.

The following species described or figured from Part II, 1892:

- Bulla striata* Brug., var. *attenuata* Dall.
Utriculus vaginatus Dall.
Conus planiceps Heilprin.
Conus adversarius Conrad.
Drillia myrmecoon.
Drillia hoplophorus.
Drillia aphanitoma.
Drillia schismatica.
Drillia sigela.
Glyphostoma johnsoni.
Daphnella elata Dall.
Cancellaria conradiana Dall, var. *rotunda*.
Cancellaria (*Trigonostoma*) *sericea*.
Marginella eulima.
Marginella onchidella.
Marginella (*Volutella*) *dacria*.
Scaphella (*Caricella*) *podagrina* Dall.
Perplicaria perplexa Dall.
Turbinella scolymoides Dall.
Fasciolaria (*sparrowi* var. ?) *acuta* Emmons.
Fasciolaria elegans Emmons.
Glyptostyla panamensis.
Mazzalina oweni Dall.
Melogenia subcoronata Heilprin.
Solenosteira inornata Dall.
Fusus equalis Emmons.
Fusus caloosaensis Heilprin.
Fusus quinquespinus Dall.
Pisiana (*Celatoconus*) *nux*.
Ilyanassa (*Paranassa*) *arata* Say.
Ilyanassa (*Paranassa*) *isogramma*.
Nassa johnsoni.
Collumbella (*Anachis*) *styliola*.
Trophon (*Aspella*) *engonatus*.
Rapana tampaensis Dall var. ?
Scala (*Opalia*) *debouryi* Dall.
Scala stearnsii Dall.
Niso lineata Conrad.
Odontostomia (*Syrnola*) *caloosaensis*.
Odontostomia (*Syrnola*) *attenuata*.
Turbonilla (*Ondina*) *fragilis*.
Turbonilla chipolana.
Turbonilla protracta.
Cassis (*Phalium*) *globosum* Dall.
Cassis (*Phalium*) *aldrichi* Dall.
Strombus chipolanus Dall.
Triforis mitella.
Cerithopsis scarphi.
Bittium chipolanum.
Bittium chipolanum, var. *burnsii* Dall.
Bittium permutabile.
Bittium cossmannii.
Bittium annetta.
Bittium podagrinum.
Bittium (*Styliferina* ?) *priscum* Dall.
Bittium (*Styliferina*) *bioplex*.
Bittium (*Styliferina*) *cerithioides* Dall.
Cerithium caloosaense Dall.
Cerithium ocalanum.
Cerithium burnsii.
Cerithium platynema.
Cerithium callisoma.
Cerithium glaphyrea.
Cerithium glaphyrea, var. *litharium* Dall.
Cerithium coccodes.
Cerithium chipolanum.
Cerithium vinetum Whitfield.
Potamides hillsboroensis Heilprin.
Potamides (*Lampanella*) *transecta* Dall.
Potamides (*Pyrazisinus*) *campanulatus* Heilprin.
Potamides (*Pyrazisinus*) *cornutus* Heilprin.

Potamides (Pyrazisinus) *scalatus*
 Heilprin.
Potamides (Pyrazisinus) *acutus*.
Clava chipolana.
Clava caloosaensis.
Alaba chipolana.
Modulus turbanitus Heilprin.
Modulus wilcoxii.
Modulus compactus.
Cæcum floridanum, var. *compactum* Dall.
Cæcum coronellum.
Cæcum carolinianum.
Cæcum tortile.
Cæcum (tortile var. ?) *ibex*.
Meioceras cingulatum.
Serpulorbis (granifera var. ?) *ballistæ* Dall.
Turritella tampæ Heilprin.
Turritella tampæ var. *pagodæformis* Heilprin.
Turritella gatunensis Conrad.
Turritella terebriformis.
Turritella chipolana.
Turritella subgrundifera.
Turritella subanulata Heilprin.
Turritella perattenuata Heilprin.
Turritella apicalis Heilprin.
Tuba acutissima.
Fossarus lyra Conrad.
Fossarus (Isapis) *anomala* C. B. Adams.
Solarium amphitermum.
Dischelix retifera.
Hydrobia umbilicata Pilsbry.
Hydrobia amnicoloides Pilsbry.
Hydrobia mobiliana Dall.
Amnicola omphalotropis Pilsbry.
Rissoa lipens.
Rissoa athymorhyssa.
Rissoa (Onoba) *geræa*.
Rissoa (Onoba) *callistrophia*.
Rissoa (Onoba) *microcharia*.
Rissoina johnsoni.
Rissoina chipolana.
Adeorbis strigillatus.
Adeorbis leai.
Amalthea wilcoxii.
Xenophora conchyliophora Born.
Natica alticallosa.
Natica (Cryptonatica) *floridana*.
Polynices (Lunatia) *internus* Say.
Ampullina fischeri.
Ampullina solidula.
Polynices (Amauropsis) *burnsii*.
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Sigaretus chipolanus.
Sigeratus multiplicatus.
Turbo plectogrammicus.
Astraliu (*Lithopoma*) *chipolanum*.
Astraliu (*Lithopoma*) *precursor*.
Collonia elegantula.
Collonia radiata.
Collonia chipolana.
Collonia claibornensis.
Chlorostoma (*Omphalius*) *exoletum* Conrad.
Gibbula americana.
Calliostoma philanthropus Conrad.
Calliostoma philanthropus var. *eliminatum* Dall.
Calliostoma (*philanthropus* var. ?) *conradianum* Dall.
Calliostoma metrium.
Calliostoma wilcoxianum.
Calliostoma virginicum Conrad.
Calliostoma grammaticum.
Calliostoma exile.
Calliostoma eboeum Wagner.
Calliostoma wagneri Dall.
Calliostoma aphelium.
Calliostoma nitens.
Calliostoma erosum.
Calliostoma harrisii.
Calliostoma cyclus.
Calliostoma (*Eutrochus*) *limulum*.
Calliostoma (*Eutrochus*) *ceramicum*.
Margarita tampaensis.
Solariella louisiana.
Solariella turritella.
Liotia (Arene) *solariella* Heilprin.
Liotia (Arene) *coronata*.
Liotia (Arene ?) *milium*.
Liotia (Arene) *perarmata*.
Liotia (Arene) *agenea*.
Teinostoma milium.
Teinostoma caloosaense.
Teinostoma chipolanum.
Teinostoma opsitelotus.
Teinostoma microforatis.
Teinostoma steiratum.
Teinostoma vortex.
Teinostoma collinus.
Teinostoma funiculus.
Teinostoma pseudadeorbis.
Dillwynella naticoides Lea.
Cochliolepis striata Simpson.
Cyclostrema chipolanum.
Molleria duplinensis.

Molleria minuscula.	Fissuridea carditella.
Nerita tampaensis.	Emarginula (Rimula) caroliniana.
Neritina chipolana.	Emarginula pilsbryi.
Neritina (Theodoxus?) edentula.	Vaginella chipolana.
Lucapina suffusa Reeve.	Ischonchiton tampaensis.
Fissuridea carolinensis Conrad.	Dentalium caloosaense.
Fissuridea nucula.	Dentalium prisma.
Fissuridea chipolana.	Dentalium caduloida.
Fissuridea caloosaensis.	Cadulus floridanus.

Reviewed by J. Koenen, Neues Jahrbuch, 179, 180. 1892.

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- Dall, W. H. Hinge of Pelecypoda and its Development, with an Attempt Toward a better Subdivision of the Group. (Am. Jour. Sci., (3), Vol. XXXVIII, pp. 435-462. New Haven, 1889.) The various characters upon which the different classifications of the Lamellibranchiates have been based are discussed. The special value of the hinge parts is then taken up and the conclusion arrived at that it forms the most satisfactory criterion.
- Dall, W. H. Preliminary Catalogue of the Shell-bearing Marine Mollusks and Brachiopods of the Southeastern Coast of the United States. (Bul. U. S. Nat. Mus., No. 37, 221 pp., 74 plates. Washington, 1889.) A catalogue of Neocene and Pleistocene forms, with a bibliography and their geological and geographical distribution. The following Neocene species are figured:

Terebratulina cubensis Pourtales.	Kellia planulata Stimpson.
Terebratulina septentrionalis Couth.	Cryptodon gouldii Philippi.
Eudesia cranium Miller.	Cardium pinnulatum Conrad.
Platidia seminula Philippi.	Cardium antillarum d'Orbigny.
Thecidium mediterraneum Sow- erby.	Cyprina islandica Linne.
Dimya argentea Dall.	Venus mercenaria Linne.
Janira hemicyclia Ravenel.	Petricola pholadiformis Lamarck.
Pecten magellanicus Gmelin.	Tagelus gibbus Spengler.
Pecten irradianus Lamarck.	Tagelus divisus Spengler.
Mytilus edulis Linne.	Tellina tenera Say.
Modiola modiolus Linne.	Macoma baltica Linne.
Modiolaria nigra Gray.	Cumingia tellinoides Conrad.
Modiolaria corrugata Stimpson.	Mactra solidissima Dillwyn.
Crenella glandula Totten.	Mactra lateralis Say.
Arca transversa Say.	Cochlodesma leanum Conrad.
Arca pexata Say.	Lyonsia hyalina Conrad.
Arca pectunculoides Scacchi.	Cuspidaria lamellosa M. Sars.
Nucula proxima Say.	Clidiophora gouldiana Dall.
Nucula delphinodonta Mighels.	Corbula disparilis d'Orbigny.
Yoldia limatula Say.	Corbula contracta Say.
Leda acuta Conrad.	Mya arenaria Linne.
Solenomya velum Say.	Saxicava arctica Linne.
Venericardia borealis Conrad.	Barnea costata Linne.
Astarte undata, Gould.	Zirphæa crispata Linne.
Astarte castanea Say.	Ringicula nitida Verrill.
Parastarte trinquetra Conrad.	Torantina canaliculata Say.
Circe cerina C. B. Adams.	Cylichnella bidentata d'Orbigny.
Eriphyla lunulata Conrad.	Scaphander nobilis Verrill.
	Umbraculum bermudense Morch.
	Driifia leucocyma Dall.

Daphnella reticulosa Dall.
 Glyphostoma gabbi Dall.
 Mangillia plicosa C. B. Adams.
 Pleurotomella chariessa Watson.
 Oliva literata Lamarck.
 Olivella mutica Say.
 Mitra swainsoni Brod. var. antil-
 lensis Dall.
 Mitra styria Dall.
 Fulgur carica Linne.
 Buccinum undatum Linne.
 Liomesus stimpsoni Dall.
 Phos parvus C. B. Adams.
 Nassarina glypta Bush.
 Nassa trivittata Say.
 Nassa vebex Say.
 Anachis avara Say.
 Astyris lunata Say.
 Phyllonotus promum Gmelin.
 Eupleura caudata Say.
 Urosalpinx cincerus Say.
 Purpura lapillus Linne.

Coralliophila deburghia Reeve.
 Scala multistriata Say.
 Scala grønlandica Perry.
 Atlanta peronii Lesueur.
 Seila terebralis C. B. Adams.
 Dolophanes gabbi Dall.
 Cæcum cooperi Smith.
 Seguenzia monocingulata Se-
 guenza.
 Adeorbis suprantidus Wood.
 Crucibulum striatum Say.
 Crepidula fornicata Linne.
 Crepidula plana Say.
 Capulus hungaricus Linne.
 Neverita duplicata Say.
 Lunatia duplicata Say.
 Lunatia heros var. triserita Say.
 Solariella ottoï Philippi.
 Molleria custulata Møller.
 Scissurella crispata Fleming.
 Pleurotomaria adamsoniana Crosse
 and Fischer.

- Dall, W. H. Species of *Donax* of Eastern North America. (The Nautilus, Vol. v. pp. 125-127. Philadelphia, 1892.) This paper gives the diagnostic features of the different species in tabular form and describes as new: *Donax emmonsii* and *Donax æquilibrata* from the later Miocene (Carolinian) of North Carolina.
- Dall, W. H. Types fossiles de l'Eocène du bassin de Paris, récemment découvertes en Amérique. (Bull. Soc. zool. de France, Vol. xv, pp. 97, 98. 1890.) Extract of a letter to Dr. Fisher announcing the collection of certain gasteropods of types hitherto unknown to the American Tertiary.
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- Dames, W. American Jurassic Mammals; O. C. Marsh: Am. Jour. Sci., 1887, Review. (Neues Jahrbuch, pp. 106-108. 1888.)
- Dames, W. American Triassic Rhynchocephalia; E. D. Cope: American Naturalist, 1887. Review. (Neues Jahrbuch, p. 308. 1888.)
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- Dames, W.** Crustacea from Lower Silurian of Tennessee; J. M. Safford and A. W. Vogdes: Proc. Acad. Nat. Sci., Phila., 1889. Review. (Neues Jahrbuch, 440. 1890.)
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- Dames, W.** Homologies of *Edestus*; Fanny R. M. Hitchcock: American Naturalist, 1887. Review. (Neues Jahrbuch, 143, 144. 1888.)
- Dames, W.** Horned Dinosauria from Cretaceous; O. C. Marsh: Am. Jour. Sci., xxxvi. Review. (Neues Jahrbuch, 363. 1889.)
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Dawson, J. W. New Species of Fossil Sponges from the Siluro-Cambrian at Little Metis, on the Lower St. Lawrence (including notes on the specimens by G. J. Hinde). (Trans. Roy. Soc. Canada, Vol. VII, Sec. IV, pp. 31-35. Montreal, 1889.) The following species described and figured:

<i>Protospongia tetranema</i> sp. nov.	<i>Acanthodictya hispida</i> Hinde.
<i>Protospongia mononema</i> sp. nov.	<i>Hyalostelia metissica</i> sp. nov.
<i>Protospongia coronula</i> sp. nov.	<i>Lasiotrix flabellata</i> sp. nov.
<i>Protospongia polynema</i> sp. nov.	<i>Lasiotrix curvicostata</i> Hinde.
<i>Protospongia cyathiformis</i> sp. nov.	<i>Halichondrites confusus</i> sp. nov.
<i>Protospongia delicatula</i> sp. nov.	<i>Obolella</i> (Linnarsson) pretio Bill.
<i>Cyathospongia quebecensis</i> sp. nov.	<i>Buthotrephis pergracilis</i> Dawson.

Reviewed in Am. Jour. Sci., (3), xxxix, 320, 1890; also Neues Jahrbuch, 458-460, 1892.

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Dawson, J. W., and G. J. Hinde. Species of Fossils from Little Metis, Province of Quebec, Canada. (Peter Redpath Mus., McGill Univ., pp. 49-68. 1888.) The following described as new:

<i>Protospongia tetranema</i> ,
<i>Buthotrephis pergracilia</i> .

Reviewed in Neues Jahrbuch, 328-329, 1889.

Dawson, J. W., and George Jennings Hinde. Sponges from Little Metis, Province of Quebec, Canada. (Canadian Rec. Sci., Vol. III, pp. 49-68. Ottawa, 1888.) The following described:

<i>Protospongia tetranema</i> sp. nov.	<i>Cyathophycus quebecensis</i> Dawson.
<i>Cyathophycus reticulatus</i> Walcott.	<i>Hyalostelia metissica</i> Dawson.

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Dentition of Certain Three-toed Horses, Permanent and Temporary. E. D. Cope. (Proc. Acad. Nat. Sci., Phila., XLIV, 325, 326. 1892.)

Dentition of Rodentia, Mechanical Causes of Origin. E. D. Cope. (American Naturalist, XXII, 3-13. 1888.)

Dentition, Permanent and Temporary, of Certain Three-toed Horses. E. D. Cope. (American Naturalist, XXVI, 942-944. 1892.)

Denver Beds, Tertiary Dinosauria. G. L. Cannon, Jr. (Proc. Colorado Sci. Soc., 140-147. 1888.)

Denver Formation, Age. E. D. Cope. (Science, XIII, 230. 1889.)

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- Development of Brachiopoda; Part I, Introduction.** C. E. Beecher. (Am. Jour. Sci., (3), XLI, 343-357. 1891.) Reviewed in American Geologist, x, pp. 253-255. 1892.
- Development of Brachiopoda; Part II, Classification of Stages of Growth and Decline.** C. E. Beecher. (Am. Jour. Sci., (3), XLIV, 133-154. 1892.)
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- Development of Paleozoic Poriferous Coral.** C. E. Beecher. (Trans. Connecticut Acad. Arts and Sci., VIII, Pt. II, 207-214. 1892.)
- Development of some Silurian Brachiopoda.** C. E. Beecher and J. M. Clarke. (Mem. N. Y. State Mus. Nat. Hist., I, 1-95. 1889.)
- Devonian.**
- Acervularia Profunda Hall and Acervularia Davidsoni, Edwards and Haime, Difference.** S. Calvin. (American Geologist, IX, 355-358. 1892.)
- Brachiopoda from Devonian Rocks of Iowa.** C. L. Webster. (American Naturalist, XXII, 1100-1105. 1888.) Descriptions of certain species, some of which are regarded as new.
- Bronteus in Chemung Rocks of New York.** J. M. Clarke. (Eighth Ann. Rep. State Geologist, for 1889, 57-60. 1889.)
- Bronteus in Chemung Rocks of New York.** J. M. Clarke. (State Mus. Nat. Hist., New York, 42d Ann. Rep., 403-405. 1889.) Notes on its occurrence.
- Bryozoa, Descriptions.** J. Hall. (Tenth Ann. Rep. State Geologist, New York, for 1890, 35-57. 1891.)
- Bryozoa, Paleozoic.** E. O. Ulrich. (Geol. Sur. Illinois, VIII, 283-288. 1890.) Description of new species.
- Calymene in Fauna of Intumescens Zone (Naples beds) of Western New York and its Geological Significance.** J. M. Clarke. (Am. Jour. Sci., (3), XLIII, 57-63. 1892.)
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- Canadian Micro-Paleontology.** T. Rupert Jones. (Geol. and Nat. Hist. Sur. Canada, Micro-Paleontology, Pt. III, 59-100. 1891.)
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- Characters of Diphyphyllum Simcoense (Bill) Rom.** W. H. Sherzer. (American Geologist, IV, 93-95. 1889.)
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- Chemung and Catskill (Upper Devonian) on Eastern Side of the Appalachian Basin.** J. J. Stevenson. (American Geologist, IX, 6-33. 1892.) Incidental references to fossils.
- Chemung and Catskill (Upper Devonian) on Eastern Side of the Appalachian Basin.** J. J. Stevenson. (Proc. Am. As. Adv. Sci., 1891, XL, 219-247. 1892.) Address before Section E.
- Conocardium from Devonian.** C. R. Keyes. (Proc. Iowa Acad. Sci., I, Part II, 23, 24. 1892.)

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<i>Palæosyops lavidens</i> Cope.	<i>Telmatotherium validus</i> Marsh.
<i>Palæosyops borealis</i> Cope.	<i>Telmatotherium cultridens</i> S. & O.
<i>Palæosyops valledens</i> Cope.	<i>Palæosyops lyognathus</i> S. & O.
<i>Palæosyops minor</i> sp. nov.	<i>Palæosyops megarlumis</i> Earle.
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- Fossils of Pliocene ("Floridian") Formation of the Caloosahatchie. A. Heilprin. (Trans. Wagner Free Inst. Sci., i, 68-134. 1887.)
- Hippotherium and Rhinoceras from Florida. J. Leidy. (Proc. Acad. Nat. Sci., Phila., 182, 183. 1890.)
- Mammalian Remains from Rock Crevice in Florida. J. Leidy. (Trans. Wagner Free Inst. Sci., ii, 13-17. 1889.)
- Sabre-Toothed Tiger and Other Quaternary Mammals of Florida. J. Leidy. (Proc. Acad. Nat. Sci., Phila., xli, 29-36. 1890.)
- Specimens of Bison Latiformis from Florida. F. A. Lucas. (Proc. Biol. Soc. Wash., Mch. 1891.)
- Tertiary Fauna of Florida. W. H. Dall. (Trans. Wagner Free Inst. Sci., iii, 1-200. 1890.)
- Vertebrates, Fossil. J. Leidy. (Proc. Acad. Nat. Sci., Phila., xlii, 64, 65. 1890.)
- Vertebrates, Fossil, from Florida. J. Leidy. (Proc. Acad. Nat. Sci., Phila., xli, 96-99. 1889.)
- Vertebrate Remains from Peace Creek, Florida. J. Leidy. (Trans. Wagner Free Inst. Sci., ii, 19-81. 1889.)
- Florissant, Fossil Butterflies.** S. H. Scudder. (U. S. Geol. Sur., Eighth Ann. Rep., 433-474. 1890.)
- Foerste, A. F.** Age of the Cincinnati Anticlinal. (American Geologist, Vol. vii, pp. 97-109. Minneapolis, 1891.) Numerous references to fossils.
- Foerste, A. F.** Clinton Group of Ohio; Part iv, Chemical and Stratigraphical Geology and Geographical Paleontology. (Bul. Sci. Lab. Dennison Univ., Vol. iii, Pt. i, pp. 3-12. Granville, 1888.) General consideration of the group.
- Foerste, A. F.** Geological Section at Todd's Fork, Ohio. (American Geologist Vol. ii, pp. 412-419. Minneapolis, 1888.) The following species described and figured as new:
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|---------------------------|---------------------|
| Oenites deripiens. | Eunicites falcatus. |
| Arabellites procursus. | Eunicites confinis. |
| Lumbriconereites austini. | Eunicites paululus. |

Foerste, A. F. Notes on Paleozoic Fossils. (Bul. Sci. Lab. Dennison Univ., Vol. III, Pt. II, pp. 117-136, 1 plate. Granville, 1888.) The new species described are:

Lichas halli.	Phacops serratus.
Encrinurus bromningi.	Cyathophyllum australe.
Encrinurus mitchelli.	

Reviewed in Neues Jahrbuch, 310, 1889.

Foerste, A. F. Paleontological Horizons of Limestone at Nahant, Mass. (Boston Soc. Nat. Hist., Vol. xxiv, pp. 26-263. Boston, 1889.) A number of species of Hyolites noted.

Foerste, A. F. Sections of Fossils. (Science, Vol. XI, p. 22. New York, 1888.) Remarks on the practicability of the use of internal characters as revealed by sections in the determination of fossils.

Foerste, A. F., N. S. Shaler and. Preliminary Description of North Attleborough Fossils. (Bul. Mus. Comp. Zool., No. 2, Geol. Ser., II, 27-41. 1888.)

Foord, Arthur H. Catalogue of the Fossil Cephalopods in the British Museum; Part I, Nautiloidea. (One vol., pp. i-xxxii and 1-344. London, 1888.)

The arrangement of the group described is primarily geological, secondarily stratigraphical, each genus being dealt with separately from the appearance to its extinction. This is a very complete description and synonymic catalogue of the cephalopods in the British Museum of Natural History. The work is of the greatest importance for those wishing to study exact limitation of the nautiloid genera and their classification. The American species described are the following:

Orthoceras decrescens Billings.	Actinoceras beloitense Whitfield.
Orthoceras arcuoliratum Hall.	Actinoceras remotiseptum Hall.
Orthoceras junceum Hall.	Actinoceras richardsoni Stoker.
Orthoceras multicameratum Emmons.	Actinoceras crebuseptum Hall.
Orthoceras lamellosum Hall.	Actinoceras capitulum ? Safford.
Orthoceras duseri Hall & Whitfield.	Actinoceras backi Stoker.
Orthoceras halli ? S. A. Miller.	Actinoceras vertebratum Hall.
Orthoceras mohri ? S. A. Miller.	Actinoceras spheroidale Stoker.
Orthoceras dyeri ? S. A. Miller.	Actinoceras inops ? Dawson.
Orthoceras transversum ? S. A. Miller.	Discosorus conoideus Hall.
Orthoceras laqueatum ? S. A. Miller.	Discosorus remotus sp. nov.
Orthoceras articum sp. nov.	Discosorus gracilis sp. nov.
Orthoceras griffithi ? Haughton.	Huronia bigsbyi Stoker.
Orthoceras annulatum Sowerby	Huronia vertebralis Stoker.
var. americanum var. nov.	Huronia minuens Barrande.
Orthoceras strix Hall & Whitfield.	Huronia obliqua Stoker.
Orthoceras davisoni Billings.	Huronia portlocki Stoker.
Orthoceras cingulum Hall.	Huronia turbinata Stoker.
Orthoceras bebrvx var. cayuga	Huronia distincta Barrande.
Hall.	Gomphoceras serinium Hall.
Endoceras rottermundi Barrande.	Gomphoceras nestor Hall.
Endoceras proteiforme Hall.	Poterioceras constrictum.
Endoceras magniventrum Hall.	Cyrtoceras (Neloceras) falx Billings.
Endoceras ? ommaneyi Salter.	Cyrtoceras (Neloceras) arcticameratum Hall.
Piloceras canadense Billings.	Gonioceras anceps Hall.
Actinoceras bigsbyi Bronn.	Jovellania murrayi Billings.

- Foord, Arthur H.** Catalogue of the Fossil Cephalopoda in the British Museum; Part II. (One vol., pp. i-xxv and 1-407. London, 1890.) The following American forms are described:
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|------------------------------------|-------------------------------------|
| Trochoceras boreale sp. nov. | Gyroceras trivolve Conrad. |
| Trochoceras americanum Billings. | Barrandeoceras oriens Hall. |
| Trochoceras halli Foord. | Temnochilus latus Meek & Worthen. |
| Trochoceras ammonius Conrad. | Temnochilus coxanus Meek & Worthen. |
| Trocholites planorbiformis Conrad. | Nautilus dekayi Morton. |
| Gyroceras cyclops Hall. | |
- Foord, Arthur H.** Contributions to Micro-Paleontology of the Cambro-Silurian Rocks of Canada. (Geol. and Nat. Hist. Sur. Canada, Contrib. to Micro-Pal., 26 pp., 7 plates. Ottawa, 1888.) The following are described and figured:
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| Monticulipora. | Monotrypella æqualis, Ulrich. |
| Monticulipora westoni sp. nov. | Amplexopora. |
| Monticulipora billingsi sp. nov. | Amplexopora canadensis sp. nov. |
| Homotrypa. | Amplexopora discoidea, Nicholson. |
| Homotrypa similis sp. nov. | Batostoma. |
| Prasopora. | Batostoma ottawaense sp. nov. |
| Prasopora oculata sp. nov. | Heterothypa. |
| Prasopora affinis sp. nov. | Heterothypa solitaria, Ulrich. |
| Prasopora selwynii, Nicholson. | Spatiopora. |
| Diplotrypa. | Spatiopora areolata sp. nov. |
| Diplotrypa regularis sp. nov. | Ptilodictya pavonia, d'Orbigny. |
| Diplotrypa whiteavesii, Nicholson. | Ptilodictya maculata, Ulrich. |
| Monotrypa undulata. | Tetradium peachii var. canadense var. nov. |
| Monotrypa undulata, Nicholson. | Tetradium huronense, Billings. |
| Monotrypella. | |
| Monotrypella trentonensis, Nich. | |
- Footprints from Connecticut Valley.** H. M. Mitivier. (Proc. Am. As. Adv. Sci., XL, 286. 1892.) Abstract.
- Footprints from Jura-Trias of New Jersey.** J. Eyerman. (Proc. Acad. Nat. Sci., Phila., 32, 33. 1889.)
- Foraminifera and Radiolaria from Cretaceous of Manitoba.** J. B. Tyrrell. (Trans. Roy. Soc. Canada, VIII, Sec. IV, 111-115. 1890.)
- Foraminifera from Post-Pliocene Sand at Santa Barbara, California.** A. Woodward. (New York Micros. Soc., Jour., v, 24, 25. 1889.)
- Foraminiferal Origin of Certain Cretaceous Limestones and the Sequence of Sediments in North American Cretaceous.** R. T. Hill. (American Geologist, VI, 174-177. 1889.) Various species of fossils referred to.
- Ford, S. W.** Certain Fossils Discovered within City Limits of Quebec. (Trans. New York Acad. Sci., Vol. VII, pp. 2-5. 1888.) The following are described:
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|----------------------------------|-------------------------------|
| Remoplenoides? schlotheimi Bill. | Leptaena? or Strophomena? |
| Shumardia granulosa? Bill. | Graptolites pristimiformis H. |
| Harpides sp.? | Cystidian. |
| Bathyurus canudatus Bill. | |
- Formations, Lower Silurian, of Wisconsin and Minnesota Compared.** F. W. Sarseson. (Bul. Minnesota Acad. Nat. Sci., III, 319-326. 1891.) Incidental references to fossils.
- Fort Cassin Rocks and their Fauna.** R. P. Whitfield. (Bul. Geol. Soc. America, I, 513-515. 1890.)
- Fossil Fish in Cleveland Shale.** E. W. Claypole. (American Geologist, II, 62-64. 1889.)
- Fossil Insects of North America; by Samuel H. Scudder.** Review. (Am. Jour. Sci., (3), XLI, 330. 1891.) Brief notice.
- Fossil of Puma.** J. Leidy. (Proc. Acad. Nat. Sci., Phila., XL, 9, 10. 1888.)

- Fossils**, Catalogue, Occurring in Missouri. G. Hambach. (Bul. Geol. Sur. Missouri, No. 1, 60-85. 1890.)
- Fossils** Collected in Northwest Territory, Canada, by Naturalists from University of Iowa. S. Calvin. (Bul. Lab. Nat. Hist. State Univ. Iowa, II, No. 2, 163-165. 1892.)
- Fossils**, Cretaceous, from British Columbia, the Northwest Territory, and Manitoba. J. F. Whiteaves. (Geol. and Nat. Hist. Sur. Canada, Contributions to Canadian Paleontology, I, 161-196. 1889.)
- Fossils** Discovered within City Limits of Quebec. S. W. Ford. (Trans. New York Acad. Sci., VII, 2-5. 1888.)
- Fossils**, Eocene, from Texas. T. H. Aldrich. (The Nautilus, IV, 25. 1890.)
- Fossils** from Iowa Devonian. C. R. Keyes. (Proc. Acad. Nat. Sci., Phila., 247-249. 1888.)
- Fossils** from Niagara Shales of Western New York. E. N. S. Ringueberg. (Proc. Acad. Nat. Sci., Phila., XL, 131-137. 1888.)
- Fossils** from Silurian Rocks of Southeastern Portion of District of Saskatchewan; J. F. Whiteaves: Canadian Rec. Sci., Apr., 1891. (American Geologist, Vol. IX, p. 56. 1892.) A brief notice of the paper.
- Fossils** from Triassic Rocks of British Columbia. J. F. Whiteaves. (Geol. and Nat. Hist. Sur. Canada, Contributions to Canadian Paleontology, I, 127-148. 1889.)
- Fossils**, Hudson River, of Jefferson County, Indiana. G. C. Hubbard. (Proc. Indiana Acad. Sci., I, 69. 1891.)
- Fossils** in "Archæan" Rocks of Central Piedmont, Virginia. N. H. Darton. (Am. Jour. Sci., (3), XLIV, 50-52. 1892.)
- Fossils** in Caves and Crevices of Limestone Rocks of Pennsylvania. J. Leidy. (Geol. Sur. Pennsylvania, Ann. Rep. 1887, 1-20. 1889.)
- Fossils** in Determining the Age of Geologic Terranes. H. S. Williams. (Proc. Am. As. Adv. Sci., XXXVII, 206. 1889.) Abstract.
- Fossils** in Limestones of Frederick County, Maryland. C. R. Keyes. (Johns Hopkins Univ. Circulars, No. 84, 32. 1890.)
- Fossils** in Lower Taconic of Emmons. C. D. Walcott. (Proc. Am. As. Adv. Sci., XXXVI, 202-222. 1888.) Abstract.
- Fossil** Sirenian f. in California. O. C. Marsh. (Am. Jour. Sci., (3), XXXV, 94-96. 1888.)
- Fossils** known to occur in Waverly Group of Ohio, Compiled, Tabulated List. W. F. Cooper. (Bul. Sci. Lab. Dennison Univ., IV, Pt. I, 123-130. 1889.)
- Fossils**, B. Shimek. (Bul. Lab. Nat. Hist. State Univ. Iowa, II, No. 1, 89-98. 1890.)
- Fossils** near Boston, Recent. W. Upham. (Am. Jour. Sci., (3), XLIII, 201-209. 1892.)
- Fossils**, New Species and New Structural Parts. S. A. Miller and Charles Faber. (Jour. Cincinnati Soc. Nat. Hist., XV, 1892.)
- Fossils**, Notes on Paleozoic. A. F. Foerste. (Bul. Sci. Lab. Dennison Univ., III, Pt. II, 117-136. 1888.)
- Fossils** Occurring in Missouri, Catalogue. G. Hambach. (Geol. Sur. Missouri, Bul. No. 1, 60-85. 1890.)
- Fossils** of Littleton, New Hampshire. R. Pumpelly. (Am. Jour. Sci., (3), XXXV, 79, 80. 1888.) Announcement of the discovery of Niagara fossils on Parker Mountain.
- Fossils** of Loess at Iowa City, Iowa. B. Shimek. (American Geologist, I, 149-152. 1888.)
- Fossils** of Western Taconic Limestone in the Eastern Part of Dutchess County, N. Y. W. B. Dwight. (Am. Jour. Sci., (3), XXXIX, 71. 1890.)
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- Fossils**, Sections. J. F. James. (Science, XI, 50. 1888.)

- Fossils**, Vertebrate, Geological Horizons Determined. O. C. Marsh. (Am. Jour. Sci., (3), XLII, 336-338. 1891.)
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- Frech, F.** Corals and Bryozoa from Lower Helderberg, Upper Helderberg, and Hamilton Group; J. Hall and G. Simpson: Paleontology of New York, IV. Review. (Neues Jahrbuch, pp. 183-184. 1892.)
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- Frech, F.** Fossils from Niagara Shales of Western New York; by E. N. S. Ringueberg: Proc. Acad. Nat. Sci., Phila., 1888. Review. (Neues Jahrbuch, 154. 1892.)
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- Frech, F.** New Genus of *Madreporaria* (*Glyphastrica*) with remarks on Morphology of *Glyphastrica Forbesi*, E. & H, from the Tertiary of Maryland; P. M. Duncan: Quart. Jour. Geol. Soc., London, 24, 1887. Review. (Neues Jahrbuch, 338, 339. 1888.)
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- Additions and Corrections to Miller's North American Paleontology. C. L. Herriek. (American Geologist, v, 253-255. 1890.)
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- Calcareous Formation in Champlain Valley. E. Brainard and H. M. Seely. (Bul. Geol. Soc. America, I, 501-516. 1890.) Incidental references to fossils.
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- Cambrian Fossils from Cohasset, Mass. C. D. Walcott. (Proc. Biol. Soc. Washington, VII, 155. 1892.)
- Cambrian Fossils, Upper, Description of New Forms. C. D. Walcott. (Proc. U. S. Nat. Mus., XIII, 266-279. 1891.)
- Cambrian, Middle, New Genera and Species of Fossils. C. D. Walcott. (Proc. U. S. Nat. Mus., XI, 441-446. 1889.)
- Cambro-Silurian Rocks of Manitoba, Eight New Species of Fossils. J. F. Whiteaves. (Trans. Roy. Soc. Canada, VII, Sec. IV, 75-83. 1889.)
- Carbonic Calyptraeidae, Synopsis of American. C. R. Keyes. (Proc. Acad. Nat. Sci., Phila., 180-181. 1890.)
- Catalogue of Shell-Bearing Marine-Mollusks and Brachiopods of Southeastern coast of the United States. W. H. Dall. (Bul. U. S. Nat. Mus., No. 37, 221 pp. 1889.)
- Cincinnati Group, Manual of Paleontology. J. F. James. (Jour. Cincinnati Soc. Nat. Hist., XIV, 45-72, 149-163, 144-159. 1891-1892.)
- Classification of Dyas, Trias, and Jura in Northwest Texas. J. Marcou. (American Geologist, x, 369-377. 1892.) Allusions to various species of fossils.
- Coal Measures of Central Iowa and Particularly in the Vicinity of Des Moines. C. R. Keyes. (American Geologist, II, 396-404. 1888.)
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- Coal Measures of Central Iowa, Fauna. C. R. Keyes. (Proc. Acad. Nat. Sci., Phila., 222-247. 1888.)
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- Confounding of *Nassa Trivittata* (Say) and *Nassa Peralta* (Con.) G. D. Harris. (American Geologist, viii, 174-176. 1891.)
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- Correlation of Lower Silurian Horizons of Tennessee and of Ohio and Mississippi Valleys with those of New York and Canada. E. O. Ulrich. (American Geologist, ii, 39-44. 1888.)
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- Cretaceous Deposits in Iowa. C. A. White. (American Geologist, i, 221-227. 1888.) Various species of fossils mentioned.
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- Evolution of *Strophostylus*. C. R. Keyes. (Proc. Iowa Acad. Sci., i, Pt. II, 25. 1892.)
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- Explorations and Surveys in Portions of Northern New Brunswick and Adjacent Areas in Quebec and Maine. L. W. Bailey and Wm. M. McInnes. (Geol. and Nat. Hist. Sur. Canada, Ann. Rep., iii, Part M, 527 pp. 1889.) Mention made of different species.
- Fauna of Lower Cambrian or *Olenellus* Zone. C. D. Walcott. (U. S. Geol. Sur., Tenth Ann. Rep., 511-658. 1890.)
- Fauna of Rocks at Fort Cassin, Vermont, with Descriptions of New Species. R. P. Whitfield. (Bul. Am. Mus. Nat. Hist., iii, 26-39. 1890.)
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- Fissurellidæ of the United States, Catalogue. H. A. Pilsbry and C. W. Johnson. (The Nautilus, v, 102-107. 1892.)
- Florida Miocene. D. W. Langdon, jr. (Am. Jour. Sci., (3), xxxviii, 322-324. 1889.) References made to various species.

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- Fossils in Lower Taconic of Emmons. C. D. Walcott. (Proc. Am. As. Adv. Sci., xxxvi, 212, 213. 1888.) Abstract.
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- Geology and Paleontology, North American. S. A. Miller. (One vol., 664 pp. Cincinnati, 1890.) New species described.
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- Geology of Central Nebraska. F. W. Russell. (American Geologist, vii, 38-44. 1891.) Numerous references to fossils.
- Geology of Johnson County, Iowa. C. L. Webster. (American Naturalist, xxii, 408-419. 1888.) Incidental references to fossils.
- Geology of Licking County, Ohio, Parts III and IV, Subcarboniferous and Waverly Groups. C. L. Herrick. (Bul. Sci. Lab. Dennison Univ., iii, Pt. I, 13-110. 1888.)
- Geology of Portion of Province of Quebec. R. W. Ells. (Geol. and Nat. Hist. Sur. Canada, Ann. Rep., iii, Part K, 114. 1888.) Mention made of different species.
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- Helicina Occulta, Distribution. C. R. Keyes. (The Nautilus, iii, 18, 19. 1889.)
- Hudson River "Fiord." A. M. Edwards. (Am. Jour. Sci., (3), xliii, 182, 183. 1892.)
- Invertebrate Fossils. A. H. Worthen. (Geol. Sur. Illinois, viii, 71-154. 1890.) A number of species described as new from Iowa, Illinois, and Missouri.
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- Iowa, Annotated Catalogue of Mollusca. C. R. Keyes. (Bul. Essex. Inst., xx, 1889.)
- Iowa, Collection of Fossils from Lower Magnesian Limestone. S. Calvin. (Bul. Lab. Nat. Hist. State Univ. Iowa, i, No. 2, 189-193. 1892.)
- Iowa, Lower Carbonic Gasteropoda from Burlington. C. R. Keyes. (Proc. Acad. Nat. Sci., Phila., 284-298. 1889.)
- Iowa, Straparollus from Southeastern. C. R. Keyes. (American Geologist, v, 193-197. 1890.)
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- Keokuk Group at Crawfordsville, Indiana. C. S. Beachler. (American Geologist, ii, 407-412. 1888.) Occurrence of characteristic fossils noted.
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- Maquoketa Shales in Iowa. J. F. James. (*Proc. Am. As. Adv. Sci.*, xxxviii, 250, 251. 1890.) Reference made to various species.
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- Goniopholis** in Jurassic of Colorado. E. D. Cope. (American Naturalist, xxii, 1106, 1107. 1888.)
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- Gregory, J. W.** Relation of American and European Fauna. (Bul. Geol. Soc. America, Vol. iii, pp. 101-108. 1892.) Comparisons of the faunas of the different geological formations made; and it is shown that they present phenomena wholly incompatible with the theory of the permanency of oceanic basins.
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- | | |
|-----------------------|----------------------------|
| Lingula. | Discinopsis gen. nov. |
| Lingulops. | Linnarssonina. |
| Lingulasma. | Mesotreta. |
| Lakhmina. | Siphonotreta. |
| Trimerella. | Schizambon. |
| Dinobolus. | Keyserlingia. |
| Monomerella. | Helmersenia. |
| Rhinobolus. | Discina. |
| Lingulella. | Lindströmella subgen. nov. |
| Lingulepis. | Æhlertella subgen. nov. |
| Barroisella gen. nov. | Ræmerella subgen. nov. |
| Tomasina gen. nov. | Trematis. |
| Obolella. | Schizocrania. |
| Leptobolus. | Crania. |
| Elkania. | Craniella. |
| Paterula. | Cardinocrania. |
| Obolus. | Pholidops. |
| Aulonotreta. | Orthis. |
| Schmidtia. | Plectorthis. |
| Monobolina. | Dinorthis. |
| Neobolus. | Plæsiomys. |
| Spondylobolus. | Hebertella. |
| Mickwitzia. | Orthostrophina. |
| Schizobolus. | Platystrophina. |
| Discinolepis. | Heterorthis. |
| Kutorgina. | Bilobites. |
| Schizopholis. | Dalmanella. |
| Volorthia. | Rhipidomella. |
| Iphidea. | Schizophoria. |
| Acrothele. | Orthotichia. |
| Acrotreta. | Enteleles. |
| Conotreta. | Billingsella gen. nov. |

Hall, James—Continued.

Protorthis gen. nov.

Clitambonites.

Polytæchia.

Scenidium.

Orthidium.

Strophomena.

Orthothetes.

Hipparionyx.

Kayserella gen. nov.

Derbya.

Meekella.

Streptorhynchus.

Triplecia.

Mimulus.

Streptis.

Leptæna.

Rafinesquina gen. nov.

Strophodonta.

Strophonella.

Leptella gen. nov.

Plectambonites.

Christiania gen. nov.

Leptænisca.

Davidsonia.

Chonetes.

Chonetina.

Chonostrophia gen. nov.

Chonopectus gen. nov.

Chonetella.

Strophalosia.

Daviesiella.

Aulosteges.

Productus.

Productella.

Proboscoidella.

Etheridgina.

The following species are described and figured as new:

Lingula compta sp. nov.

Lingula scutella sp. nov.

Lingula flabellula sp. nov.

Lingula paracletus sp. nov.

Lingula lingulata sp. nov.

Lingulops granti sp. nov.

Monomerella greeni sp. nov.

Monomerella kingi sp. nov.

Monomerella ortonii sp. nov.

Monomerella egani sp. nov.

Rhinobolus davidsoni sp. nov.

Siphonotreta (?) minnesotensis
sp. nov.Orbiculoidea (Schizotreta) ovalis
sp. nov.

Orbiculoidea numulus sp. nov.

Orbiculoidea herzeri sp. nov.

Lindströmella aspidum gen. et
sp. nov.

Schizocrania schucherti sp. nov.

Schizocrania (?) helderbergia
sp. nov.

Crania agarcina sp. nov.

Crania pulchella sp. nov.

Crania granosa sp. nov.

Crania favincola sp. nov.

Craniella ulrichi sp. nov.

Pholidops calceola sp. nov.

Pholidops patina sp. nov.

Orthis? saffordi sp. nov.

Orthis? holstoni Safford.

Orthis (Plæsiomys) loricula sp. nov.

Orthis (Dalmanella) arcuaria sp. nov.

Orthis (Dalmanella) superstes sp. nov.

Orthis (Rhipidomella) oweni sp. nov.

Orthis (Schizophoria) senecta sp. nov.

Strophomena conradi sp. nov.

Strophomena winchellii sp. nov.

Orthothetes desideratus sp. nov.

Derbya ruginosa sp. nov.

Derbya costatula sp. nov.

Derbya broadheadi sp. nov.

Derbya bennetti sp. nov.

Derbya cymbula sp. nov.

Derbya affinis sp. nov.

Derbya (?) biloba sp. nov.

Streptorhynchus ulrichi sp. nov.

Christiania subquadrata sp. nov.

Leptænisca adnascens sp. nov.

Leptænisca tangens sp. nov.

Strophalosia rockfordensis sp. nov.

Chonostrophia helderbergia sp. nov.

Reviewed in Am. Geologist, x, 251-253, 1892; also Am. Jour. Sci., (3), XLIV, 330-332. 1892.

Hall, James, and John M. Clarke. Paleontology of New York. (Nat. Hist. New York, Pal., Vol. VII, 236 pp., 36 plates. Albany, 1888.) Descriptions of the trilobites and other crustacea of the Oriskany, Upper Helderberg, Hamilton and Catskill groups. The introduction contains a synopsis of genera, with descriptions and bibliographies of the following:

Calymene.

Homalonotus.

Bronteus.

Phacops.

Hall, James—Continued.

Dalmanites.	Protolimulus.
Hausmannia.	Eurypterus.
Coronura subgen. nov.	Stylonurus.
Cryphæus subgen. nov.	Ceratiocaris.
Odontocephalus subgen. nov.	Echinocaris.
Chasmops subgen. nov.	Elymocaris.
Corycephalus subgen. nov.	Tropidocaris.
Acidaspis.	Mesothyra gen. nov.
Lichas.	Dithyrocaris.
Terataspis.	Rhinocaris gen. nov.
Conolichas subgen. nov.	Spathiocaris.
Hoplolichas subgen. nov.	Dipterocaris.
Arges subgen. nov.	Palæpalæmon.
Ceratolichas subgen. nov.	Estheroa.
Dicranognmus subgen. nov.	Schizodiscus gen. nov.
Proetus.	Protobalanus gen. nov.
Phaethonides.	Strobilepis gen. nov.
Cyphaspis.	Turrilepas.

The work itself contains descriptions with figures of the following species:

Calymene platys Green.	Dalmanites (Cryphæus) barrisi sp. nov.
Homalonotus major Whitfield.	Dalmanites (Odontocephalus) selenurus (Eaton).
Homalonotus dekayi (Green).	Dalmanites (Odontocephalus) bifidus Hall.
Homalonotus vanuxemi Hall.	Dalmanites (Odontocephalus) ægeria Hall.
Bronteus tullius sp. nov.	Dalmanites (Odontocephalus ?) coronatus Hall.
Phacops cristata Hall.	Dalmanites (Corycephalus) regalis Hall.
Phacops rana Hall.	Dalmanites (Corycephalus) pygmæus sp. nov.
Phacops cristata var. pipa var. nov.	Dalmanites (Corycephalus) dentatus Barrett.
Phacops bufo (Green).	Dalmanites (Chasmops) anchiops (Green).
Phacops cacapona Hall.	Dalmanites (Chasmops) anchiops var. armatus Hall.
Phacops nupera (Hall).	Dalmanites anchiops var. sobrinus var. nov.
Dalmanites (Hausmannia) pleuroptyx (Green).	Dalmanites (Chasmops) calypso (Hall).
Dalmanites (Hausmannia) concinnus Hall.	Dalmanites (Chasmops) erina Hall.
Dalmanites (Hausmannia) concinnus var. serrula var.	Dalmanites (Chasmops) eriopsis Hall.
Dalmanites (Hausmannia) phacoptyx sp. nov.	Acidaspis callicera sp. nov.
Dalmanites (Hausmannia) meeki Walcott.	Acidaspis sp. ?
Dalmanites (Coronura) aspectans (Conrad).	Acidaspis romingeri sp. nov.
Dalmanites (Coronura) myrmecophorus (Green).	Lichas terataspis grandis Hall.
Dalmanites (Coronura) emarginatus (Hall).	Lichas (Conolichas) hispidus sp. nov.
Dalmanites (Cryphæus) comis sp. nov.	Lichas (Conolichas) eriopsis Hall.
Dalmanites (Cryphæus) pleione Hall.	Lichas (Conolichas) ? sp.
Dalmanites (Cryphæus) boothii Greene.	Lichas (Hoplolichas) hylæus sp. nov.
Dalmanites (Cryphæus) boothii var. calliteles.	Lichas (Arges) contusus sp. nov.
	Lichas (Ceratolichas) gryps sp. nov.
	Lichas (Ceratolichas) dracon sp. nov.
	Lichas (Dicranognmus) ptyonurus sp. nov.
	Proetus conradi Hall.

Hall, James—Continued.

- Proetus angustifrons* Hall.
Proetus hesione Hall.
Proetus sp. ?
Proetus curvimarginatus sp. nov.
Proetus latimarginatus sp. nov.
Proetus crassimarginatus Hall.
Proetus folliceus sp. nov.
Proetus clarus Hall.
Proetus canaliculatus Hall.
Proetus verneuili Hall.
Proetus microgemma sp. nov.
Proetus stenopyge sp. nov.
Proetus ovifrons sp. nov.
Proetus pelphinulus sp. nov.
Proetus (?) *planimarginatus* Meek.
Proetus tumidus sp. nov.
Proetus haldemiani Hall.
Proetus macrocephalus Hall.
Proetus rowii (Green).
Proetus marginalis (Conrad).
Proetus jejunos sp. nov.
Proetus phocion Billings.
Proetus prouti Shumard.
Proetus nevadæ sp. nov.
Proetus occidentis Hall.
Proetus (?) *longicaudus* Hall.
Proetus missouriensis Shumard.
Phaethonides arenicolus sp. nov.
Phaethonides varicella sp. nov.
Phaethonides gemmæus sp. nov.
Phaethonides cyclurus sp. nov.
Phaethonides (?) *denticulatus* Meek.
Cyphaspis minuscula Hall.
Cyphaspis stephanophora sp. nov.
Cyphaspis diadema sp. nov.
Cyphaspis hybrida sp. nov.
Cyphaspis ornata (Hall).
Cyphaspis ornata var. *baccata* var. nov.
Cyphaspis craspedota sp. nov.
Cyphaspis lævis Hall.
Cyphaspis cœlebs sp. nov.
Protolimulus eriensis (Williams).
Eurypterus beecheri Hall.
- Eurypterus prominens* Hall.
Stylonurus excelsior Hall.
Stylonurus ? (*Echinocaria* ?) *wrightianus* (Dawson).
Ceratiocaris longicauda Hall.
Ceratiocaris beecheri Clarke.
Ceratiocaris ? *simplex* Clarke.
Echinocaris punctata Hall.
Echinocaris whitfieldi Clarke.
Echinocaris condylepis sp. nov.
Echinocaris socialis Beecher.
Echinocaris pustulosa Whitfield.
Echinocaris multinodosa Whitfield.
Elymocaridius capsella sp. nov.
Elymocaridius siliqua Beecher.
Tropidocaris bicarinata Beecher.
Tropidocaris interrupta Beecher.
Tropidocaris alternata Beecher.
Mesothyra oceani sp. nov.
Mesothyra neptuni Hall.
Mesothyra spumæa sp. nov.
Mesothyra (*Dithyrocaris* ?) *veneris* sp. nov.
Dithyrocaris belli Woodward.
Rhinocaris columbia sp. nov.
Rhinocaris scaphoptera sp. nov.
Spathiocaris emersoni Clarke.
Dipterocaris pennæ-dædali Clarke.
Dipterocaris procne Clarke.
Dipterocaris pes-cervæ Clarke.
Palaepalæmon newberryi Whitfield.
Estheria pulex Clarke.
Schizodiscus capsæ sp. nov.
Protobalanus hamiltonensis sp. nov.
Palæocreusia devonica sp. nov.
Strobilepsis springera sp. nov.
Turrilepas flexuosus sp. nov.
Turrilepas devonicus Clarke.
Turrilepas cancellatus sp. nov.
Turrilepas squama sp. nov.
Turrilepas nitidulus sp. nov.
Turrilepas foliatus sp. nov.
Turrilepas tener sp. nov.
Turrilepas (?) *newberryi* Whitfield.
Stylonurus excelsior.

Reviewed in *Am. Naturalist*, XXII, 714, 1888; also in *Neues Jahrbuch*, 186-190, 1889; and *Am. Geologist*, III, 147-148, 1889.

Hall, James. Crustaceous Tracks from the Potsdam Sandstone of Port Henry, N. Y. (New York State Mus. Nat. Hist., 42nd. Ann. Rep., pp. 25-34. 1889.)

Hall, James. Descriptions of Bryozoa. (Tenth Ann. Rep. State Geologist, New York, for 1890, pp. 35-57. Albany, 1891.) A continuation of the descriptions of Bryozoa not printed in volume VI of the Paleontology of New York. The following species described by the author in various papers are here redescribed without figures:

<i>Paleschara pertenuis.</i>	<i>Stictopora palmipes.</i>
<i>Paleschara intercella.</i>	<i>Stictopora granifera.</i>
<i>Paleschara reticulata.</i>	<i>Stictopora divergens.</i>
<i>Paleschara variacella.</i>	<i>Stictopora permarginata.</i>
<i>Paleschara amplexena.</i>	<i>Stictopora interstriata.</i>
<i>Stictopora rectalines.</i>	<i>Stictopora recubans.</i>
<i>Stictopora tumulosa.</i>	<i>Stictopora subcarinata.</i>
<i>Stictopora straita.</i>	<i>Semiopora bistigmata.</i>
<i>Stictopora sinuosa.</i>	<i>Prismopora dilatata.</i>
<i>Stictopora ovata.</i>	<i>Prismopora lata.</i>
<i>Stictopora incrassata.</i>	<i>Ptilodictya parallela.</i>
<i>Stictopora limata.</i>	<i>Ptilodictya plumis.</i>
<i>Stictopora subrigida.</i>	<i>Thamniscus pauciramus.</i>
<i>Stictopora crenulata.</i>	<i>Hederalla conferta.</i>
<i>Stictopora angularis.</i>	<i>Ptilopora straita.</i>
<i>Stictopora recta.</i>	<i>Ptilopora nodosa.</i>
<i>Stictopora bifurcata.</i>	

Reviewed in Ann. Soc. géol. du Nord, t. xv, 123, 1888.

Hall, James. Description of *Linnarssonina* enf. *Pretiosa*, Billings. (Trans. Roy. Soc. Canada, Vol. VII, Sec. IV, p. 55. Montreal, 1889.) A brief description of the form.

Hall, James. Genera of Paleozoic Brachiopoda. (Tenth Ann. Rept. State Geologist, New York, for 1890, pp. 15-17. Albany, 1891.) A tabulated list of Paleozoic brachiopods discussed in Paleontology of New York, Vol. VIII.

Hall, James. Genus *Spirifer*, and its Interrelations with the Genera *Spiriferina*, *Syringothyris*, *Cyrtia* and *Crytina*. (Bul. Geol. Soc. America, Vol. I, pp. 567, 568. New York, 1890.) A synopsis of a study of the characters and relations of the group.

Hall, James. New Genera and Species of the Family Dictyospongiadæ. (Bul. Geol. Soc. America, Vol. I, pp. 22, 23. New York, 1890.) Notice, without descriptions or figures, of several new species from New York Chemung.

Hall, James. Paleontology of New York. (Nat. Hist. New York, Pal., Vol. v, Pt II, 42 pp., 14 plates. Albany, 1888.) Contains descriptions and illustrations of Pteropoda, Cephalopoda, and Annelida of the Niagara, Lower and Upper Helderberg, Hamilton and Waverly groups. The following species are described and figured, with notes:

<i>Tentaculites minutus</i> Hall.	<i>Pharetrella tenebrosa</i> sp. nov.
<i>Tentaculites niagarensis</i> (Hall)	<i>Spirorbis cincinnatensis</i> Miller & Dyer.
var. <i>cumberlandia</i> var. nov.	<i>Ortonia minor</i> Nicholson.
<i>Tentaculites gyracanthus</i> Eaton.	<i>Ortonia conica</i> Nicholson.
<i>Tentaculites elongatus</i> (Hall).	<i>Conchicolites corrugatus</i> Nicholson.
<i>Tentaculites acula</i> sp. nov.	<i>Tentaculites sterlingensis</i> Meek & Worthen.
<i>Tentaculites dextithea</i> sp. nov.	<i>Tentaculites richmondensis</i> Miller.
<i>Tentaculites scalariformis</i> Hall.	<i>Cornulites flexuosus</i> Hall.
<i>Hyalithes centennialis</i> Barrett.	<i>Cornulites immaturus</i> .
<i>Hyalithes heros</i> sp. nov.	<i>Cornulites incurvus</i> Shumard.
<i>Styliola spica</i> sp. nov.	<i>Cornulites distans</i> (Hall).
<i>Coleolus herzeri</i> sp. nov.	<i>Cornulites clintoni</i> Hall.
<i>Pharetrella</i> gen. nov.	

Hall, James—Continued.

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| Cornulites sp. ? | Gomphoceras manes Hall. |
| Cornulites arcuatus (Conrad). | Gomphoceras nasutum Hall. |
| Cornulites proprius (Hall). | Gomphoceras potens Hall. |
| Cornulites bellastratus Hall. | Cyrtoceras subcompressum Hall. |
| Cornulites chrysalis sp. nov. | Cyrtoceras jason Hall. |
| Cornulites cingulatus sp. nov. | Cyrtoceras citum Hall. |
| Cornulites tribulis sp. nov. | Gyroceras nereus Hall. |
| Orthoceras duramen Hall. | Gyroceras laciniosum Hall. |
| Orthoceras sceptrum Hall. | Gyroceras? stebos Hall. |
| Orthoceras directum Hall. | Trochoceras pandum, Hall. |
| Orthoceras dagon Hall. | Nautilus oriens Hall. |
| Orthoceras rudens Hall. | Nautilus hyatti Hall. |
| Orthoceras expositum Hall. | Nautilus parallelus Hall. |
| Orthoceras consortale Hall. | Nautilus (Discites) ammonis Hall. |
| Orthoceras indianense Hall. | Nautilus (Discites) marcellensis Hall. |
| Orthoceras icarus Hall. | Goniatites vanuxemi Hall. |
| Gomphoceras fax Hall. | Goniatites vanuxemi, var. nodiferus Hall. |
| Gomphoceras illæus Hall. | Goniatites discoideus Hall. |
| Gomphoceras absens Hall. | Goniatites uniaugularis Conrad. |
| Gomphoceras eximium Hall. | Goniatites amplexus Hall. |
| Gomphoceras mitra Hall. | Goniatites complantus Hall. |
| Gomphoceras impar Hall. | Goniatites sinuosus Hall. |
| Gomphoceras cammarus Hall. | Goniatites patersoni Hall. |
| Gomphoceras gomphus Hall. | Goniatites oweni Hall. |
| Gomphoceras crenatum Hall. | Goniatites ixion Hall. |
| Gomphoceras plenum Hall. | |
| Gomphoceras minum Hall. | |

Hall, James. Paleontology of New York, Volume VII. (Eighth Ann. Rep. State Geologist, New York, for 1889, pp. 7-24. Albany, 1889.) A brief preliminary synopsis of the report. Reviewed in Am. Jour. Sci., (3), XXXIX, 155, 1890.

Hall, James. Preliminary Notice of Newberria; a New Genus of Brachiopods, with Remarks on its Relations to Rensselaeria and Amphigenia. (Tenth Ann. Rep. State Geologist, New York, for 1890, pp. 91-98, 2 plates. Albany, 1891.) A description of the genus, with figures and descriptions of the following species:

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| Newberria? condoni (McChes- | Newberria johannis (Hall). |
| ney). | Newberria missouriensis (Swallow). |
| Newberria levis (Meek). | Newberria claypolii sp. nov. |

Reviewed in Neues Jahrbuch, 155, 156, 1892.

Hall, James. Suggestions Regarding the Subdivisions and Groupings of the Species usually included under the Generic Term *Orthis*, in accordance with External and Internal Characters and Microscopic Structure. (Bul. Geol. Soc. America, Vol. I, pp. 19-22. New York, 1890.) A suggested revision of the genus.

Hall, James. Type Specimens of Devonian Crustacea Described in Paleontology of New York, Vol. VII, in the Possession of the New York State Museum of Natural History. (Eighth Ann. Rep. State Geologist, New York, for 1889, pp. 24-27. Albany, 1889.) A list of the specimens described.

Haliserites z. Th., und ähnliche Gebilde, Ueber Palæospongia Prisca, Bornem Eophyton z. Th., Chondrites Antiguus. H. Rauff. (Neues Jahrbuch f. Min., Geol. u. Pal., 92-104. 1892.)

Hallopoda, Distinctive Characters of the Order. O. C. Marsh. (Am. Jour. Sci., (3), XXXIX, 415-417. 1890.)

Hallopus and Other Dinosaurs. G. Baur. (American Naturalist, XXIV, 569-571. 1890.)

- Halzapfel, A.** Annotated Check-List of the Cretaceous Invertebrate Fossils; by R. T. Hill: Geol. Sur. Texas, Bul. No. 4, 1889. Review. (Neues Jahrbuch, p. 305. 1890.)
- Halzapfel, A.** Cretaceous Fossils from British Columbia, the Northwest Territory, and Manitoba; by J. F. Whiteaves: Cont. Can. Pal., 1, 1889. Review. (Neues Jahrbuch, pp. 158, 159. 1891.)
- Halzapfel, A.** Invertebrate Fossils from the Pacific Coast; by C. A. White: Bul. U. S. Geol. Sur., No. 51, 1889. Review. (Neues Jahrbuch, pp. 154-153. 1892.)
- Halzapfel, A.** Occurrence of Fossils of Cretaceous Age on the Islands of Marthas Vineyard, Mass.; by N. S. Shaler: Bul. Mus. Comp. Zool. xvi. Review. (Neues Jahrbuch, p. 305. 1890.)
- Halzapfel, A.** Paleontology of Cretaceous Formation of Texas, Part 1; by R. T. Hill: Bul. Texas Univ., School Geology. Review. (Neues Jahrbuch, p. 300. 1890.)
- Hambach, G.** Catalogue of Fossils Occurring in Missouri. (Bul. Geol. Sur. Missouri, No. 1, pp. 60-85. Jefferson City, 1890.) A tabulated list of fossils reported from the state.
- Hamilton Formation of Ontario, with List of Species at Present Known from that Formation and Province.** J. F. Whiteaves. (Geol. and Nat. Hist. Sur. Canada, Contributions to Canadian Paleontology, 1, 95-125. 1889.)
- Hamilton Group near Iowa City, Iowa, Species of Spirifera.** S. Calvin. (Bul. Lab. Nat. Hist., State Univ. Iowa, 1, No. 1, 28, 29. 1888.)
- Hamilton of Chenango and Osteo Counties, New York.** C. S. Prosser. (Proc. Am. As. Adv. Sci., xxvi, 210. 1888.) Abstract. Various species mentioned.
- Hamilton Period in Western Ontario, Vertical Range of Certain Species of Fossils.** S. Calvin. (American Geologist, 1, 81-86. 1888.)
- Haplocrinus, Ventral Structure, and Consequent Modifications in Classification of Crinoidea.** C. Wachsmuth and F. Springer. (Proc. Acad. Nat. Sci., Phila., 337-363. 1888.)
- Harris, Gilbert D.** Confounding of *Nassa Triviata*, Say, and *Nassa Peralta*, Conrad. (American Geologist, Vol. viii, pp. 174-176. Minneapolis, 1891.) Notes on the confusion of the forms, with the literature of the subject.
- Harris, Gilbert D.** Genus *Terebellum* in American Tertiaries. (American Geologist, Vol. v, p. 315. Minneapolis, 1890. The occurrence of this genus in the Eocene of Texas is noted.)
- Harris, Gilbert D.** Geology of Southwestern New York. (American Geologist, Vol. vii, pp. 164-178. Minneapolis, 1891.) Incidental references to fossils.
- Harris, T. W.** Mount Bob, Mount Ida, on Snake Hill. (Am. Jour. Sci., (3), Vol. XLIII, pp. 236-238. New Haven, 1892.) Incidental references to fossils.
- Hay, Robert.** Geological Reconnaissance in Southwestern Kansas. (Bul. U. S. Geol. Sur., No. 57, 49 pp., 2 plates. Washington, 1890.) Incidental references to fossils.
- Hay, Robert.** New Species of Fossils Cephalopods. (Trans. Kansas Acad. Sci., Vol. XIII, pp. 37-47. Topeka, 1893.) Notes on, and republication of, descriptions by Hyatt.
- Heilprin, Angelo.** Eocene Mollusca of the State of Texas. (Proc. Acad. Nat. Sci., Phila., XLII, pp. 393-406, 1 plate. Philadelphia, 1890.) A list is given of the Eocene mollusca known from Texas and the following species are described and figured as new:
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| <i>Natica dumblei.</i> | <i>Buccitriton scalatum.</i> |
| <i>Cerithium texanum.</i> | <i>Ancillaria ancillops.</i> |
| <i>Clavella (Fusus ?) penrosei.</i> | <i>Crassatella texana.</i> |
- Heilprin, Angelo.** Fossils of Pliocene ("Floridian") Formation of the Caloosahatchie. (Trans. Wagner Free Inst. Sci., Vol. 1, pp. 68-134, 19 plates. Philadelphia, 1887.)

- Heilprin, Angelo.** Geological Evidences of Evolution. (One volume. Philadelphia, 1888.) References to fossil species. Reviewed in *Nature*, XXXVIII, 50, 51. 1888.
- Heilprin, Angelo.** Geological Researches in Yucatan. (Proc. Acad. Nat. Sci., Phila., Vol. XLIII, pp. 136-158. Philadelphia, 1891.) List of Pliocene fossils given.
- Heilprin, Angelo.** Geology and Paleontology of Cretaceous Deposits of Mexico. (Proc. Acad. Nat. Sci., Phila., Vol. XLII, pp. 445-469. Philadelphia, 1890.) Notes on a number of species.
- Heilprin, Angelo.** Miocene Mollusca of the State of New Jersey. (Proc. Acad. Nat. Sci., Phila. Vol. XXXIX, pp. 397-405. Philadelphia, 1888.) A list of species is given with notes on various forms and descriptions of the following:
Murex shilohensis sp. nov. *Triforis terbata* sp. nov.
Plerotoma pseudoburena sp. nov. *Pecten humphreyi* var. *woomani*, var. nov.
- Reviewed in *Neues Jahrbuch*, 351, 1890.
- Helderberg, Chemung, and Waverly Group Fossils**, found in the Collections of the Geological Survey of Pennsylvania. G. B. Simpson. (Trans. Am. Philos. Soc., xv, 435-460. 1888.)
- Helderberg Limestone in North America**, and "Hercyn-Frage." J. M. Clarke. (*American Geologist*, Vol. VII, 109-113. 1891.)
- Helderberg, Lower, Beecherella, New Genus of Ostracoda.** E. O. Ulrich. (*American Geologist*, XIII, 197-204. 1891.)
- Helderberg, Lower, of New Brunswick, Fish Remains.** G. F. Matthew. (*American Geologist*, VIII, 61, 62. 1891.)
- Helopora** (Hall), and other Genera of that type, *Sceptropora*, Genus of Bryozoa. E. O. Ulrich. (*American Geologist*, I, 228-234. 1888.)
- Hemiptera of British Columbia, Canadian Fossil Insects**, I, Tertiary. S. H. Scudder. (*Geol. and Nat. Hist. Sur. Canada, Cont. Canadian Pal.*, II, 5-26. 1891.)
- Hemiptera, Physiognomy of American Tertiary.** S. H. Scudder. (*Proc. Boston Soc. Nat. Hist.*, XXIV, 562-579. 1890.)
- "**Hercyn-Frage**" and Helderberg Limestone in North America. J. M. Clarke. (*American Geologist*, VII, 109-113. 1891.)
- Hercynian Fauna of Northern Hartz in Germany.** C. D. Walcott. (*Am. Jour. Sci.*, (3), XXXIX, 155, 156. 1890.)
- Hercynian Question: Brief Review of its Development and Present Status**, with a few Remarks upon its Relations to the Current Classification of American Paleozoic Faunas. J. M. Clarke. (*State Cab. Nat. Hist.*, New York, 42d Ann. Rep., pp. 408-437. 1889.)
- Hercynian Question.** J. M. Clarke. (Eighth Ann. Rep. State Geologist, New York, for 1889, 62-92. 1889.)
- Herrick, C. L.** Additions and Corrections to Miller's North American Paleontology. (*American Geologist*, Vol. v, pp. 253-255. Minneapolis, 1890.) A list of omitted species is given.
- Herrick, C. L.** Cuyahoga Shale and the Problem of the Ohio Waverly. (*Bul. Geol. Soc. America*, Vol. II, pp. 31-47, 1 plate. Washington, 1891.) A list of the common fossils of the Cuyahoga shale is given. The following species are described and figured:
Phaethonides spinosus, Herrick. *Leiopteria cuyahoga*, sp. nov.
Phillipsia consors, Herrick. *Conocardium alternistriatum*, Herrick.
Phillipsia meramecensis, Shumard. *Spirifer pseudolineatus*, Hall.
Cytherella uniformis, sp. nov. *Cypriocardinia* sp.
Leptodesma nasutus, Herrick. *Discina magnifica*, sp. nov.
- Herrick, C. L.** Description of Four New Species of Waverly Fossils. (*Bul. Sci. Lab. Dennison Univ.*, Vol. IV, pp. 11-60 and 97-123. 1890.) Contains also lists of, and a consideration of, other forms.

Herrick, C. L. Geology of Licking County, Ohio, Parts III and IV, Subcarboniferous and Waverly Groups. (Bul. Sci. Lab. Dennison Univ., Vol. III, Pt. I, pp. 13-110, 12 plates. Granville, 1888.) The stratigraphy is discussed after which the paleontology of the rocks is considered and the following species described as new:

<i>Nautilus</i> (?) <i>bisculatus</i> .	<i>Promacra</i> (?) <i>truncatus</i> .
<i>Phillipsia</i> <i>præcursor</i> .	<i>Leiopteria</i> <i>ortoni</i> .
<i>Chonetes</i> <i>tumidus</i> .	<i>Leiopteria</i> <i>halli</i> .
<i>Orthis vanuxemi</i> var. <i>pulchellus</i> .	<i>Modiola</i> <i>waverleyensis</i> .
<i>Spirifera</i> <i>winchelli</i> .	<i>Schizodus</i> <i>newarkensis</i> .
<i>Spirifera</i> <i>depressa</i> .	<i>Sanguinolites</i> (<i>Goniophora</i>) <i>senilis</i> .
<i>Aviculopecten</i> <i>perlongatus</i> .	<i>Allorisma</i> <i>cooperi</i> .
<i>Aviculopecten</i> <i>granvillensis</i> .	<i>Allorisma</i> <i>convexa</i> .
<i>Aviculopecten</i> <i>cooperi</i> .	<i>Macodon</i> (?) <i>triangularis</i> .
<i>Crenipecten</i> <i>subcardiformis</i> .	<i>Nuculana</i> (<i>Leda</i>) <i>spatulata</i> .
<i>Crenipecten</i> <i>senilis</i> .	<i>Nuculana</i> (<i>Leda</i>) <i>similis</i> .
<i>Aviculopecten</i> (<i>Lyriopecten</i>) <i>cancellatus</i> .	<i>Palæoneilo</i> <i>ellipticus</i> .
<i>Linatulina</i> (?) <i>ohioensis</i> .	<i>Palæoneilo</i> <i>ellipticus</i> , var. <i>ficatella</i> .
<i>Streblopteria</i> <i>media</i> .	<i>Palæoneilo</i> <i>ellipticus</i> , var. <i>elegantula</i> .
<i>Streblopteria</i> <i>synama</i> .	<i>Palæoneilo</i> <i>ellipticus</i> , var. <i>allorismi-</i>
<i>Streblopteria</i> <i>gracilis</i> .	<i>formis</i> .
<i>Pterinopecten</i> <i>carboniferus</i> .	<i>Arca</i> <i>ornata</i> .
<i>Pretomites</i> (<i>Leptodesma</i>) ? <i>oblongus</i> .	<i>Gonoidon</i> gen. nov.
<i>Leptodesma</i> (?) <i>scutella</i> .	<i>Gonoidon</i> <i>ohioensis</i> .
<i>Posidonomata</i> (<i>Streblopteria</i>) <i>fragilis</i> .	<i>Pleurotomaria</i> (<i>Cyclonema</i>) <i>strigillata</i> .
	<i>Dentalium</i> <i>granvillensis</i> .
	<i>Schizodus</i> (<i>Protoschizodus</i>) <i>palæoneili-</i>
	<i>formis</i> .

Herrick, C. L. Geology of Licking County, Ohio, Part IV, Waverly Group, Continued, General Conclusions. (Bul. Sci. Lab. Dennison Univ., Vol. IV, Pt. I, pp. 97-123. Granville, 1888.) This paper is devoted to the general conclusions in regard to the Waverly Group of Ohio. In the addenda the following new species are described:

<i>Leiopteria</i> ? <i>newberryi</i> .	<i>Solenomya</i> <i>cuyahogensis</i> .
<i>Avicula</i> ? <i>recta</i> .	<i>Schizodus</i> <i>harlanensis</i> .

Reviewed in Am. Jour. Sci., (3), xxxvii, 317-318, 1889.

Herrick, C. L. Geology of Licking County, Ohio, Part IV, List of Waverly Fossils, Continued. (Bul. Sci. Lab. Dennison Univ., Vol. IV, Part I, pp. 11-60, 2 plates. Granville, 1888.) The new species are:

<i>Lingula</i> <i>atra</i> .	<i>Leiopteria</i> <i>nasutus</i> .
<i>Lingula</i> <i>gannensis</i> .	<i>Avicula</i> ? <i>subspatulata</i> .
<i>Lingula</i> <i>meeki</i> .	<i>Edmondia</i> <i>sulcifera</i> .
<i>Lingula</i> <i>waverleyensis</i> .	<i>Lyriopecten</i> <i>nodocostatus</i> .
<i>Productus</i> <i>varicostatus</i> .	<i>Pteriopecten</i> ? <i>ashlandensis</i> .
<i>Productus</i> <i>annosus</i> .	<i>Grammysia</i> <i>ovata</i> .
<i>Productus</i> <i>rushvillensis</i> .	<i>Grammysia</i> <i>familica</i> .
<i>Productus</i> <i>nodocostatus</i> .	<i>Schizodus</i> <i>chemungensis</i> , var. <i>prolongatus</i> .
<i>Athyris</i> <i>ashlandensis</i> .	<i>Macrodon</i> <i>newarkensis</i> .
<i>Rhynchospira</i> ? <i>ashlandensis</i> .	<i>Macrodon</i> <i>striato-costatus</i> .
<i>Spirifera</i> (<i>Martinia</i>) <i>tenuispinatus</i> .	<i>Cypriocardinia</i> (<i>Microdon</i>) <i>scitula</i> .
<i>Spirifer</i> <i>deltoidens</i> .	<i>Oracardia</i> gen. nov.
<i>Allorisma</i> <i>cuyahoga</i> .	<i>Oracardia</i> <i>ornata</i> .
<i>Allorisma</i> <i>consanguinatus</i> .	<i>Oracardia</i> <i>cornuta</i> .

Herrick, C. L.—Continued.

Conocardium alternistriatum.	Phillipsia (?) consors.
Palaeoneilo consimilis.	Proetus minutus.
Palaeoneilo ignota.	Phaethonides occidentalis.
Palaeoneilo (Nucula) curta.	Phaethonides spinosus.
Flemingia stultus.	Phaethonides (?) immaturus.
Conularia gracilis.	Cytheria ohioensis.
Phillipsia serraticaudata.	

Reviewed in Am. Jour. Sci., (3), xxxvii, 317, 318, 1889.

Herrick, C. L. Waverly Group in Ohio. (American Geologist, Vol. III, pp. 94-99, 3 plates. Minneapolis. 1889.) Lists and figures of typical forms.

Hesperornis, Anatomy. F. A. Lucas. (Proc. Biol. Soc. Wash., vi, March. 1891.)

Heterocrinus Subcrassus, Crinoid. D. T. D. Dyche. (Science, xx, 66. 1892.)

Hicks and Salter, Classification of, How is Cambrian Divided? G. F. Matthew. (American Geologist, vi, 139, 140. 1889.) Numerous references to fossils.

Hilgard, E. W. Equivalence in Time of American Marine and Intracontinental Tertiary. (Science, Vol. ix, No. 228, pp. 535, 536. 1889.) Incidental references.

Hill, Robert T. Check-List of Invertebrate Fossils from the Cretaceous Formations of Texas. (University of Texas, School of Geology, Circulars, 16 pp. Austin, 1889.) Notes on the geographical and geological distribution and short references to bibliography.

Hill, Robert T. Comanche Series of Texas-Arkansas Region. (Bul. Geol. Soc. America, Vol. II, pp. 503-528. Rochester. 1891.) Reference to fossils. Reviewed in American Geologist, viii, 258, 1891.

Hill, Robert T. Events in North American Cretaceous History Illustrated in the Arkansas-Texas Division of the Southwestern Region of the United States. (Am. Jour. Sci., (3), Vol. xxxvii, pp. 282-289. New Haven, 1889.) Incidental references to the Cretaceous fauna of this region.

Hill, Robert T. Foraminiferal Origin of Certain Cretaceous Limestones and the Sequence of Sediments in North American Cretaceous. (American Geologist, Vol. VI, pp. 174-177. Minneapolis. 1889.) Description of certain Texas Cretaceous rocks made up of *Tinoporus texana*.

Hill, Robert T. Geology of the Southwest. (American Geologist, Vol. VII, pp. 366-370. Minneapolis, 1891.) Contains brief notes on the foraminifera of the Texas region.

Hill, Robert T. *Macraster Texanus*. (American Naturalist, Vol. XXIII, p. 168. Philadelphia, 1889.) A brief note on the species, with reference to a description of it by Ferdinand Roemer in Neues Jahrbuch, I. Band, drittes Heft.

Hill, Robert T. Neozoic Geology of Southwestern Arkansas. (Geol. Sur. Arkansas, Ann. Rep. 1888, Vol. II, pp. 127-152. Little Rock, 1889.) In the chapter on the paleontology of Trinity division the following species are described and figured:

Ammonites walcotti sp. nov.	Arca gratiota, sp. nov.
Pleurocera strombiformis, Schloth.	Arca parya, var. missouriensis, var. nov.
Vivipara cossatotensis, sp. nov.	Cyrena arkansensis, sp. nov.
Buccinapsis? conradi, sp. nov.	Corbicula pikensis, sp. nov.
Ostrea franklini, Coguand.	Cardium? sevierensis, sp. nov.

Reviewed in Am. Geologist, vi, 243-246, 1888; also Am. Jour. Sci., (3), xxxviii, 413, 414, 1889.

Hill, Robert T. Paleontology of Cretaceous Formations of Texas, Part I. (University of Texas, School of Geology, Circulars, 8 pp. Austin, 1889.) The following species from the Shoal Creek (Vola) limestone series described:

Pecten (Vola) roemeri, sp. nov.

Peterocera shumardi, sp. nov.

Reviewed in Neues Jahrbuch, 300, 1890.

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<i>Temnochilus forbesianus</i> (McC.).	<i>Tainoceras cavatum</i> sp. nov.
<i>Temnochilus latus</i> M. & W.	<i>Domatoceras</i> gen. nov.
<i>Temnochilus depressus</i> sp. nov.	<i>Domatoceras multicaudatum</i> sp. nov.
<i>Temnochilus crassus</i> sp. nov.	<i>Asymptoceras newloni</i> sp. nov.
<i>Metacoceras cavatiformis</i> sp. nov.	<i>Phacoceras dumblei</i> sp. nov.
<i>Metacoceras dubium</i> sp. nov.	<i>Ephoppceras divisium</i> W. & St. J.
<i>Metacoceras walcotti</i> sp. nov.	<i>Endolobus gibbosus</i> sp. nov.
<i>Metacoceras hayi</i> sp. nov.	<i>Gastrioceras compressum</i> sp. nov.

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- Coal Measure and Subcarboniferous Rocks of Indiana, Missouri, and Iowa, Echinodermata. S. A. Miller and W. F. E. Gurley. (Indiana Dept. Geol. and Nat. Hist., Sixteenth Ann. Rep. State Geologist, for 1888, 327-373. 1889.)
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- Cretaceous in Iowa, Eastern Extension. C. R. Keyes. (Proc. Iowa Acad. Sci., I, Pt. II, 21. 1892.)
- Crinoids and Blastoids from Kinderhook Group of Lower Carboniferous Rocks at Le Grand, Iowa. Charles Wachsmuth and Frank Springer. (Geol. Sur. Illinois, VIII, 155-205. 1890.) A number of species described and figured as new.
- Cuboides Zone and Its Fauna; A discussion of Methods of Correlation. H. S. Williams. (Bul. Geol. Soc. America, I, 481-500. 1890.)
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- Devonian Fossils from Iowa. C. R. Keyes. (Proc. Acad. Nat. Sci., Phila., 1888, 247-249. 1888.)
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- Keokuk Beds and their Contained Fossils in Vicinity of Keokuk, Iowa. C. H. Gordon. (Proc. Iowa Acad. Sci., I, 98-100. 1890.) Abstract.
- Keokuk Group of Mississippi Valley. C. S. Beachler. (American Geologist, x, 88-96. 1892.) Incidental references to fossils.
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- Loess Fossils, Distribution. C. R. Keyes. (American Geologist, IV, 109-121. 1889.)
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- Magnesian, Lower, Limestone from Northeastern Iowa, Collection of Fossils. S. Calvin. (Bul. Lab. Nat. Hist. State Univ. Iowa, I, No. 2, 189-193. 1892.)
- Maquoketa Shales and their Correlation with Cincinnati Group of Southwestern Ohio. J. F. James. (American Geologist, v, 335-236. 1890.)
- Maquoketa Shales in Iowa. J. F. James. (Proc. Am. As. Adv. Sci., XXXVIII, 250, 251. 1890.) Reference made to various species.
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- Mollusca of Iowa, Annotated Catalogue. C. R. Keyes. (Bul. Essex Inst., XX, 1889.)
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- Paleontology of New York. J. Hall and J. M. Clarke. (Nat. Hist. New York, Pal., VII, 236 pp. 1888.)
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- Platyceras, Attachment to Paleocrinoidea; and its Effects in modifying the form of the Shell. C. R. Keyes. (Proc. Am. Philosophical Soc., XXV, 231-243. 1889.)

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- Platyceras, Sedentary Habits. C. R. Keyes. (Am. Jour. Sci., (3), XXXVI, 269-272. 1888.)
- Problems in Muscatine County, Iowa. S. Calvin. (Bul. Lab. Nat. Hist. State Univ. Iowa, I, No. 1, 7-18. 1888.) Incidental references to fossils.
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- Reconnaissance, Geological, in Buchanan County, Iowa. S. Calvin. (Bul. Lab. Nat. Hist. State Univ., Iowa, II, No. 2, 177-189. 1892.) Incidental references to fossils.
- Revision and Monograph of Genus *Chonophyllum*. W. H. Sherzer. (Bul. Geol. Soc. America, III, 253-282. 1892.)
- Rockford Shales, Notes. C. L. Webster. (American Naturalist, XXII, 444-446. 1888.) Incidental references to fossils.
- Rockford Shales of Iowa, Fossils. C. L. Webster. (American Naturalist, XXII, 1013-1018. 1888.) Description of new species.
- Spirifera Parryana, Hall, Synonymy, Characters and Distribution. S. Calvin. (Bul. Lab. Nat. Hist. State Univ. Iowa, I, No. 2, 19-28. 1888.)
- Spirifera from Devonian Strata of Iowa. S. Calvin. (Bul. Lab. Nat. Hist. State Univ. Iowa, I, No. 2, 165-167. 1892.)
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- Syringothyris, Winchell, and its American Species. C. Schuchert. (Ninth Ann. Rep. State Geologist, New York, for 1889, 28-38. 1890.)
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- Tubicular Annelida, Genus and Species. S. Calvin. (American Geologist, I, 24-28. 1888.)
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- Ventral Structure of *Taxocrinus* and *Haplocrinus* and Consequent Modification in Classification of Crinoidea. C. Wachsmuth and F. Springer. (Proc. Acad. Nat. Sci., Phila., XL, 337-363. 1888.)
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- James, Joseph F.** Fauna of Lower Cambrian or Olenelus Zone. (American Geologist, Vol. VIII, pp. 82-86. Minneapolis, 1891.) A full critical review of an article by C. D. Walcott, bearing the same title, published in the Tenth Annual Report of the U. S. G. S.
- James, Joseph F.** Illustrations of the Fauna of the St. John Group, No. V; by G. F. Matthew. Review. (Am. Jour. Sci., (3), Vol. XLII, pp. 73-75. New Haven, 1891.) A full and careful review of a recent paper read before the Royal Society of Canada, May, 1890.
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- James, Joseph F.** *Modiolopsis Oblonga*. (American Geologist, Vol. VI, p. 67. Minneapolis, 1890.) Note on the preoccupation of the name.

- James, Joseph F.** Monticulipora a Coral and not a Polyzoan. (American Geologist, Vol. I, pp. 386-392. Minneapolis, 1888.) Sets forth arguments supporting the belief that the organisms in question have been wrongly referred to Bryozoans heretofore.
- James, Joseph F.** Monticuliporid Corals of the Cincinnati Group, with a Critical Revision of the Species. (Proc. Am. As. Adv. Sci., Vol. xxxvi, p. 223. Salem, 1888.) Abstract of a paper published in the Jour. Cincinnati Soc. Nat. Hist.
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- James, Joseph F.** Section of the Maquoketa Shales in Iowa. (Proc. Am. As. Adv. Sci., Vol. xxxvii, pp. 250, 251. Salem, 1890.) Abstract. A detailed section, with lists of the fossils found.
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- James, Joseph F.** Studies in Problematic Organisms—The Genus Scolithus. (Bul. Geol. Soc. America, Vol. III, pp. 32-44. 1892.)
- James, Joseph F.** Variation, with Special Reference to Certain Paleozoic Genera. (American Naturalist, Vol. xxiii, pp. 1071-1087. Philadelphia, 1889.) The author begins by giving an account of certain examples showing variations of species. Calls attention to the excessive multiplication of species in paleontology. Special reference is made to certain Silurian fossils of southwestern Ohio.
- James, Joseph F., U. P. James and.** Monticuliporid Corals of Cincinnati Group with a Critical Revision of the Species. (Jour. Cin. Soc. Nat. Hist., x-xi, 118-141, 158-184, 15-48. 1887-1888.)
- James, U. P., and Joseph F. James.** Monticuliporid Corals of Cincinnati Group, with a Critical Revision of the Species. (Jour. Cin. Soc. Nat. Hist., Vols. x-xi, pp. 118-141, 158-184, 15-48, 2 plates. Cincinnati, 1887-1888.) Of the thirty-four genera of the monticuliporid corals but two genera and three subgenera are recognized. These are Monticulipora, Dekayia, Conestellaria, Fistulipora and Ceramopora. Sixty species of Monticulipora and four of Ceramopora are recognized and described. *Monticulipora hospitalis* var. *neglecta* is regarded as new. Reviewed in Am. Geologist, I, 39-60, 1888; also Am. Naturalist, xxii, 165, 166, 1888.
- James, U. P.,** Writings. J. F. James. (American Geologist, III, 285-287. 1889.)
- Jaekel, O.** Carboniferous Echinodermata of Mississippi Valley; by C. R. Keyes: Am. Jour. Sci., (3), 1889. Review. (Neues Jahrbuch, 185, 186. 1892.)
- Jaekel, O.** Devonian Fishes of Scaumenca Bay and Campbelltown in Canada; by R. H. Traquair: Geological Magazine, viii, 1890. Review. (Neues Jahrbuch, pp. 438, 439. 1890.)
- Jaekel, O.** Fossil Fish Spines named Cœlorhynchus, Agassiz; by A. Smith Woodward: Ann. Mag. Nat. Hist., 1888. Review. (Neues Jahrbuch, p. 155. 1891.)
- Johnson, C. W., H. A. Pilsbry and.** Catalogue of Fissurellidæ of United States. (The Nautilus, v, 102-107. 1892.)
- Johnson, Lawrence C.** "Grand Gulf" formation of the Gulf States. (Am. Jour. Sci., (3), Vol. xxxviii, pp. 213-216. New Haven, 1889.) Incidental references to fossils contained in the formation.
- Jones, T. Rupert.** Contributions to Canadian Micro-Paleontology. (Geol. and Nat. Hist. Sur. Canada, Micro-Paleontology, Part III, pp. 59-100, 4 plates. Montreal, 1891.) Contains descriptions of the following Ostracods from the Cambro-Silurian and Devonian rocks of Canada:
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|------------------------------|---|
| Aparchites mundulus sp. nov. | Primitia mundula, var. effusa var. nov. |
| Aparchites tyrrelli sp. nov. | nov. |
| Primitia logani (Jones). | Primitia mundula, var. incisa var. nov. |

Jones, T. Rupert—Continued.

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| <i>Beyrichia clavigera</i> sp. nov. | <i>Leperditia balthica</i> , var. <i>guelphica</i> var. nov. |
| <i>Beyrichia clavigera</i> , var. <i>clavifraya</i> var. nov. sp. | <i>Leperditia hisingeri</i> Schmidt. |
| <i>Beyrichia quadrifida</i> sp. nov. | <i>Leperditia hingeri</i> , var. <i>fabulina</i> var. nov. |
| <i>Isochilina ottawa</i> , var. <i>intermedia</i> var. nov. | <i>Leperditia hingeri</i> , var. <i>gibbera</i> var. nov. |
| <i>Isochilina whiteavesi</i> sp. nov. | <i>Leperditia hinguri</i> , var. <i>egena</i> var. nov. |
| <i>Isochilina amii</i> sp. nov. | <i>Leperditia</i> 'alta' (?) Hall. |
| <i>Isochilina labellosa</i> sp. nov. | <i>Leperditia phaseolus</i> (Hisinger). |
| <i>Leperditia balthica</i> , var. <i>primæva</i> var. nov. | <i>Leperditia phaseolus</i> , var. <i>guelphica</i> var. nov. |
| <i>Leperditia</i> sp. | <i>Leperditia marginata</i> Schmidt. |
| <i>Leperditia</i> (?) <i>obscura</i> sp. nov. | <i>Leperditia whiteavesi</i> sp. nov. |
| <i>Primitia mundula</i> Jones. | <i>Leperditia cæca</i> sp. nov. |
| <i>Beyrichia æquilatera</i> Hall. | <i>Leperditia selwynii</i> sp. nov. |
| <i>Beyrichia tuberculata</i> Kloeden. | <i>Aparchies mitis</i> sp. nov. |
| <i>Beyrichia tuberculata</i> , var. <i>pustulosa</i> (Hall). | <i>Primitia scitula</i> sp. nov. |
| <i>Beyrichia tuberculata</i> , var. <i>strictispiralis</i> var. nov. | <i>Isochilina bellula</i> sp. nov. |
| <i>Beyrichia tuberculata</i> , var. <i>noetlingi</i> Reuter. | <i>Isochilina dawsoni</i> sp. nov. |
| <i>Isochilina grandis</i> , var. <i>latimarginata</i> var. nov. | <i>Elpe tyrellii</i> sp. nov. |
| | <i>Leperditia</i> (?) <i>exiguus</i> nov. |
| | <i>Ulrichia conradi</i> Jones. |
| | <i>Primitiopsis punctulifera</i> (Hall). |
| | <i>Kirkbya</i> (?) <i>walcotti</i> (Jones). |

Reviewed in Neues Jahrbuch, 581, 582, 1892.

Jones, T. Rupert. Devonian and Silurian Ostracoda from North America, France and the Bosphorus. (Quart. Jour. Geol. Soc., London, Vol. XLIV, pp. 534-556, 2 plates. London, 1890.) The new American species are:

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|---------------------------------|---|
| <i>Primitia clarkei</i> . | <i>R. hindei</i> . |
| <i>P</i> (?) <i>walcotti</i> . | <i>Strepula plantaria</i> . |
| <i>Beyrichia sub-quadrata</i> . | <i>Octonaria linnarissoni</i> . |
| <i>B. kolmoclini</i> . | <i>Moorea kirbyi</i> . |
| <i>Rollia bilobata</i> . | <i>Ulrichia condari</i> , gen. et. sp. nov. |

Jones, T. Rupert. Paleozoic Bivalve Entomostraca: North American Species. (Ann. and Mag. Nat. Hist., Vol. III, pp. 154. 1889.) *Primitia scaphoides* described as new. Reviewed in Ottawa Naturalist, III, No. 2, 1889.

Jones, T. Rupert. Paleozoic Ostracoda from North America, Wales and Ireland. (Quart. Jour. Geol. Soc. London, Vol. XLVI, pp. 2-31, 4 plates London, 1890.)

The new species are:

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| <i>Primitia ulrichi</i> . | <i>B. clarki</i> . |
| <i>P. Whitfieldi</i> . | <i>B. hamiltonensis</i> . |
| <i>Entomis rhomboidalis</i> . | <i>Isochilina</i> 'lineata'. |
| <i>Strepula spinoidalis</i> . | <i>I.</i> (?) <i>fabacea</i> . |
| <i>Beyrichia hallii</i> . | <i>Leperditia claypoli</i> . |

A number of American species are referred to other genera than that of their authors. Reviewed in Neues Jahrbuch, 334, 335. 1891.

Jones, T. Rupert. Paleozoic Ostracoda from Pennsylvania, U. S. (American Geologist, Vol. VI, pp. 337-342. Minneapolis, 1889.) The following species are described and figured:

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| <i>Primitia mundala</i> . | <i>Primitia pennsylvanica</i> . |
| <i>Klœdenia simplex</i> . | <i>Bathycypris oviformis</i> . |
| <i>Bythocypris favulosa</i> . | <i>Leperditia subquarta</i> . |
| <i>Bollia unglata</i> . | <i>Klœdenia pennsylvanica</i> . |

Reviewed in Neues Jahrbuch, 335, 1891.

Jones, T. Rupert, and J. W. Kirby. Ostracoda from Mabou Coal Field of Nova Scotia. (Geological Magazine, Dec. iii, Vol. VI, pp. 269-271. London, 1889.)

Following are described:

Carbonia fabulina.	Fish scales and Anthracomyas also con-
Carbonia fabulina, var. altilis.	sidered.
Carbonia (?) bairdioides.	

Reviewed in Ottawa Naturalist, III, No. 3, 1889.

Jurassic.

Aucella, with Special Reference to its Occurrence in California. C. A. White. (U. S. Geol. Sur., Mon. XII, 226-233. 1888.)

Biological and Geological Significance of Closely Similar Fossil Forms. C. A. White. (Proc. Am. As. Adv. Sci., XXXIX, 239-243. 1891.)

Classification of Dyas, Trias, and Jura in Northwest Texas. J. Marcon. (American Geologist, x, 369-377. 1892.) Allusions to various species of fossils.

Dinosauria, New American. O. C. Marsh. (Am. Jour. Sci., (3), XXXVIII, 331-336. 1889.)

Dinosaurian Reptiles, Description. O. C. Marsh. (Am. Jour. Sci., (3), XXXIX, 81-86. 1890.)

Distinctive Characters of Order Hallopoda. O. C. Marsh. (Am. Jour. Sci., (3), XXXIX, 415-417. 1890.)

Faunas, Relations of American and European. J. W. Gregory. (Bul. Geol. Soc. America, III, 101-108. 1892.)

Footprints from Jura-Trias of New Jersey. J. Eyerman. (Proc. Acad. Nat. Sci., Phila., XLI, 32, 33. 1889.)

Geology of Nicaragua. J. Crawford. (Proc. Am. As. Adv. Sci., XL, 261-270. 1892.) Various species mentioned.

Goniopholis in Jurassic of Colorado. E. D. Cope. (American Naturalist, XXII, 1106, 1107. 1888.)

Gryphæa Pitcheri, Morton, Original Locality. J. Marcon. (American Geologist, III, 188-193. 1889.)

Jura, Necomian and Chalk of Arkansas. J. Marcon. (American Geologist, IV, 357-367. 1889.) Various species of fossils referred to.

"Mesozoic Mammalia," Reply to Professor Marsh's Note. H. F. Osborn. (Proc. Am. As. Adv. Sci., XL, 290. 1892.) Abstract.

North American Mesozoic. C. A. White. (Proc. Am. As. Adv. Sci., XXXVIII, 205-226. 1890.)

North American Mesozoic. C. A. White. (Science, XIV, 160-166. 1889.)

Restoration of Ciasaurus and Ceratosaurus. O. C. Marsh. (Am. Jour. Sci., (3), XLIV, 343-349. 1892.)

Restoration of Stegosaurus. O. C. Marsh. (Am. Jour. Sci., (3), XLII, 189-191. 1891.)

Sauropoda and other New Dinosaurs from Potomac Formation. O. C. Marsh. (Am. Jour. Sci., (3), XXXV, 89-94. 1888.) Several forms described as new.

Jura, Necomian and Chalk of Arkansas. J. Marcon. (American Geologist, IV, 257-267. 1889.) Various species of fossils referred to.

Jura in Northwest Texas, Classification of Dyas, Trias. J. Marcon. (American Geologist, x, 369-377. 1892.) Allusions to various species of fossils.

Kansas.

Beiträge zur Kenntniss der Gattung Protosphyæna, Leidy. J. Felix. (Zeitsch. der Deut. geol. Gesellsch., XLII. Band, Heft 2, 278-303. 1890.)

Carboniferous Cephalopods. A. Hyatt. (Texas Geol. Sur., Second Ann. Rept., 327-356. 1890.)

Characters of Ceratopsidæ, with Notice of New Cretaceous Dinosaurs. O. C. Marsh. (Am. Jour. Sci., (3), XXXIX, 418-426. 1890.)

Kansas—Continued.

- Cheyenne Sandstone and Necomian Shales of Kansas. F. W. Cragin. (*American Geologist*, vi, 233-238. 1890.) Incidental references to fossils.
- Cheyenne Sandstone and Necomian Shales. F. W. Cragin. (*American Geologist*, vii, 23-33, and 179-181. 1891.) Occurrence of characteristic fossils noted.
- Cretaceous Echinoidea of North America, Revision. W. B. Clark. (Johns Hopkins Univ. Circulars, No. 87, 75-77. 1891.)
- Geological Notes on Region South of the Great Bend of the Arkansas. F. W. Cragin. (Bul. Washburn College Lab. Nat. Hist., ii, 33-37. 1889.) Incidental references to fossils.
- Geological Reconnaissance in Southwestern Kansas. R. Hay. (U. S. Geol. Sur., Bul. No. 57, 49 pp. 1890.) Incidental references to fossils.
- Interesting Food Habit of the Pleisiosaurs. S. W. Williston. (Trans. Kansas Acad. Sci., xiii, 121, 122. 1893.)
- Llama Remains from Colorado and Kansas. F. W. Cragin. (*American Geologist*, ix, 257-260. 1892.)
- Mammoth Remains in Franklin County, Kansas. O. C. Charlton. (Trans. Kansas Acad. Sci., xii, 74. 1890.)
- Megalonyx Beds in Kansas. J. A. Udden. (*American Geologist*, vii, 340-345. 1891.)
- Mososaurs. S. W. Williston. (*Science*, xviii, 345. 1891.)
- Mososaurs, Part I, Clidastes. S. W. Williston and C. E. Case. (Kansas Univ. Quart., i, 15-32. 1892.)
- New or Little Known Saurian from the Benton of Kansas. F. W. Cragin. (*American Naturalist*, ii, 404-407. 1888.)
- Nickel Mines, Logan County. F. H. Show. (Trans. Kansas Acad. Sci., xi, 39-42. 1880.) Fossils mentioned.
- Niobrara Cretaceous of Western Kansas. S. W. Williston. (Trans. Kansas Acad. Sci., xiii, 107-111. 1893.)
- Observations on Genus *Trimacromerum*. F. W. Cragin. (*American Geologist*, viii, 171-174. 1891.)
- Permo-Carboniferous of Greenwood and Butler County, Kansas. I. C. Wooster. (*American Geologist*, vi, 9-18. 1890.)
- Plains, Paleontology. F. W. Cragin. (Bul. Washburn College Lab. Nat. Hist., ii, 65-68. 1889.)
- Pleisiosaur from Niobrara Cretaceous of Kansas. S. W. Williston. (Kansas Acad. Sci., xii, 1-5. 1890.)
- Pteranodon, Skull and Hind Extremity. S. W. Williston. (*American Naturalist*, xxv, 1124-1126. 1891.)
- Pterodactyla, Kansas. S. W. Williston. (Kansas Univ. Quart., i, 1-12. 1892.)
- Species of Fossil Cephalopods. R. Hay. (Trans. Kansas Acad. Sci., xiii, 27-47. 1893.)
- Structure of Kansas Chalk. S. W. Williston. (Trans. Kansas Acad. Sci., xii, 100. 1890.) Various species of fossils referred to.
- Structure of Pleisiosaurian Skull. S. W. Williston. (*Science*, xvi, 262. 1890.)
- Tiger and Loop Fork Tertiary of Kansas. F. W. Cragin. (*Science*, xix, 17. 1892.)
- Trilobites, Genera and Species of North American Carboniferous. A. W. Vodges. (Ann. N. Y. Acad. Sci., iv, 69-105. 1888.)
- Ueber einige fossile Knochenfische aus der mittleren Kreide von Kansas. A. R. Croop. (*Paläontographica*, xxxix, 107. 1892.)
- Karsch, F.** Fossil Cockroaches from Older American Rocks; by S. H. Scudder: Proc. Acad. Nat. Sci., Phila., 1885. Review. (*Neues Jahrbuch*, pp. 340, 341. 1888.)
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- Kayser, E.** Cambrian Faunas of Cape Breton and Newfoundland; by G. F. Mathew. Review. (Neues Jahrbuch, 313-316. 1888.)
- Kayser, E.** *Coronura Aspectens*, Con., *The Asaphus Diurus*, Green; by J. M. Clarke: Ann. Rep. State Geol. New York, 1890. Review. (Neues Jahrbuch, 151. 1892.)
- Kayser, E.** Devonian Fossils; by R. Jones: Geological Magazine, 385, 1889. Review. (Neues Jahrbuch, 465. 1891.)
- Kayser, E.** Eight New Species of Fossils from the Cambro-Silurian Rocks of Manitoba; by J. F. Whiteaves: Trans. Roy. Soc. Can., VII, 1889. Review. (Neues Jahrbuch, 147. 1890.)
- Kayser, E.** Fauna of Upper Taconic of Emmons in Washington County, New York; by C. D. Walcott: Am. Jour. Sci., XXIV. Review. (Neues Jahrbuch, 461. 1888.)
- Kayser, E.** Fossils from Devonian Beds of Manitoba, Canada; by J. F. Whiteaves: Trans. Roy. Soc. Canada, 1890. Review. (Neues Jahrbuch, 561-562. 1892.)
- Kayser, E.** Fossils from Hamilton Formation of Ontario; by J. F. Whiteaves: Contrib. to Can. Paleon., I, 1889. Review. (Neues Jahrbuch, 147. 1890.)
- Kayser, E.** Geological Survey of the State of New York, Paleontology VII, Supplement to V, II; by J. Hall and John M. Clarke. Review. (Neues Jahrbuch, 186-190. 1889.)
- Kayser, E.** Illustrations of Fauna of St. John Group; by G. F. Mathew: Trans. Roy. Soc. Canada, 1887. Review. (Neues Jahrbuch, 309. 1889.)
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- Kayser, E.** *Leptaniscia*, a New Genus of Brachiopoda from the Lower Helderberg Group; by C. E. Beecher: Am. Jour. Sci., (3), XL. Review. (Neues Jahrbuch, 465. 1891.)
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- Kayser, E.** *Newberria*, a New Genus of Brachiopoda; by James Hall: Tenth Ann. Rep. State Geol. New York, 1891. Review. (Neues Jahrbuch, 155, 156. 1892.)
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- Keokuk Beds** and their Contained Fossils in the Vicinity of Keokuk, Iowa. C. H. Gordon. (Proc. Iowa Acad. Sci., I, 98-100. 1890.) Abstract.
- Keokuk Group** at Crawfordsville, Indiana. C. S. Beachler. (American Geologist, II, 407-412. 1888.) Mention made of different species.

Keokuk Group of Mississippi Valley. C. S. Beachler. (American Geologist, x, 88-96. 1892.) Incidental references to fossils.

Keokuk Species of Agaricocrinus. C. H. Gordon. (Proc. Iowa Acad. Sci., i, 100, 101. 1890.) Abstract.

Keokuk Species of Agaricocrinus, Observations. C. H. Gordon. (American Geologist, v, 257-261. 1893.)

Kentucky.

Bryozoa, Paleozoic. E. O. Ulrich. (Geol. Sur. Illinois, viii, 283-688. 1890.) Descriptions of new species.

Cincinnati Group, Manual of the Paleontology. J. F. James. (Jour. Cincinnati Soc. Nat. Hist., Pt. I, xiv, 45-72; Pt. II, xiv, 149-163; Pt. III, xv, 88-100; Pt. IV, xv, 144-159. 1891, 1892.)

Fishes, Paleozoic of North America. J. S. Newberry. (U. S. Geol. Sur., Mon. xvi, 340 pp. 1889.)

Fossils, Species and New Structural Parts. S. A. Miller and C. Faber. (Jour. Cincinnati Soc. Nat. Hist., xv. 1892.)

Geology and Paleontology, North American. S. A. Miller. (One volume, 644 pp. Cincinnati, 1890.) New species described.

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Lamellibranchiata, Silurian, Chiefly from Minnesota Rocks. E. O. Ulrich. (Geol. and Nat. Hist. Sur. Minnesota, Nineteenth Ann. Rep., 211-248. 1892.)

Lingulasma: New Genus and Eight New Species of Lingula and Trematis. E. O. Ulrich. (American Geologist, iii, 377-391. 1889.)

Lingulasma: New Genus and Eight New Species of Lingula and Trematis. E. O. Ulrich. (American Geologist, iv, 21-25. 1889.)

Micro-Paleontology of Cambro-Silurian Rocks of Canada. A. H. Foord. (Geol. and Nat. Hist. Sur. Canada, Contrib. to Micro-Pal., 26 pp. 1893.)

Niagara Group, Two New Genera and Eight New Species of Camerate Crinoids. C. Wachsmuth and F. Springer. (American Geologist, x, 135-144. 1892.)

Ostracoda, Lower Silurian, No. 1. E. O. Ulrich. (American Geologist, x, 263-270. 1892.)

Paleontology of Indiana. S. A. Miller. (Geol. Sur. Indiana, 18th Ann. Rep., Paleontology, 79 pp. 1892.) Advance sheets.

Paleontology of New York. J. Hall. (Nat. Hist. New York, Pal., v, Pt. II, 278 pp. 1888.)

Paleontology of New York. J. Hall and J. M. Clarke. (Nat. Hist. New York, Pal., vii, 236 pp. 1888.)

Revision and Monograph of Genus Chonophyllum. W. H. Sherzer. (Bul. Geol. Soc. America, iii, 253-282. 1892.)

Sponges, New Lower Silurian. E. O. Ulrich. (American Geologist, iii, 233-248. 1889.)

Sponges of Devonian and Carboniferous Systems. E. O. Ulrich. (Geol. Sur. Illinois, viii, 243-251. 1890.) Description of new species.

Trilobites, Genera and Species of North American Carboniferous. A. W. Vogdes. (Ann. N. Y. Acad. Sci., iv, 69-105. 1888.)

Kentucky. Fossil shells from Silurian and Devonian Rocks of Kentucky: Geol. Sur. Kentucky. Review. (American Geologist, Vol. v, pp. 107, 108. Minneapolis, 1890.) A short notice of the work.

Keyes, Charles R. Age of Certain Sandstones near Iowa City. (Proc. Iowa Acad. Sci., Vol. i, Pt. II, p. 25. Des Moines, 1892.) Owing to the recent discovery of fossils in the sandstones near Iowa City the suggestion is made that their age may be Kinderhook (Lower Carboniferous) instead of Upper Coal Measures, as has been heretofore regarded.

Keyes, Charles R. American Species of Polyphemopsis. (Proc. Acad. Nat. Sci., Phila., pp. 299-302. Philadelphia, 1889.) The American species referred to this genus are critically considered and their relations to other genera pointed out. The generic name is not regarded as applicable to any American gastropods.

Keyes, Charles R. Annotated Catalogue of the Mollusca of Iowa. (Bulletin Essex Institute, Vol. xx. Salem, 1889.) Numerous references to, and notes on, Pleistocene species.

Keyes, Charles R. Attachment of Platyceras to Fossil Crinoidea. (American Naturalist, Vol. xxii, pp. 924, 925. Philadelphia, 1888.) A brief summary of observations.

Keyes, Charles R. Attachment of Platyceras to Palaeocrinoidea; and its Effects in Modifying the Form of the Shell. (Proc. Am. Philosophical Soc., Vol. xxv, pp. 231-243, 1 plate. Philadelphia, 1888.) A historical summary of the occurrence of Platyceras on crinoids, with detailed descriptions of numerous examples. The following species are figured and described as new:

Platyceras capax.

Platyceras latum.

Platyceras obliquum.

Platyceras formosum.

Reviewed in Am. Geologist, III, 148-149, 1889; also in Neues Jahrbuch, 182, 1891.

Keyes, Charles R. Carboniferous Echinodermata of the Mississippi Basin. (Am. Jour. Sci., (3), Vol. xxxviii, pp. 186-193. New Haven, 1889.) A description of the structural features of the leading groups of crinoids, with an account of their evolution. A tabulated list showing the stratigraphical range of the leading genera is also given. Reviewed in Am. Naturalist, xxiv, 767, 1890; also in Neues Jahrbuch, 185, 186, 1892.

Keyes, Charles R. Certain Forms of Straparollus from Southeastern Iowa. (American Geologist, Vol. v, pp. 193-197, 1 plate. Minneapolis, 1890.) The various species considered and their relations described. The following forms are figured:

Straparollus obtusus.

Straparollus macromphalus.

Straparollus roberti.

Straparollus barrisi.

Straparollus latus.

K[eyes], C[harles] R. Classification of Crinoidea. Review. (American Naturalist, Vol. xxiii, p. 153. Philadelphia, 1889.) A review of the discovery of the ventral structure of Taxocrinus and Halpocrinus and Consequent Modifications in the classification of Crinoidea; by Charles Wachsmuth, and Frank Springer in the Proceedings of the Academy of Natural Science of Philadelphia, for November 27, 1888.

Keyes, Charles R. Classification of Lower Carboniferous Rocks of Mississippi Valley. (Pamphlet, Washington: Judd & Detweiller, printers, pp. 1-24, 1 plate. 1892.) Section and details of the Lower Carboniferous rocks along the Mississippi River described and list of fossils given.

Keyes, Charles R. Coal Measures of Central Iowa; and Particularly in the Vicinity of Des Moines. (American Geologist, Vol. ii, pp. 396-404. Minneapolis, 1888.) A sketch, accompanied by sections of the geological formations near Des Moines, with references to the fossils found in the middle Coal Measures. Incidental references to the eastern extension of the Cretaceous in central Iowa.

Keyes, Charles R. Contribution to the Fauna of the Lower Coal Measures of Central Iowa. (Proc. Iowa Acad. Sci., Vol. i, Pt. ii, pp. 22, 23. Des Moines, 1892.) A preliminary statement in regard to the fossils of central Iowa. The following three species described:

Pleurotomaria modesta.

Chonetes levis.

Soleniscus humilis.

[**Keyes, Charles R.**] *Crotalocrinus*; Its Structure and Zoological Position; by Charles Wachsmuth and Frank Springer: Proc. Acad. Nat. Sci., Philadelphia, Nov. 27, 1888. Review. (American Geologist, Vol. III, p. 201. Minneapolis, 1889.)

Keyes, Charles R. Description of two New Fossils from the Iowa Devonian. (Proc. Acad. Nat. Sci., Phila., 1888, pp. 247-249, 1 plate. Philadelphia, 1888.) The following species described as new and figured:

Cyrtoceras opimus.

Conocardium altum.

K[eyes], C[hables] R. Die Stämme des Thierreichs, von M. Neumayr, Erster Band: Wirbellose Thiere, 1889. (American Geologist, Vol. IV, pp. 58, 59. Minneapolis, 1889.) A short notice of the work.

Keyes, Charles R. Discovery of Fossils in the Limestones of Frederick County, Maryland. (Johns Hopkins University Circulars, No. 84, p. 32. Baltimore, 1890.) Trenton species are noted for the first time in the Frederick limestone east of Catoclin Mountain.

[**Keyes, Charles R.**] Discovery of the Ventral Structure of *Taxocrinus* and *Haplocrinus* and Consequent Modifications in the Classification of the Crinoidea; by Charles Wachsmuth and Frank Springer: Proc. Acad. Nat. Sci., Phila., 1888. Review. (American Geologist, Vol. III, pp. 200, 201. Minneapolis, 1889.) A full synoptic abstract of the paper.

Keyes, Charles R. Distribution of Certain Loess Fossils. (American Geologist, Vol. IV, pp. 109-121. Minneapolis, 1889.) A brief account of the present known geographical range of certain living gasteropods which have been supposed to be extinct until quite recently.

Keyes, Charles R. Distribution of *Helicina Occulta*. (The Nautilus, Vol. III, pp. 18, 19. Philadelphia, 1889.) A description of the different forms of this species compared.

Keyes, Charles R. Eastern Extension of the Cretaceous in Iowa. (Proc. Iowa Acad. Sci., Vol. I, Pt. II, p. 21. Des Moines, 1892.) The finding of Cretaceous boulders in the drift of central Iowa is noted and a number of fossils are identified.

K[eyes], C[hables] R. Elemente der Paleontologie, von Gustave Steinmann, unter Mitwirkung von Ludwig Doderlein, I, Hälfte, Protozoa-Gasteropoda. 1888. Review. (American Geologist, Vol. III, pp. 401, 402. Minneapolis, 1889.) A short notice of the work.

Keyes, Charles R. Evolution of *Strophostylus*. (Proc. Iowa Acad. Sci., Vol. I, Pt. II, p. 25. Des Moines, 1892.) The relation and limits of evolution described and the interrelations of the various species pointed out.

Keyes, Charles R. Fauna of the Lower Coal Measures of Central Iowa. (Proc. Acad. Nat. Sci., Phila., pp. 222-247, 1 plate. Philadelphia, 1888.) Descriptive notes on some 50 species found at Des Moines. The following species are described in full:

Chonetes levis sp. nov.

Pleurotomaria grayvillensis Norwood

Bellerophon urii Fleming.

and Pratten.

Pleurotomaria brazoensis Shumard.

Macrochilus humilis sp. nov.

Pleurotomaria modesta sp. nov.

Reviewed in American Geologist, II, 432, 1888.

Keyes, Charles R. Fossil Faunas in Central Iowa. (Proc. Acad. Nat. Sci., Phila., pp. 242-265. Philadelphia, 1891.) The biological relations of the fossils summarized; a general section of the rocks of the region and a list of the fossils found in the middle Coal Measures, together with notes and bibliographic references to many of the forms found in the rocks near Des Moines. A synoptical table of the genera and the species thus far recognized is appended.

- Keyes, Charles R.** Fossils from the Lower Coal Measures at Des Moines, Iowa. (American Geologist, Vol. II, pp. 23-28. Minneapolis, 1888.) Summary of a more extensive paper and list of fossils given.
- Keyes, Charles R.** Genesis of American Actinocrinidæ. (American Naturalist, Vol. XXIV, pp. 243-254, 3 plates. Philadelphia, 1890.) The limits of the different genera are discussed and their characters pointed out. Diagrams of the arrangements of plates in the various groups and a chart showing the stratigraphical range expansion and evolution of the different groups are given.
- Keyes, Charles R.** Lower Carbonic Gasteropoda from Burlington, Iowa. (Proc. Acad. Nat. Sci., Phila., pp. 284-298. Philadelphia, 1889.) Annotated list of the species from the Kinderhook and Burlington limestones found in vicinity of Burlington, Iowa.
- Keyes, Charles R.** Naticoid Genus *Strophostylus*. (American Naturalist, Vol. XXIV, pp. 1111-1117, 1 plate. Philadelphia, 1890.) A description of the various groups is given and their development. The transitions are also noted and indicated by connecting lines.
- Keyes, Charles R.** New *Conocardium* from the Devonian. (Proc. Iowa Acad. Sci., Vol. I, Pt. II, pp. 23, 24. Des Moines, 1892.) *Conocardium altum* described. The description had, however, been previously published elsewhere, owing to the delay in printing of the present publication.
- Keyes, Charles R.** Paleozoic Fossils of Maryland. (Johns Hopkins University Circulars, Vol. XI, pp. 28, 29. Baltimore, 1891.) A complete list, with references, of the fossils now known to have been described from Maryland Paleozoic rocks.
- Keyes, Charles R.** Perisomic Plates of the Crinoids. (American Geologist, Vol. VII, pp. 255-258. Minneapolis, 1891.) This is partly a critical review of a recent paper of the same title by Wachsmuth and Springer.
- Keyes, Charles R.** *Platyceras* Group of Paleozoic Gasteropods (American Geologist, Vol. X, pp. 273, 277. Minneapolis, 1892.) The relations of the different species of the genus described in detail.
- Keyes, Charles R.** Preliminary Note on the Sedentary Habits of *Platyceras*. (Proc. Iowa Acad. Sci., Vol. I, Pt. II, p. 24. Des Moines, 1892.) A preliminary abstract of a more extensive paper published elsewhere.
- Keyes, Charles R.** Present Basal Line of Delimitation of the Carboniferous of Northeastern Missouri. (American Geologist, Vol. X, pp. 380-384. Minneapolis, 1892.) Faunal and stratigraphical features of the commonly recognized base of the Carboniferous in Missouri are described. References and lists of fossils are given.
- Keyes, Charles R.** Preservation of Color in Fossil Shells. (The Nautilus, Vol. IV, pp. 30-31. Philadelphia, 1890.) The preservation of coloring matter in certain gasteropod shells from the Coal Measures of Illinois is recorded.
- Keyes, Charles R.** Principal Mississippian Section. (Bul. Geol. Soc. America, Vol. III, pp. 289-300, 1 plate, 1892.) A historical consideration of the various terms applied to rocks and a detailed description of the different formations are given. A classification of the Mississippian series is proposed in accordance with the observations recently made.
- Keyes, Charles R.** Relation of *Platyceras* and *Capulus*. (American Geologist, Vol. III, pp. 6-9. Minneapolis, 1890.) The characters of both groups are compared, and the conclusions arrived at that they are to be regarded as coextensive.
- Keyes, Charles R.** Remarkable Fauna at the Base of the Burlington Limestone in Northeastern Missouri. (Am. Jour. Sci., (3), Vol. XLIV, pp. 447-452. New Haven, 1892.) A characteristic fauna is recorded as intercalated in the Burlington limestone at Louisiana, Missouri. Lists of species are also given.

- Keyes, Charles R.** Remarks on Perisomic Plates of the Crinoids. (Am. Jour. Sci., (3), Vol. XLI, pp. 247, 248. New Haven, 1891.) Some brief notes on the structure of species recently described.
- Keyes, Charles R.** Review of Progress of American Invertebrate Paleontology for the year 1890. (American Naturalist, Vol. xxv, pp. 327-333. Philadelphia, 1891.) A brief account of the American papers published during the year 1890.
- Keyes, Charles R.** Review of Progress of American Invertebrate Paleontology for 1889. (American Naturalist, Vol. xxiv, pp. 131-138. Philadelphia, 1890.) A list of the papers and their places of publication which appeared during the year 1889.
- Keyes, Charles R.** Soleniscus: Its Generic Characters and Relations. (American Naturalist, Vol. xxiii, pp. 420-424. Philadelphia, 1889.) The genus and its relations to allied groups fully described and the American forms to be referred to it listed.
- Keyes, Charles R.** Sphærodoma: A Genus of Fossil Gasteropoda. (Proc. Acad. Nat. Sci., Phila., pp. 303-309. Philadelphia, 1889.) The genus described as new and the American forms to be referred to it are tabulated and their full synonymy given.
- Keyes, Charles R.** Stratigraphy of Carboniferous in Central Iowa. (Bul. Geol. Soc. America, Vol. II, pp. 277-292, 2 plates. 1891.) There is given a full description of the various sections exposed along the Des Moines River in the central part of the State, special reference being made to the lithological characters of the strata, and the stratigraphical relations of the various beds. Several marked unconformities are described and illustrated, and the leading faunal aspects of the region tabulated.
- Keyes, Charles R.** Sedentary Habits of Platyceras. (Am. Jour. Sci., (3), Vol. xxxvi, pp. 268-272. New Haven, 1888.) Notes on habits of various species, as deduced from observations made on fossils. The attachment of the gasteropods to crinoids described and its significance pointed out.
- Keyes, Charles R.** Subgeneric Groups of Naticopsis. (American Geologist, Vol. IV, pp. 193-196. Minneapolis, 1889.) The various genera and minor groups related to the genus described and their relations to one another contrasted.
- Keyes, Charles R.** Synopsis of American Carbonic Calyptræidæ. (Proc. Acad. Nat. Sci., Phila., pp. 160, 181, 1 plate. Philadelphia, 1890.) This is essentially a treatment of the forms referred to Capulus or Platyceras. The generic characters are described, together with the general structural features and the relations to other genera. The variation exhibited is discussed, and the habits of the organisms described, especially the relations to crinoids. Numerous examples are given, and a table of the various species of crinoids and Capuli found associated. The arrangement of the American species is given in a stratigraphical catalogue. The following species are described, most of them figured:
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| Capulus occidents (Walcott). | Capulus latus (Keyes). |
| Capulus? piso (Walcott). | Capulus obliquus (Keyes). |
| Capulus formosus (Keyes). | Capulus tribulosus (White). |
| Capulus cornuformis (Winchell). | Capulus acutirostris Hall. |
| Capulus haliotoides (Meek & Worthen). | Capulus equilateralis (Hall). |
| Capulus lodiensis (Meek). | Capulus fissurella (Hall). |
| Capulus paralius (White & Whitefield). | Capulus infundibulum (Meek & Worthen). |
| Capulus subplicatus (Meek & Worthen). | Capulus sulcatus sp. nov. |
| Capulus cyrtolites (McChesney). | Capulus ovalis Stephens. |
| Capulus biserialis (Hall). | Capulus chesterensis (Meek & Worthen). |
| | Capulus parvus Swallow. |
| | Capulus spinigerus (Worthen). |

Reviewed in Am. Geologist, VI, 248, 249, 1890; and Am. Naturalist, XXIV, 1185, 1890.

- Keyes, Charles R.** Variation Exhibited by a Carbonic Gasteropod. (American Geologist, Vol. III, pp. 330-334, 2 plates. Minneapolis, 1889.) Forms from a large series of *Platyceras equilateralis* compared.
- Keyes, Charles R., and R. Ellsworth Call.** Quaternary Section Eight Miles South-east of Des Moines, Iowa. (Proc. Iowa Acad. Sci., Vol. I, Pt. II, p. 30. Des Moines, 1892.) Description of a section near the terminal moraine near Des Moines, with mention of fossils occurring in loess.
- Kicking Horse Pass, Manitoba, Fossils.** C. Lapworth. (Science, IX, 320. 1887.)
- Kinderhook Fossils, Three.** R. R. Rowley. (American Geologist, III, 275, 276. 1889.)
- Kinderhook Group, Crinoids and Blastoids from Lower Carboniferous Rocks at Le Grand, Iowa.** Charles Wachsmuth and Frank Springer. (Geol. Sur. Illinois, VIII, 155-205. 1890.) A number of species described and figured as new.
- Kinderhook, Supposed, near Mouth of Pine Creek, Geological Problems in Muscatine County, Iowa, with Special Reference to Rectification.** S. Calvin. (American Geologist, III, 25-36. 1889.) Mention made of different species.
- Kirby, J. W., T. R. Jones and.** Ostracoda from Mabon Coal Field of Nova Scotia. (Geological Magazine, Dec. III, Vol. VI, pp. 269-271. London, 1889.)
- Knochenfische aus der mittleren Kreide von Kansas, Ueber einige fossile.** A. R. Crook. (Palæontographica, XXXIX, 107. 1892.)
- Knowlton, F. H.** Problematic Organisms from Devonian at the Falls of the Ohio. (Am. Jour. Sci., (3), Vol. XXXVII, pp. 202-209. New Haven, 1889.) *Calcispara lemoni* described and figured.
- Koenen, A. von.** Contribution to Tertiary Fauna of Florida, with Special Reference to Miocene Shell Beds of Tampa and to Pleistocene beds of Calquasahatchie River, 1; by W. H. Dall: Trans. Wagner Free Inst. Sci. Review. (Neues Jahrbuch, 179, 180. 1892.)
- Koenen, A. von.** Marine Eocene, Fresh-Water Miocene and other Fossil Mollusca of Western North America; by C. A. White: U. S. Geol. Sur., Bul. No. 18. 1885. Review. (Neues Jahrbuch, 475. 1888.)
- Koenen, A. von.** Miocene Fossils from Southern New Jersey; by A. Heilprin: Proc. Acad. Nat. Sci., Phila., 1888. Review. (Neues Jahrbuch, 351. 1890.)
- Koenen, A. von.** Miocene Invertebrates from Virginia; by O. Meyer: Proc. Am. Phil. Soc., 1888. Review. (Neues Jahrbuch, 155. 1889.)
- Koenen, A. von.** Nature of Organic Species; by Joseph Leidy: Trans. Wagner Free Inst. Sci., Phila., 1889. Review. (Neues Jahrbuch, 331. 1891.)
- Koenen, A. von.** Relation of Laramie Molluscan Fauna to that of Succeeding Fresh-Water Eocene; by C. A. White: Bul. U. S. Geol. Sur., No. 34. Review. (Neues Jahrbuch, 347. 1888.)
- Koenen, A. von.** Upper Tertiary Invertebrates from West Side of Chesapeake Bay; by O. Meyer: Proc. Acad. Nat. Sci. Phila., 1890. Review. (Neues Jahrbuch, 135. 1889.)
- Koken, E.** Artiodactyle, Horned, (Protoceras Celer) from Miocene; by O. C. Marsh: Am. Jour. Sci., 1891. Review. (Neues Jahrbuch, 331. 1892.)
- Koken, E.** Corrections of Notes on Dinocerata; by E. D. Cope: Am. Nat., 1886. Review. (Neues Jahrbuch, 332, 333. 1888.)
- Koken, E.** Dicotylinae of John Day Miocene of North America; by E. D. Cope: Am. Phil. Soc., Feb. 17, 1888. Review. (Neues Jahrbuch, 322, 323. 1890.)
- Koken, E.** Dinocerata, New Forms; by W. B. Scott: Am. Jour. Sci., (3), XXXI. Review. (Neues Jahrbuch, 466. 1888.)
- Koken, E.** Discovery of Pteraspilian Fish in the Silurian Rocks of New Brunswick; by G. F. Matthew: Can. Rec. Sci., II, 1886; with additional notes on the above, Ibid., 1887. Review. (Neues Jahrbuch, 468. 1888.)
- Koken, E.** Extinct Type of Dog from Ely Cave, Lee County, Virginia; by J. A. Allen: Museum Comp. Zool., Harvard College. Review. (Neues Jahrbuch, 137. 1888.)

- Koken, E.** Fossil Human Bones; by J. Leidy: Trans. Wagner Free Inst. Sci. Phila., II. Review. (Neues Jahrbuch, 344. 1890.)
- Koken, E.** Fossil Mammals from White River Formation, contained in Museum of Comparative Zoology, Cambridge, Mass.; by W. B. Scott and H. F. Osborn: Bul. Mus. Comp. Zool., XIII, No. 5, 1891. Review. (Neues Jahrbuch, 178, 1889.)
- Koken, E.** Fossils of Triassic Rocks of British Columbia; by J. F. Whiteaves: Contr. Can. Pal., III. Review. (Neues Jahrbuch, 170, 171. 1892.)
- Koken, E.** Giant Armadillo from the Miocene of Kansas; by E. D. Cope: American Naturalist, 1886. Review. (Neues Jahrbuch, 333. 1888.)
- Koken, E.** History of Vertebrates of Trias of North America; by E. D. Cope: Proc. Am. Philos. Soc., April, 1887. Review. (Neues Jahrbuch, 302-304. 1889.)
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| Dictyoiles pennsylvanicus. | Castoroides ohioensis. |
| Platygonus vetus. | |
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| Macheirotus florida. | Elephas primigenius. |
| Equus fraterus. | Elephas columbia. |
| Anchema. | |
- Reviewed in Am. Jour. Sci., (3), xxxix, 321, 322, 1890
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- Leidy, Joseph.** Vertebrate Remains from Peace Creek, Florida. (Trans. Wagner Free Inst. Sci., Vol. ii, pp. 19-21. Philadelphia, 1889.) Remains of *Tapirus*, *Equus*, *Hippotherium*, *Bison*, *Cervus*, *Elephas*, *Chamydotherium*, *Glyptodon*, *Megalonyx*, *Manatus*, *Emys*, *Trionyx*, *Eupachemys?*, *Testudo*, *Alligator*, *Echippus*, *Diodon*, *Myliobates*, *Oxyrhina*, and *Galeocerdo*.
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- Leptomerys,** Osteology of Mesophippis and, with Observations on Modes and Factors of Evolution in Mammalia. W. B. Scott. (Jour. Morph., v, 301-406. 1891.)
- Lerch, Otto, W. F. Cummins and.** Geological Survey of the Concho Country, State of Texas. (American Geologist, Vol. v, pp. 321-335. Minneapolis, 1890.) Incidental references to fossils.
- Lesley, J. P.** Dictionary of the Fossils of Pennsylvania. (Geol. Sur. Pennsylvania, P4, Vols. i, ii, and iii. Harrisburg, 1889.) A catalogue of the fossils found in the state, with notes and numerous illustrations. The following are described as new by George B. Simpson:
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| <i>Syringothyris angulatus.</i> | <i>Modiomorpha rigidula.</i> |
| <i>Syringothyris randalli.</i> | <i>Beyrichia ungula.</i> |
| <i>Nucula simmosa.</i> | <i>Chonetes punctatus.</i> |
| <i>Nucula subtringona.</i> | <i>Cladopora rectilineata.</i> |
| <i>Orthis pennsylvanica.</i> | <i>Lyriopecten alternatus.</i> |
| <i>Orthis subcircula.</i> | <i>Sphenotus chemungensis.</i> |
| <i>Otozoum parvum.</i> | <i>Platyceras striatum.</i> |
| <i>Platyceras breve.</i> | <i>Platyceras varians.</i> |
| <i>Platyceras dorsale.</i> | <i>Ptychopteria obsoleta.</i> |
| <i>Platyceras inæquale.</i> | <i>Rhynchonella lævis.</i> |
| <i>Platyceras mitelliforme.</i> | <i>Rhynchonella striata.</i> |
| <i>Modiolopsis subrhomboidea.</i> | |
| <i>Modiomorpha subalta</i> , var. <i>chemungensis</i> , var. nov. | |
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- Lesley, J. P.** Summary description of the Geology of Pennsylvania, Vol. i. (Geol. Sur. Pennsylvania, Final Rep. Harrisburg, 1892.) Contains chapters on the general paleontology of various Cambrian and Lower Silurian formations, illustrated by numerous figures. A chapter (xvii) is devoted to the discussion of *Scolithus linearis*.
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- Lindahl, Josua.** General Index to Geological Survey of Illinois, Volumes i-viii. (Geol. Sur. Illinois, Vol. viii, Appendix, pp. 39-153. Springfield, 1890.)
- Lingula** and Paradoxides in Red Quartzites of Minnesota. N. H. Winchell. (Bul. Minnesota Acad. Nat. Sci., iii, 103-105. 1889.)

- Lingula** and Trematis, Lingulasma; A New Genus and Eight New Species. E. O. Ulrich. (American Geologist, III, 387-391. 1889.)
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- Loper**, S. Ward, W. M. Davis and. Two Belts of Fossiliferous Black Shale in Triassic Formation of Connecticut. (Bul. Geol. Soc. America, II, 415-430. 1891.)
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- Lydekker**, R. Recent Researches in Fossil Birds. (Natural Science, Vol. I, pp. 266-271. London, 1890.)
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- Mackenzie and Yukon Basins**, N. W. T., Exploration. R. G. McConnell. (*Geol. and Nat. Hist. Sur. Canada, Ann. Rep.* 1888-1889, iv, Part D, 163 pp. 1891.) Mention made of different species.
- Mackenzie River Basin**, Fossils of Devonian Rocks. J. F. Whiteaves. (*Geol. and Nat. Hist. Sur. Canada, Contributions to Canadian Paleontology*, Part III, 199-253. 1891.)
- Mammalia**, Cretaceous, Discovery. O. C. Marsh. (*Am. Jour. Sci.* (3), xxxviii, 81-90. 1889.)
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- Mammalia**, Factors in the Evolution. C. L. Morgan. (*Natural Science*, i, 97-101. 1892.)
- Mammalia Fauna**, Cretaceous of North America. H. F. Osborn. (*American Naturalist*, xxv, 298, 299. 1891.) Abstract.
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- Mammalian Molar Tooth**, Evolution to and from the Tritubercular Type. H. F. Osborn. (*British As. Adv. Sci.*, 1888, 660. 1889.)
- Mammalian Fauna of North America**, Review of Cretaceous. H. F. Osborn. (*Proc. Biol. Soc. Washington*, Feb. 1891.)
- Mammalian Remains from Rock Crevices in Florida**. J. Leidy. (*Trans. Wagner Free Inst. Sci.*, ii, 13-17. 1889.)
- Mammalian Remains from Salt Mine of Petite Anse, Louisiana**. J. Leidy. (*Trans. Wagner Free Inst. Sci.*, ii, 33-40. 1889.)
- Mammals during 1891**, Salient points in the Study. R. Lydekker. (*Natural Science*, i, 39-102. 1892.)

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- Mammals from White River Formation, Contained in the Museum of Comparative Zoology.** W. B. Scott and H. F. Osborn. (Bul. Mus. Comp. Zool., No. 5. 1887.)
- Mammals (Mesodactyla), Extinct Eocene.** O. C. Marsh. (Am. Jour Sci., (3), XLIII, 445-449. 1893.)
- Mammals of Florida, Sabre-Toothed and other Quaternary.** J. Leidy. (Proc. Acad. Nat. Sci., Phila., XLI, 29-36. 1890.)
- Mammals of North America, Cretaceous.** O. C. Marsh. (Brit. As. Adv. Sci., 853-854. 1890.)
- Mammals of Wahsatch and Wind River Beds, Collection of 1891.** H. F. Osborn and J. L. Wortman. (Bul. Am. Mus. Nat. Hist., iv, 81-147. 1892.)
- Mammals, Professor Marsh on Extinct Horses.** E. D. Cope. (American Naturalist, xxvi, 410-412. 1892.)
- Mammoth Remains in Franklin County, Kansas.** O. C. Carlton. (Trans. Kansas Acad. Sci., XII, 74. 1890.)
- Mammals, Remarks upon Extinct.** R. W. Shufeldt. (American Field, xxxii, Nos. 17-22. 1892.)
- Mammals, Tertiary.** O. C. Marsh. (Am. Jour. Sci., (3), XXXIX, 523-525. 1890.)
- Mammoth and Mastodon in Ontario, Canada.** J. H. Panton. (Brit. As. Ad. Sci., 654-655. 1891.)
- Mammoth and Mastodon in Ontario, Canada.** J. H. Panton. (Geol. Mag., Dec. iii, viii, 504. 1891.) Abstract.
- Manitoba Cambro-Silurian Rocks of Manitoba, Eight New Species of Fossils.** J. F. Whiteaves. (Trans. Roy. Soc. Canada, vii, Sec. iv, 75-83. 1889.)
- Cretaceous Fossils from British Columbia, the Northwest Territory, and Manitoba. J. F. Whiteaves. (Geol. and Nat. Hist. Sur. Canada, Contributions to Canadian Paleontology, i, 161-196. 1889.)
- Devonian, New or Previously Unrecorded Species of Fossils from Manitoba. J. F. Whiteaves. (Trans. Roy. Soc. Canada, viii, Sec. iv, 93-110. 1890.)
- Devonian Rocks of Islands, Shores or Immediate Vicinity of Lakes Manitoba and Winnipegosis. J. F. Whiteaves. (Geol. and Nat. Hist. Sur. Canada, Contributions to Canadian Paleontology, i, 255-360. 1892.)
- Foraminifera and Radiolaria from Cretaceous of Manitoba. J. B. Tyrrell. (Trans. Roy. Soc. Canada, xiii, Sec. iv, 111-115. 1890.)
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- Gasteropoda of Trenton Limestone of Manitoba, with Description of One New Species. J. F. Whiteaves. (Canadian Rec. Sci., v, 317-328. 1891.)
- Micro-Paleontology of Cambro-Silurian Rocks of Canada. E. O. Ulrich. (Geol. and Nat. Hist. Sur. Canada, Micro-Paleontology, Part II, 27-57. 1889.)
- Orthoceratidae of Trenton Limestone of Winnipeg Basin. J. F. Whiteaves. (Trans. Roy. Soc. Canada, ix, Sec. iv, 77-80. 1891.)
- Radiolaria from Pierre Formation of Northwestern Manitoba. D. Rust. (Geol. and Nat. Hist. Sur. Canada, Contributions to Canadian Micro-Paleontology, Pt. iv, 101-110. 1892.)
- Manual of Paleontology; by H. A. Nicholson and Richard Lydekker.** Review. (Am. Jour. Sci., (3), xxxix, 239. 1890.) A short criticism of the work.
- Maquoketa Shales and their Correlation with the Cincinnati Group of Southwestern Ohio.** J. F. James. (American Geologist, v, 335-356. 1890.)
- Maquoketa Shales in Iowa.** J. F. James. (Proc. Am. As. Adv. Sci., xxxviii, 250, 251. 1890.) Abstract.
- Marcellus Epoch in State of New York, List of Species Constituting Known Fauna and Flora.** J. M. Clarke. (State Cab. Nat. Hist., New York, 42d Ann. Rep., 406-407. 1889.)

- Marcellus** Epoch in State of New York, List of Species Constituting the Known Fauna and Flora. J. M. Clarke. (Eighth Ann. Rep. State Geologist, for 1889, 60-62. 1889.)
- Marcellus** Shale of New York, Balanoid Cirripede. R. P. Whitfield. (Bul. Am. Mus. Nat. Hist., II, No. 2, 66-68. 1889.)
- Marcou, Jules.** American Necomian and the Gryphæa Pitcheri. (American Geologist, Vol. v, pp. 315-317. Minneapolis, 1890.) A brief note of correction.
- Marcou, Jules.** Classification of the Dyas, Trias and Jura in Northwest Texas. (American Geologist, Vol. x, pp. 369-377. Minneapolis, 1892.) Numerous references to fossils.
- Marcou, Jules.** Genesis of the Areitidæ; by Alpheus Hyatt: Smithsonian Cont. Knowl., No. 673, 1889. (American Geologist, Vol. vi, pp. 128-133. Minneapolis, 1890.) An extended review of the work.
- Marcou, Jules.** Jura, Necomian and Chalk of Arkansas. (American Geologist, Vol. iv, pp. 357-367. Minneapolis, 1889.) Incidental references to fossils.
- Marcou, Jules.** Lower and Middle Taconic of Europe and North America. (American Geologist, Vol. v, pp. 78-102, 221-233, and 357-375. Minneapolis, 1890.) Numerous references to fossils.
- Marcou, Jules.** Mesozoic Series of New Mexico. (American Geologist, Vol. iv, pp. 155-165, 216-229. Minneapolis, 1889.) References to Cretaceous fossils.
- Marcou, Jules.** Original Locality of the Gryphæa Pitcheri, Morton. (American Geologist, Vol. III, pp. 188-193. Minneapolis, 1889.) A discussion of the early discovery of Jurassic fossils in the Southwest.
- Marcou, Jules.** Paleontologic and Stratigraphic "Principles" of the Adversaries of the Taconic. (American Geologist, Vol. II, pp. 10-23, 67-88. Minneapolis, 1888.) A review of the Taconic question with references to fossils found.
- Marcou, Jules.** Remarks on Professor Henry S. Williams, Address On the Scope of Paleontology and its Value to Geologists before Section E, A. A. A. S., Aug., 1892. (American Geologist, Vol. x, pp. 257-260. Minneapolis, 1892.) A critical review of the address.
- Marcou, Jules.** Taconic in the Salt Range of Punjab (India). (American Geologist, Vol. iv, pp. 60-62. Minneapolis, 1889.) Numerous references to fossils.
- Marcou, J. B.** Review of Progress of North American Paleontology for the year 1887. (American Naturalist, Vol. XXII, pp. 679-691. Philadelphia, 1888.) List of papers appearing on the subject during the year.
- Marine** Shells and Fragments of Shells in the Till near Boston. W. Upham. (Am. Jour. Sci., (3), xxxvii, 359-372. 1889.)
- Marsh, O. C.** Additional Characters of the Ceratopsidæ, with Notice of new Cretaceous Dinosaurs. (Am. Jour. Sci., (3), Vol. xxxix, pp. 418-426, 3 plates. New Haven, 1890.) Recent notes on the group with descriptions and figures of the following new species:
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| <i>Triceratops sulcatus.</i> | <i>Hadrosaurus breviceps.</i> |
| <i>Trachiodon longiceps.</i> | <i>Claosaurus Marsh.</i> |
- Reviewed in Neues Jahrbuch, 451, 452, 1891.
- Marsh, O. C.** Ceratopsidæ (or Horned Dinosaurs) of North America. (Brit. As. Ad. Sci., pp. 793-795. London, 1890.)
- Marsh, O. C.** Cretaceous Mammals of North America. (Brit. As. Ad. Sci., pp. 853, 854. London, 1890.)
- Marsh, O. C.** Comparisons of the Principal Forms of the Dinosauria of Europe and America. (Am. Jour. Sci., (3), Vol. xxxvii, pp. 323-331. New Haven, 1889.) Abstract of a paper read before Section C, Brit. As. Adv. Sci., Bath, 1888. Extended comparisons of different forms.
- Marsh, O. C.** Comparisons of the Principal Forms of Dinosauria of Europe and America. (Rep. British As. Adv. Sci., 1888, p. 660. London, 1889.) A paper read at the Bath meeting. Reviewed in Neues Jahrbuch, 424-433, 1890.

Marsh, O. C. Description of New Dinosaurian Reptiles. (Am. Jour. Sci., (3), Vol. xxxix, pp. 81-86, 1 plate. New Haven, 1890.) The following described as new:

<i>Triceratops serratus.</i>	<i>Ormithomimus.</i>
<i>Triceratops prosus.</i>	<i>Ormithomimus velox.</i>
<i>Ceratops paucidens</i> (<i>Hadrosaurus paucidens</i> Marsh).	<i>Barosaurus.</i>
	<i>Barosaurus lentus.</i>

Reviewed in Neues Jahrbuch, 149, 150, 1891.

Marsh, O. C. Discovery of Cretaceous Mammalia. (Am. Jour. Sci., (3), Vol. xxxviii, pp. 81-90, 4 plates. New Haven, 1889.) An account of the discovery of mammalian remains in the Laramie of Dakota and Wyoming with descriptions of the following:

<i>Cimolomys gracilis</i> gen. et sp. nov.	<i>Selenacodon fragilis</i> gen. et sp. nov.
<i>Cimolomys bellus</i> sp. nov.	<i>Camptomus amplus</i> gen. et sp. nov.
<i>Cimolodon mitidus</i> gen. et sp. nov.	<i>Dryolestes tenax</i> sp. nov.
<i>Nanomys minutus</i> gen. et sp. nov.	<i>Halodon sulptus</i> gen. et sp. nov.
<i>Dipriodon robustus</i> gen. et sp. nov.	<i>Dipelphodon vorax</i> gen. et sp. nov.
<i>Tripriodon celatus</i> gen. et sp. nov.	<i>Dipelphodon ferox</i> sp. nov.
<i>Tripriodon cæperatus</i> sp. nov.	<i>Dipelphodon comptus</i> sp. nov.
	<i>Cimolestes incisus</i> gen. et sp. nov.
	<i>Cimolestes curtus</i> sp. nov.
	<i>Pidiomys elegans</i> gen. et sp. nov.

Reviewed in Neues Jahrbuch, 141-143, 1890; also Am. Geologist, iv, 108-109, 1889.

Marsh, O. C. Discovery of Cretaceous Mammalia, Part II. (Am. Jour. Sci., (3), Vol. xxviii, pp. 177-180, 2 plates. New Haven, 1888.) Figures and describes the following:

<i>Cimolomys digona</i> sp. nov.	<i>Oracodon anceps</i> gen. et sp. nov.
<i>Selenacodon brevis</i> sp. nov.	<i>Allacodon lentus</i> gen. et sp. nov.
<i>Stagodon nitor</i> gen. et sp. nov.	<i>Halodon formosus</i> sp. nov.
<i>Platacodon nanus</i> gen. et sp. nov.	

Marsh, O. C. Discovery of Cretaceous Mammalia. (Am. Jour. Sci., (3), Vol. xliii, pp. 247-262, 7 plates. New Haven, 1892.) A number of forms are discussed and the following new species described from the Laramie of Wyoming:

<i>Cimolodon parvus.</i>	<i>Oracodon conulus.</i>
<i>Cimolodon agilis.</i>	<i>Stagodon validus.</i>
<i>Allacodon fortis.</i>	<i>Telacodon lævis</i> gen. et sp. nov.
<i>Allacodon rarus.</i>	<i>Batodon tenuis</i> gen. et sp. nov.

Marsh, O. C. Distinctive Characters of the order Hallopoda. (Am. Jour. Sci., (3), Vol. xxxix, pp. 415-417. New Haven, 1890.) A study of the characteristics of the order. Reviewed in Neues Jahrbuch, 155, 156, 1891.

Marsh, O. C. Extinct Eocene Mammals (*Mesodactyla*). (Am. Jour. Sci., (3), Vol. xliii, pp. 445-449. New Haven, 1893.) The order of *Mesodactyla* defined from the Eocene of New Mexico and *Meniscotherium* and *Hyracops* referred to it. Reviewed in Natural Science, i, 247, 1892.

Marsh, O. C. Geological Horizons as determined by Vertebrate Fossils. (Am. Jour. Sci., (3), Vol. xlii, pp. 336-338. New Haven, 1891.) Abstract of a communication made to the International Geological Congress, Washington, 1891. A study of the stratigraphic sequence of vertebrate forms.

Marsh, O. C. Gigantic Ceratopsidae, or Horned Dinosaurs, of North America. (Am. Jour. Sci., (3), Vol. xli, pp. 167-178. New Haven, 1891.) A paper read before the British Association for the Advancement of Science, Leeds, 1890. Containing a general résumé of the anatomical characters of the group. Reviewed in Neues Jahrbuch, 329, 1892; also Geological Magazine, iii, viii, 193-198 and 241-247, 1891.

- Marsh, O. C.** Horned Artiodactyle from the Miocene. (Am. Jour. Sci., (3), Vol. xli, pp. 81, 82. New Haven, 1891.) Description of *Protoceras celer* of the family Protoceratidae (fam., gen. et sp. nov.) from the Miocene of South Dakota.
- Marsh, O. C.** Mesozoic Mammalia. (American Naturalist, Vol. xxv, pp. 611-616. Philadelphia, 1889.) An answer to an article by Osborn in American Naturalist, Vol. xxv, 595-611, 1891.
- Marsh, O. C.** Mesozoic Mammalia. (Proc. Acad. Nat. Sci., Phila., Vol. LIII, pp. 237-241. Philadelphia, 1891.) A reply to the criticism by Osborn in same serial, XLIII, 124-135. 1891.
- Marsh, O. C.** New American Dinosauria. (Am. Jour. Sci., (3), Vol. xxxvii, pp. 331-336. New Haven, 1889.) The following new species described:
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| <i>Anchisaurus major.</i> | <i>Ceratops horridus.</i> |
| <i>Morosaurus lentus.</i> | <i>Hadrosaurus breviceps.</i> |
| <i>Morosaurus agilis.</i> | <i>Hadrosaurus paucideres.</i> |

Reviewed in Neues Jahrbuch, 434, 1890.

- Marsh, O. C.** New Family of Horned Dinosauria from the Cretaceous. (Am. Jour. Sci., (3), Vol. xxxvi, pp. 477, 478, 1 plate. New Haven, 1888.) *Ceratops montanus* is described as a new genus and species.

- Marsh, O. C.** New Fossil Sirenian from California. (Am. Jour. Sci., (3), Vol. xxxv, pp. 94-96, 1 plate. New Haven, 1888.) The following genus and species described as new: *Desmostylus hesperus*. Reviewed in Neues Jahrbuch, 341, 1891.

- Marsh, O. C.** New Genus of Sauropoda and Other New Dinosaurs from the Potomac Formation. (Am. Jour. Sci., (3), Vol. xxxv, pp. 89-94, 1 plate. New Haven, 1888.) The following described as new:

<i>Pleurocœlus nanus</i> (gen. et sp. nov.)	<i>Priconodon crassus</i> gen. et sp. nov.
	<i>Allosandrus medius</i> sp. nov.
<i>Pleurocœlus altus</i> sp. nov.	<i>Cœlurus gracilis</i> sp. nov.

Reviewed in Neues Jahrbuch, 155, 1891.

- Marsh, O. C.** New Tertiary Mammals. (Am. Jour. Sci., (3), Vol. xxxix, pp. 523-525. New Haven, 1890.) The following described as new.

<i>Diplocionus.</i>	<i>Colodon.</i>
<i>Diplocionus samplius.</i>	<i>Colodon luxatus.</i>
<i>Teleodus.</i>	<i>Hypotanus deflectus.</i>
<i>Teleodus avus.</i>	<i>Linnolyops.</i>

- Marsh, O. C.** New Vertebrate Fossils. (Am. Jour. Sci., (3), Vol. xlii, pp. 265-269. New Haven, 1891.) The following species are described without figures as new.

<i>Trisceratops elatus.</i>	<i>Anchisaurus colorus.</i>
<i>Torosaurus latus.</i>	<i>Allops crassicornis.</i>
<i>Torosaurus gladius.</i>	<i>Brontops validus.</i>
<i>Ammosaurus.</i>	<i>Titanops medius.</i>
<i>Ammosaurus major.</i>	

- Marsh, O. C.** Notes on Mesozoic Vertebrate Fossils. (Am. Jour. Sci., (3), Vol. xlii, pp. 171-176, 4 plates. New Haven, 1892.) Includes observations on the following:

<i>Claosaurus Marsh.</i>	<i>Amblyosodon Leidy.</i>
<i>Palæoscincus Leidy.</i>	<i>Cimolopteryx Marsh.</i>

- Marsh, O. C.** Notice of Gigantic Horned Dinosauria from the Cretaceous. (Am. Jour. Sci., (3), Vol. xxxviii, pp. 173-176. New Haven, 1889.) Contains descriptions of the following forms:

<i>Trioceratops horridus</i> gen. nov.	<i>Trioceratops galens</i> sp. nov.
<i>Trioceratops flabellatus</i> sp. nov.	<i>Modosaurus textilis</i> gen. et sp. nov.

- Marsh, O. C.** Recent Polydactyle Horses. (Am. Jour. Sci., (3), Vol. XLIII, pp. 339-354, 1 plate. New Haven, 1892.) The subject of horses possessing extra digits is taken up, figured, descriptions of specimens given and the general relationship and ancestry of the horse discussed.
- Marsh, O. C.** Reptiles from Laramie Formation. (Am. Jour. Sci., (3), Vol. XLIII, pp. 449-453. New Haven, 1892.) The following described:
- Conioplus precedens gen. et sp. nov. Iguanavus teres sp. nov.
Ormithomimus sedens sp. nov.
Chamops signis gen. et sp. nov. Claosaurus annectens sp. nov.
- Marsh, O. C.** Restoration of Brontops Robustus, from the Miocene of America. (Am. Jour. Sci., (3), Vol. XXXVII, pp. 163-165. New Haven, 1889.) Abstract of a paper read before Section D, of the British Association for the Advancement of Science, at the Bath meeting, Sept. 7th, 1888. Reviewed in Neues Jahrbuch, 140, 1890.
- Marsh, O. C.** Restorations of Claosaurus and Ceratosaurus. (Am. Jour. Sci., (3), Vol. XLIV, pp. 343-349, 2 plates. New Haven, 1892.) Descriptive notes with restorations and plates of those genera from the Jurassic of Colorado and from the Laramie of Wyoming.
- Marsh, O. C.** Restoration of Mastodon Americanus Cuvier. (Am. Jour. Sci., (3), Vol. XLIV, p. 350, 1 plate. New Haven, 1892.) A full page plate with descriptive notes of a specimen in the Yale Museum.
- Marsh, O. C.** Restoration of Stegosaurus. (Am. Jour. Sci., (3), Vol. XLII, pp. 179-181, 1 plate. New Haven, 1891.) A restoration of *Stegosaurus unguatus* from the Jurassic of Wyoming. Reviewed in Geol. Mag., iii, VIII, 358-387, 1891.
- Marsh, O. C.** Restoration of Triceratops. (Am. Jour. Sci., (3), Vol. XLI, pp. 339-342, 2 plates. New Haven, 1891.) Restorations of *Triceratops prorsus* Marsh and *Brontosaurus excelsus* Marsh. Reviewed in Geol. Mag., iii, VIII, 248, 249, 1891.
- Marsh, O. C.** Skull of Torosaurus. (Am. Jour. Sci., (3), Vol. XLIII, pp. 81-84, 2 plates. New Haven, 1892.) The skull described and figured as exhibited in specimens from Colorado, Wyoming, and Montana.
- Marsh, O. C.** Triassic Dinosauria. (Am. Jour. Sci., (3), Vol. XLIII, pp. 543-546, 3 plates. New Haven, 1892.) *Anchisaurus colurus* and *A. solus* sp. nov., described from Connecticut Triassic and their relations to certain European forms considered.
- Marsh** on Extinct Horses and Other Mammals. E. D. Cope. (American Naturalist, xxvi, 410-412. 1892.)
- Marsh** on Hallops and Other Dinosauria. G. Baur. (American Naturalist, xxiv, 569-571. 1890.)
- Marsh's** "Note on Mesozoic Mammalia," Reply. H. F. Osborn. (Proc. Am. As. Adv. Sci., xI, 290. 1892.) Abstract.
- Marthas Vineyard**, Erratic Cambrian Fossils in Neocene Gravels. J. B. Woodworth. (American Geologist, ix, 243-247. 1892.)
- Marthas Vineyard**, Occurrence of Fossils of Cretaceous Age on the Island. N. S. Shaler. (Bul. Mus. Comp. Zool. Harvard College, xvi, 89-97. 1889.)
- Marthas Vineyard**, Study of Gay Head. P. R. Uhler. (Trans. Maryland Acad. Sci., i, 204-212. 1888.)
- Maryland.**
- Additions to Observations on Cretaceous and Eocene Formations of Maryland. P. R. Uhler. (Trans. Maryland Acad. Sci., i, 45-72. 1888.)
- Albirupean Studies. P. R. Uhler. (Trans. Maryland Acad. Sci., i, 185-202. 1888.)
- Cambrian Rocks of Pennsylvania and Maryland, from the Susquehanna to the Potomac. C. D. Walcott. (Am. Jour. Sci., (3), XLIV, 469-482. 1892.) Various fossils considered.

Maryland—Continued.

Catalogue of Shell-Bearing Marine Mollusks and Brachiopods of Southeastern Coast of the United States. W. H. Dall. (Bul. U. S. Nat. Mus., No. 37, 221 pp. 1889.)

Eocene Tertiary and its Cretaceous Associates in the State of Maryland. P. R. Uhler. (Trans. Maryland Acad. Sci., I, 11-32. 1888.)

Expedition, Third Annual Geological, into Southern Maryland and Virginia. W. B. Clark. (Johns Hopkins Univ. Circulars, No. 81, 69-71. 1890.) Various species enumerated.

Fossils in the Limestones of Frederick County, Maryland. C. R. Keyes. (Johns Hopkins Univ. Circulars, No. 84, 32. 1890.)

Oriskany Sandstone of Maryland, New York and Ontario, List of Fossils. C. Schuchert. (Eighth Ann. Rep. State Geologist, New York, for 1889, 50-56. 1889.)

Paleontology of New York. J. Hall. (Nat. Hist. New York, Pal., v, Pt. II, 278 pp. 1888.)

Paleozoic Fossils of Maryland. C. R. Keyes. (Johns Hopkins University Circulars, XI, 28-29. 1891.)

Sauropoda and Other New Dinosaurs from Potomac Formation. O. C. Marsh. (Am. Jour. Sci., (3), XXXV, 89-94. 1888.) Several forms described as new.

Tertiary Fauna of Florida. W. H. Dall. (Trans. Wagner Free Inst. Sci., Philadelphia, III, 1-178. 1890.)

Tertiary Invertebrates from West Side of Chesapeake Bay. O. Meyer. (Proc. Acad. Nat. Sci., Phila., XI, 170, 171. 1888.)

Marsupialia from the Laramie Formation. E. D. Cope. (Proc. Am. As. Adv. Sci., XLI, 177. 1893.) Abstract.

Mastodon Americanus, Cuvier, Restoration. O. C. Marsh. (Am. Jour. Sci., (3), XLIV, 350. 1892.)

Mastodon and Mammoth in Ontario, Canada. J. H. Panton. (Brit. As. Ad. Sci., 654, 655. 1891.)

Mastodon and Mammoth in Ontario, Canada. J. H. Panton. (Geol. Mag., Dec., III, VIII, 504. 1891.) Abstract.

Mastodon Recently found in Tennessee. S. W. McCallie. (Science, XX, 333. 1892.)

Mastodon Remains in the Shenandoah Valley, Virginia. (American Geologist, VII, 335. 1891.)

Mastodon Remains on New York Island. R. W. Whitfield. (Science, XVIII, 342. 1891.)

Massachusetts.

Cambrian Fossils from Cohasset, Mass. C. D. Walcott. (Proc. Biol. Soc. Washington, VII, 155. 1892.)

Cambrian Fossils from Limestone of Nahant, Mass. A. F. Foerste. (Proc. Boston Soc. Nat. Hist., XXIII, 291. 1890.)

Cambrian Fossils in Neocene Gravels of Islands of Marthas Vineyard. J. B. Woodworth. (American Geologist, IX, 243-247. 1892.)

Cambrian Fossils of Bristol County, in Eastern Massachusetts. N. S. Shaler. (Bul. Mus. Comp. Zool., XVI, No. 2. 1888.)

Fauna of Lower Cambrian or Olenellus Zone. C. D. Walcott. (U. S. Geol. Sur., Tenth Ann. Rep., 511-688. 1890.)

Footprints from Connecticut Valley. M. M. Mittiver. (Proc. Am. As. Adv. Sci., XL, 286. 1892.) Abstract.

Fossils in Lower Taconic of Emmons. C. D. Walcott. (Proc. Am. As. Adv. Sci., XXXVI, 212, 213. 1888.) Abstract.

Gay Head, Marthas Vineyard. P. R. Uhler. (Trans. Maryland Acad. Sci., I, 204-212. 1888.)

Massachusetts—Continued.

Localities of Post-Tertiary and Tertiary Fossils in Massachusetts. W. W. Dodge. (Am. Jour. Sci., (3), xxxvi, 56, 57. 1888.)

Nantucket, Geology. N. S. Shaler. (Bul. U. S. Geol. Sur. No. 53. 1889.) Incidental references to fossils.

Occurrence of Fossils of Cretaceous Age on the Island of Marthas Vineyard. N. S. Shaler. (Bul. Mus. Comp. Zool. Harvard Coll., xvi, 89-97. 1889.)

Paleontological Horizons of the Limestone at Nahant, Mass. A. F. Foerste. (Boston. Soc. Nat. Hist., xxiv, 26-263. 1889.)

Preliminary Description of North Attleborough Fossils. N. S. Shaler and A. F. Foerste. (Bul. Mus. Comp. Zool., xvi, No. 2, Geol. Ser., II, 27-41. 1888.)

Recent Fossils near Boston. W. Upham. (Am. Jour. Sci., (3), XLIII, 201-209. 1892.)

Shells, Marine, and Fragments of Shells in Till near Boston. W. Upham. (Am. Jour. Sci., (3), xxxvii, 359-372. 1889.)

Taconic System of Emmons and Use of Name Taconic in Geologic Nomenclature. C. D. Walcott. (Am. Jour. Sci., (3), xxxv, 229-242. 1888.) Incidental references to fossils.

Matthew, G. F. Basal Series of Cambrian Rocks in Acadia. (Can. Rec. Sci., Vol. III, No. 1, pp. 21-29. Montreal, 1888.) Incidental references to fossils.

Matthew, G. F. Cambrian Organisms in Acadia. (Can. Rec. Sci., Vol. III, pp. 383-387. Ottawa, 1889.) Reviewed in Ottawa Naturalist, III, No. 3, 1889.

Matthew, G. F. Cambrian Organisms in Acadia. (Trans. Roy. Soc. Canada, Vol. VII, Sec. IV, pp. 135-162, 4 plates. Montreal, 1889.) The following species described and figured:

<i>Buthotrephis antiqua</i> Brongn.	<i>Astrocladia</i> (?) <i>virguloides</i> sp. nov.
<i>Phycoidella stichidifera</i> sp. nov.	<i>Dichoplectella irregularis</i> sp. nov.
<i>Palaeochorda setacea</i> sp. nov.	<i>Hyalostelia minima</i> sp. nov.
<i>Hydrocytinum silicula</i> sp. nov.	<i>Platysolenites antiquissimus</i> Eichw.
<i>Microphycus catenatus</i> sp. nov.	<i>Obolus pulcher</i> Matt.
<i>Monadites globulosus</i> sp. nov.	<i>Obolus</i> (?) <i>major</i> sp. nov.
<i>Monadites pyriformis</i> sp. nov.	<i>Linguella martinensis</i> sp. nov.
<i>Monadites urceiformis</i> sp. nov.	<i>Voborthella tenuis</i> Schmidt.
<i>Radiolarites ovalis</i> sp. nov.	<i>Psammichnites gigas</i> Torrell.
<i>Plocoscyphia</i> (?) <i>perantiqua</i> sp. nov.	<i>Arenicolites lyelli</i> , var. <i>minor</i> Torrell.
<i>Astrocladia</i> (?) <i>elongata</i> sp. nov.	<i>Leperditia ventricosa</i> sp. nov.
<i>Astrocladia</i> (?) <i>elegans</i> sp. nov.	<i>Leperditia steadia</i> sp. nov.

Reviewed by Neues Jahrbuch, 315, 316, 1888.

Matthew, G. F. How is the Cambrian Divided? A plea for the Classification of Salter and Hicks. (American Geologist, Vol. VI, pp. 139, 140. Minneapolis, 1889.) References to Cambrian forms.

Matthew, G. F. Classification of Cambrian Rocks in Acadia. (Can. Rec. Sci., Vol. III, No. 2, pp. 71-81. Montreal, 1888.) Incidental references to fossils.

Matthew, G. F. Eozoon and Other Low Organisms in Laurentian Rocks at St. John, N. B. (Bul. Nat. Hist. Soc. New Brunswick, No. 9, pp. 36-41. 1890.)

Matthew, G. F. Fish Remains in Lower Helderberg of New Brunswick. (American Geologist, Vol. VIII, pp. 61-62. Minneapolis, 1891.) A note of correction.

Matthew, G. F. Illustrations of the Fauna of the St. Johns Group, No. V. (Trans. Roy. Soc. Canada, Vol. VIII, Sec. IV, pp. 123-166, 6 plates. Montreal, 1890.) A general view of the succession of the faunas in the St. John group and descriptions, with figures, of the following:

<i>Eoecorne geminum</i> sp. nov.	<i>Platyceras aperta</i> sp. nov.
<i>Lepidilla anomala</i> Matt.	<i>Stenotheca concentrica</i> Matt.

Matthew, G. F.—Continued.

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| Stenotheca concentrica, var. radiata Matt. | Medusites radiata Mathorst. |
| Stenotheca triangularis Matt. | Medusites costata Torrell. |
| Conocoryphe walcotti Matt. | Meducichnites gen. nov. |
| Conocoryphe baileyi Hartt. | Linguella starri sp. nov. |
| Paradoxides lamellatus Hartt. | Linguella radula sp. nov. |
| Paradoxides mic-mac, var. pontificalis Matt. | Eoichnites lineanus Torrell. |
| Agraulos socialis Bill. | Ctinichnites ingenus sp. nov. |
| Agraulos (?) holocephalus sp. nov. | Psammichnites Torrell. |
| Medusites princeps Torrell. | Frana ramosa sp. nov. |
| | Arenicolites brevis sp. nov. |
| | Goniadichnites trichiformis sp. nov. |
| | Monocraterion magnificum sp. nov. |

Reviewed in Am. Jour. Sci., (3), XLII, 73-75, 1891.

Matthew, G. F. Illustrations of the St. John Group, No. VI. (Trans. Roy. Soc. Canada, Vol. IX, Sec. IV, pp. 33-65, 2 plates. Montreal, 1891.) Descriptions with figures of the following forms:

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| Dictyonema fabelliforme Eichwald. | Orthis lenticularis, var. strophomenoides var. nov. |
| Dictyonema fabelliforme, var. confertum. | Orthisina (?) johannensis sp. nov.? |
| Dictyonema fabelliforme, var. acadicum var. nov. | Agnostus bisectus sp. nov. |
| Dictyonema fabelliforme, var. norvegicum Kjerulf. | Parabolina spinulosa Wahl. |
| Bryograptus kjerulfi? Lap.? | Parabolina heres, var. lata var. nov. |
| Linguella lævis sp. nov. | Parabolina heres, var. grandis var. nov. |
| Obolella? gemmula sp. nov. | Protopeltura acanthura. |
| Linnarissonia belti? Dav. | Peltura acarbeoides Wahl. |
| Acrocreta bailey? Matt. | Leptoplastus lastus Matt. |
| Obolus refulgens sp. nov. | Centopyge flagillifer Aug. |
| Orthis lenticularis Wahl. | Centopyge spectabilis Brog. |
| Orthis lenticularis, var. atrypoides var. nov. | Conocephalites? contiguus sp. nov. |
| Orthis lenticularis, var. lyncioides var. nov. | Linguella starri, var. minor. |
| | Agnostus pisiformus. |
| | Anomocare stenotoides Matt. |
| | Anomocare springeri Matt. |
| | Obolus pulcher Matt. |

Matthew, G. F. Cambrian Fossils. (American Geologist, Vol. VIII, pp. 287-291. Minneapolis, 1891.) Careful comparisons of the Taconic fauna of Emmons with that of the St. John group.

Matthew, G. F. Occurrence of Leptoplastus in Acadian Cambrian Rocks. (Canadian Record of Science, Vol. III, p. 485. Montreal, 1889.) Note the discovery of Leptoplastus in America.

Leptoplastus stenoides sp. nov. Leptoplastus spiniger sp. nov.

Reviewed in Neues Jahrbuch, 459, 1891.

Matthew, G. F. Occurrence of Sponges in Laurentian Rocks at St. John. (Bul. Nat. Hist. Soc. New Brunswick, No. 9, pp. 42-45. 1890.) *Cyathospongia* (?) *eozeica* sp. nov., *Halichondrites graphitiferus* sp. nov. described.

Matthew, G. F. Protolenus, Genus of Cambrian Trilobites. (Bul. Nat. Hist. Soc. New Brunswick, No. 10, pp. 34-37. 1892.) *Protolenus elegans* described as new genus and species.

Matthew, G. F. Psammichnites and Early Trilobites of the Cambrian Rocks in Eastern Canada. (American Geologist, Vol. II, pp. 1-9. Minneapolis, 1888.) A detailed account of the zoological relations of the different groups of earlier trilobites, with tables.

- Matthew, G. F.** Remarkable Organisms of the Silurian and Devonian Rocks in Southern New Brunswick. (Trans. Roy. Soc. Canada, Vol. VII, Sec. IV, pp. 49-62, 1 plate. Montreal, 1888.) The following species described and figured:
Diplaspis acadica Matthew. *Geroneura wilsoni* gen. et sp. nov.
Ceratiocaris pusillus sp. nov. *Archæoscolex corneus* gen. et sp. nov.
Bunodella horrida sp. nov. *Eurypterella ornata* gen. et sp. nov.
Reviewed in *Ottawa Naturalist*, III, No. 2, 1884; and *Neues Jahrbuch*, 329, 1891.
- Matthew, G. F.** Second Note of *Stenotheca*. (*Geological Magazine*, Dec. III, Vol. VI, pp. 210, 211. London, 1889.) *Stenotheca concentrica* described.
- McCallie, S. W.** Mastodon Recently found in Tennessee. (*Science*, Vol. XX, p. 333. New York, 1892.) Announcement of discovery of remains.
- McCreary, J. M.** Causes of Extinction of Species. (*American Geologist*, Vol. V, pp. 100-104. Minneapolis, 1890.) Illustrations of minor factors in the extinction of species.
- McConnell, R. G.** Geology of Mt. Stephens, British Columbia. (*American Geologist*, Vol. III, pp. 22-25. Minneapolis, 1889.) References to the stratigraphical position of certain forms.
- McConnell, R. G.** Exploration in the Yukon and Mackenzie Basins, N. W. T. (*Geol. and Nat. Hist. Sur. Canada*, Vol. IV, Ann. Rep. 1888-1889, Part D, 163 pp. Montreal, 1891.) Lists of fossils collected from the various formations given.
- McGee, W. J.** Geological Antecedents of Man in the Potomac Valley. (*Am. Anthropologist*, Vol. II, pp. 227-234, 1889.)
- McGee, W. J.** Paleolithic Man in America. (*Pop. Sci. Monthly*, Vol. XXXIV, pp. 20-36. New York, 1889.) Reviewed in *Neues Jahrbuch*, 479, 1889.
- McInnes, Wm., L. W. Bailey and.** Explorations and Surveys in Portions of Northern New Brunswick and Adjacent Areas in Quebec and Maine. (*Geol. and Nat. Hist. Sur. Canada*, Ann. Rep. 1887, III, Part M, 527 pp. 1889.)
- Mechanical Causes of Origin of Dentition of Rodentia.** E. D. Cope. (*American Naturalist*, XXII, 3-13. 1889.)
- Megalonyx Beds in Kansas.** J. A. Udden. (*American Geologist*, VII, 340-345. 1891.)
- Megalonyx Bones not Before Known.** J. M. Safford. (*Proc. Am. As. Adv. Sci.*, XL, 289. 1892.) Abstract.
- Megalonyx in Holmes county, Ohio.** E. W. Claypole. (*American Geologist*, III, 122-132, 149-153. 1891.)
- Megalonyx Leidy, sp. nov.,** Description of a Skull. J. Lindahl. (*Trans. Am. Phil. Soc.*, XVII, 1-12. 1892.)
- Megalonyx, Pelvis, and Other Bones from the Big Bone Cave, Tennessee.** J. M. Safford. (*Bul. Geol. Soc. America*, III, 121-123. 1892.)
- Meniscotheriidae and Chalicotherioidea.** H. F. Osborn. (*American Naturalist*, XXV, 911, 912. 1891.)
- Meniscotherium, a member of Chalicotherioidea?** H. F. Osborn. (*American Naturalist*, XXVI, 306-309. 1892.)
- Merrill, George P.** Ophiolite of Thurman, Warren County, N. Y., with Remarks on the Eozoon Canadense. (*Am. Jour. Sci.*, (3), Vol. XXXVII, pp. 189-191. New Haven, 1889.) Occurrence of Eozoon in the Warren county serpentine discussed. Reviewed in *Am. Geologist*, III, 268, 269, 1889.
- Mesodactyla, Extinct Eocene Mammal.** O. C. Marsh. (*Am. Jour. Sci.*, (3), XLIII, 445-449. 1892.)
- Meshippus and Leptomerys, Osteology, with Observations on the Modes and Factors of Evolution in Mammalia.** W. B. Scott. (*Jour. Morph.*, V, 301-406. 1891.)
- Mesozoic Mammalia.** O. C. Marsh. (*American Naturalist*, XXV, 611-616. 1889.)
- "Mesozoic Mammalia,"** Reply to Prof. Marsh's Note. H. F. Osborn. (*Proc. Am. As. Adv. Sci.*, XL, 290. 1892.) Abstract.
- Bull. 121—10

- Mesozoic**, North American. C. A. White. (Proc. Am. As. Adv. Sci., xxxviii, 205-226. 1890.)
- Mesozoic**, North American. C. A. White. (Science, xiv, 160-166. 1889.)
- Mesozoic Series of New Mexico**. J. Marcou. (American Geologist, iv, 155-165 and 216-229. 1889.) Various species of fossils referred to.
- Mesozoic Types of Fossils, Texas Permian**. C. A. White. (Bul. U. S. Geol. Sur., No. 77, 51 pp. 1891.)
- Mesozoic Vertebrate Fossils**, Notes on. O. C. Marsh. (Am. Jour. Sci., (3), XLIV, 171-176. 1892.)
- Method of Grouping Formations of Middle Cretaceous and the Employment of an Additional Term in the Nomenclature**. G. H. Eldridge. (Am. Jour. Sci., (3), xxxviii, 313-321. 1889.) References made to various species.
- Methods of Correlation; Cuboides Zone and its Fauna**, A discussion. H. S. Williams. (Bul. Geol. Soc. America, i, 481-500. 1890.)
- Metis**, Little, Province of Quebec, Canada, Species of Fossil Sponges. J. W. Dawson and G. J. Hinde. (Proc. Peter Redpath Mus., McGill Univ., 49-68. 1888.)
- Metis**, Province of Quebec, Canada, Sponges. J. W. Dawson and G. J. Hinde. (Can. Rec. Sci., III, 49-68. 1888.)
- Metis**, Sponges from Beds of Quebec Group of Sir William Logan. J. W. Dawson. (Can. Rec. Sci., III, 429-430. 1889.)
- Mexico**.
 Cretaceous Deposits, Geology and Paleontology. A. Heilprin. (Proc. Acad. Nat. Sci., Phila., XLII, 445-469. 1890.)
 Cretaceous Fishes from Mexico. J. Felix. (Palaeontographica, xxxvii, 189-194. 1891.)
 Ueber die tektonischen Verhältnisse der Republik Mexiko. J. Felix and Hans Lenk. (Zeitsch. der deutsch. geol. Gesell., Band XLIV, Heft 2, pp. 303-324. 1892.) Various species mentioned.
 Vertebrate Fauna of Equus Beds. E. D. Cope. (American Naturalist, xxiii, 160-165. 1889.)
- Mexique**, Note sur quelques Echinides du terrain crétacé. M. Cotteau. (Bul. Soc. géol. France, III, No. 18, 292-299. 1890.)
- Meyer, Otto**. Fish Otoliths of Southern Old-Tertiary. (American Naturalist, Vol. xxiii, pp. 42-43. Philadelphia, 1889.) Criticism of an article by E. Koken on Neue Untersuchungen an tertiären Fisch-Otolithen: Zeitsch. d. deutsch. geol. Gesell., p. 274, 1888.
- Meyer, Otto**. Upper Tertiary Invertebrates from West Side of Chesapeake Bay. (Proc. Acad. Nat. Sci., Phila., vol. XL, pp. 170-171. Philadelphia, 1888.) Notes on several species, with a description of *Aligena sharpi* as new.
- Michigan**.
 Bryozoa, Paleozoic. E. O. Ulrich. (Geological Sur. Illinois, VIII, 283-688. 1890.) Descriptions of new species.
 Characters of *Diphyphyllum Simcoense* (Bill.) Rom. W. H. Sherzer. (American Geologist, iv, 93-95. 1889.)
 Fishes, Paleozoic of North America. J. S. Newberry. (U. S. Geol. Sur., Mon. xvi, 340 pp. 1889.)
 Paleontology of New York. J. Hall and J. M. Clarke. (Nat. Hist. New York, Pal., VII, 236 pp. 1888.)
 Revision and Monograph of Genus *Chonophyllum*. W. H. Sherzer. (Bul. Geol. Soc. America, III, 253-282. 1892.)
 Sponges of Devonian and Carboniferous Systems. E. O. Ulrich. (Geol. Sur. Illinois, VIII, 243-251. 1890.) Descriptions of new species.
Syringothyris, Winchell, and its American Species. C. Schuchert. (Ninth Ann. Rep. State Geologist, New York, 1889, 28-38. 1890.)
- Micro-Paleontology of Cambro-Silurian Rocks of Canada**. A. H. Foord. (Geol. and Nat. Hist. Sur. Canada. Contrib. to Micro. Pal., 26 pp. 1893.)

- Micro-Paleontology** of Cambro-Silurian Rocks of Canada. E. O. Ulrich. (Geol. and Nat. Hist. Sur. Canada, Micro-Paleontology, Part II, 27-57. 1889.)
- Micro-Paleontology**, Canadian. T. Rupert Jones. (Geol. and Nat. Hist. Sur. Canada, Micro-Paleontology, Part III, 59-100. 1891.)
- Middle Cambrian**, New Genera and Species of Fossils. C. D. Walcott. (Proc. U. S. Nat. Mus., XI, 441-446. 1889.)
- Middleton Formation** of Tennessee, Mississippi, and Alabama; with a Note on Formation at La Grange, Tennessee. J. M. Safford. (American Geologist, IX, 63-64. 1892.) Incidental references to fossils.
- Miller, S. A.** Lower Carboniferous Crinoids from Missouri. (Bul. Geol. Sur. Missouri, No. 4, 40 pp., 5 plates. Jefferson City, 1891.) The following species are described as new:

<i>Platycrinus boonvillensis.</i>	<i>Platycrinus brittsi.</i>
<i>Platycrinus allophylus.</i>	<i>Platycrinus carchesium.</i>
<i>Platycrinus occidentalis.</i>	<i>Barycrinus boonvillensis.</i>
<i>Platycrinus pulcellus.</i>	<i>Barycrinus blairi.</i>
<i>Platycrinus æternalis.</i>	<i>Belemnocrinus sampsoni.</i>
<i>Platycrinus acclivus.</i>	<i>Dichocrinus hamburgi.</i>
<i>Platycrinus sampsoni.</i>	<i>Dichocrinus parvalus.</i>
<i>Platycrinus annosus.</i>	<i>Zeacrinus pocillum.</i>
<i>Platycrinus æquitermus.</i>	<i>Cyathocrinus boonvillensis.</i>
<i>Platycrinus gorbyi.</i>	<i>Poteriocrinus brittsi.</i>
<i>Platycrinus absentivus.</i>	<i>Cyathocrinus sampsoni.</i>
<i>Platycrinus pentagonus.</i>	<i>Missouricrinus.</i>
<i>Platycrinus sulcatus.</i>	<i>Missouricrinus admonitus.</i>
<i>Platycrinus lautus.</i>	<i>Synbathocrinus blairi.</i>
<i>Platycrinus concinnus.</i>	<i>Actinocrinus nodosus.</i>
<i>Platycrinus ollicula.</i>	<i>Dorycrinus confragosus.</i>
<i>Platycrinus amabilis.</i>	<i>Zeacrinus commaticus.</i>
<i>Platycrinus rotundus.</i>	<i>Scaphiocrinus boonvillensis.</i>
<i>Platycrinus blairi.</i>	<i>Scaphiocrinus constrictus.</i>
<i>Platycrinus broadheadi.</i>	<i>Rhodocrinus parvus.</i>
<i>Platycrinus batiola.</i>	<i>Forbesocrinus elegantulus.</i>

Miller, S. A. New Genus of Crinoids from the Niagara Group. (American Geologist, Vol. I, pp. 263-264. Minneapolis, 1888.) The genus *Siphonocrinus* is described as new.

Miller, S. A. North American Geology and Paleontology. (One volume, 664 pp., Cincinnati, 1890.) This is essentially a new edition of the author's American Paleozoic Fossils, to which has been added figures illustrating the leading genera and a brief sketch of stratigraphy. All the generic and specific names for American fossils heretofore proposed are listed, with references to the place of publication and horizons. The following are given as new names:

<i>Chrispongia faberi.</i>	<i>Platycystites faberi.</i>
<i>Chrispongia wenti.</i>	<i>Chonetes goinitzanus.</i>
<i>Allocystites gen. nov.</i>	<i>Spirifera cuspidatiformis.</i>
<i>Allocystites hammelli.</i>	<i>Pleurotomaria kentuckiensis.</i>
<i>Ectenocrinus gen. nov.</i>	<i>Cyrtoceras ashmanni.</i>
<i>Gomphocystites indianaensis.</i>	<i>Goniatites kentuckiensis.</i>
<i>Holocystites canneus.</i>	<i>Goniatites subcircularis.</i>
<i>Holocystites faberi.</i>	<i>Nautilus faberi.</i>
<i>Holocystites hammelli.</i>	<i>Orthoceras iowense.</i>
<i>Holocystites subglobosus.</i>	<i>Allorisma worthenianum.</i>
<i>Lysoecystites gen. nov.</i>	<i>Clidophorous faberi.</i>
<i>Menocrinus gen. nov.</i>	<i>Cuneamya coriformis.</i>
<i>Platycystites gen. nov.</i>	<i>Modiolopsis capax.</i>

Miller, S. A.—Continued.

<i>Modiopsis faberi</i> .	<i>Technophorus faberi</i> .
<i>Orthodesma faberi</i> .	<i>Faberia</i> gen. nov.
<i>Palæoconcha</i> gen. nov.	<i>Faberia anomala</i> .
<i>Palæoconcha faberi</i> .	<i>Lichas faberi</i> gen. nov.
<i>Pyanomya faberi</i> .	<i>Haplotichnus</i> gen. nov.
<i>Schizodus mooresi</i> .	<i>Haplotichnus indianensis</i> .
<i>Sphenolium</i> gen. nov.	<i>Plangtichnus</i> gen. nov.
<i>Sphenolium faberi</i> .	<i>Plangtichnus erraticus</i> .
<i>Sphenolium richmondense</i> .	<i>Treptichus</i> gen. nov.
<i>Technophorus</i> gen. nov.	<i>Treptichus bifurcus</i> .

Reviewed in *Am. Geologist*, v, 52-53, 1890; *Am. Jour. Sci.*, (3), XXXIX, 67, 1890; also same, XXXVIII, 328-329.

Miller, S. A. *Paleontology of Indiana*. (Geol. Sur. Indiana, Eighteenth Ann. Rep., Paleontology, pp. 257-356, 12 plates. Indianapolis, 1892.) Advance Sheets. The following species are described and figured for the most part as new:

<i>Receptaculites elrodi</i> .	<i>Agaricocrinus chouteauensis</i> .
<i>Cystiphyllum greenii</i> .	<i>Cyathocrinus gorbyi</i> .
<i>Amplexus cinctatus</i> .	<i>Cyathocrinus meekanus</i> Shumard.
<i>Microcyclus blairi</i> .	<i>Scaphiocrinus lyoni</i> .
<i>Striatopora gorbyi</i> .	<i>Scaphiocrinus maniformis</i> .
<i>Holocystites amplus</i> .	<i>Barycrinus stellifer</i> .
<i>Æthocystites</i> .	<i>Melocrinus æqualis</i> .
<i>Æthocystites sculptus</i> .	<i>Gazaerinae</i> .
<i>Stribalocystites gorbyi</i> .	<i>Gazaerinus inornatus</i> .
<i>Agelacrinus blairi</i> .	<i>Cyphocrinus</i> .
<i>Stephanocrinus cornetti</i> .	<i>Cyphocrinus gorbyi</i> .
<i>Platycrinus caducus</i> .	<i>Ichthyocrinus greenii</i> .
<i>Platycrinus chouteauensis</i> .	<i>Lingula parrishi</i> .
<i>Platycrinus colletti</i> .	<i>Lingula sedaliensis</i> .
<i>Rhodocrinus benedicti</i> .	<i>Lingula gorbyi</i> .
<i>Actinocrinus sedaliensis</i> .	<i>Lingula vanhornii</i> Miller.
<i>Dorycrinus elegans</i> .	<i>Crania blairi</i> .
<i>Actinocrinus</i> (?) <i>chouteauensis</i> .	<i>Crania greenii</i> .
<i>Agaricocrinus sampsoni</i> .	<i>Rhynchonella colletti</i> .
<i>Agaricocrinus blairi</i> .	<i>Rhynchonella kokomoensis</i> .
<i>Batocrinus divalis</i> .	<i>Terebratula occidentalis</i> .
<i>Batocrinus icosidactylus</i> .	<i>Athyris ottervillensis</i> .
<i>Batocrinus irregularis</i> .	<i>Athyris brittsi</i> .
<i>Steganocrinus benedicti</i> .	<i>Atrypa missouriensis</i> .
<i>Saccocrinus benedicti</i> .	<i>Retzia triangularis</i> .
<i>Saccocrinus howardi</i> .	<i>Retzia plicata</i> .
<i>Cylicocrinus</i> .	<i>Retzia circularis</i> .
<i>Cylicocrinus canaliculatus</i> .	<i>Hyalolithes lanceolatus</i> .
<i>Batocrinus comparilis</i> .	<i>Conularia intertexta</i> .
<i>Batocrinus brittsi</i> .	<i>Tryblidium madisonense</i> .
<i>Batocrinus decrepitus</i> .	<i>Holopea hubbardi</i> .
<i>Actinocrinus blairi</i> .	<i>Murchisonia hammelli</i> .
<i>Actinocrinus brittsi</i> .	<i>Orthoceras cribrum</i> Geinitz.
<i>Eretmocrinus prægravis</i> .	<i>Orthoceras colletti</i> .
<i>Batocrinus blairi</i> .	<i>Orthoceras gorbyi</i> .
<i>Actinocrinus fossatus</i> .	<i>Orthoceras franklinense</i> .
<i>Blairocrinus arrosus</i> .	<i>Cyrtoceras thompsoni</i> .
<i>Blairocrinus bullatus</i> .	<i>Cyrtoceras howardi</i> .
<i>Agaricocrinus germanus</i> .	<i>Poterioceras missouriense</i> .

Miller, S. A.—Continued.

<i>Streptodiscus</i> .	<i>Goniatites greenii</i> .
<i>Streptodiscus indianensis</i> .	<i>Modiolopsis dychii</i> .
<i>Nautilus toddi</i> .	<i>Mesothyra gurleyi</i> .
<i>Metacoceras cavatiforme</i> Hyatt.	<i>Macrocaris</i> .
<i>Solenochilus blairi</i> .	<i>Macrocaris gorbyi</i> .

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<i>Modiolopsis longa</i> .	<i>Cyclocystoides cincinnatiensis</i> .
<i>Modiolopsis sulcata</i> .	<i>Holocystites affinis</i> .
<i>Orthodesma mundum</i> .	<i>Aviculopecten germanus</i> .

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<i>Eupachyerinidæ</i> fam. nov.	<i>Taxocrinus subovatus</i> sp. nov.
<i>Eupachyerinus magister</i> sp. nov.	<i>Forbesocrinus speciosus</i> sp. nov.
<i>Eupachyerinus sphaeralis</i> sp. nov.	<i>Cyathocrinus opimus</i> sp. nov.
<i>Ulocrinus</i> , gen. nov.	<i>Poteriocrinus arcanus</i> sp. nov.
<i>Ulocrinus buttsi</i> sp. nov.	<i>Schaphiocrinus bonoensis</i> sp. nov.
<i>Ulocrinus kansasensis</i> sp. nov.	<i>Abrotocrinus</i> gen. nov.
<i>Delocrinus</i> gen. nov.	<i>Abrotocrinus cymosus</i> sp. nov.
<i>Delocrinus hemisphericus</i> Shumard.	<i>Gonioocrinus</i> gen. nov.
<i>Delocrinus missouriensis</i> sp. nov.	<i>Gonioocrinus sculptilis</i> sp. nov.
<i>Æsiocrinus</i> gen. nov.	<i>Batoocrinus poculum</i> sp. nov.
<i>Æsiocrinus ulrichi</i> sp. nov.	<i>Batoocrinus facetus</i> sp. nov.
<i>Hydreionocrinus pentagonus</i> sp. nov.	<i>Batoocrinus cantonensis</i> sp. nov.
<i>Agaricocrinus splendens</i> sp. nov.	<i>Poteriocrinus scopæ</i> sp. nov.
<i>Batoocrinus marinus</i> sp. nov.	<i>Poteriocrinus spartarius</i> sp. nov.
<i>Batoocrinus jucundus</i> sp. nov.	<i>Poteriocrinus genista</i> sp. nov.
<i>Dichocrinus cinctus</i> sp. nov.	<i>Poteriocrinus legrandensis</i> sp. nov.
<i>Poteriocrinus granilineus</i> sp. nov.	<i>Poteriocrinus cantonensis</i> sp. nov.
<i>Poteriocrinus crawfordsvillensis</i> sp. nov.	<i>Onychocrinus cantonensis</i> sp. nov.
<i>Poteriocrinus verus</i> sp. nov.	<i>Rhodocrinus sculptus</i> sp. nov.
<i>Scaphiocrinus manus</i> sp. nov.	<i>Rhodocrinus cælatus</i> sp. nov.
<i>Actinocrinus grandis</i> sp. nov.	<i>Zeocrinus dubius</i> sp. nov.
	<i>Scaphiocrinus repertus</i> sp. nov.
	<i>Scaphiocrinus bellus</i> sp. nov.
	<i>Scaphiocrinus lacunosus</i> sp. nov.

Miller, S. A.—Continued.

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| Scaphiocrinus præmorsus sp. nov. | Delocrinus hemisphericus Shumard. |
| Dichocrinus ulrichi sp. nov. | Ulocrinus sp. ? |
| Poteroicrinus subramosus sp. nov. | Eupachycrinus magister Miller & Gurley. |
| Scaphiocrinus graphicus sp. nov. | Schoenaster legrandensis sp. nov. |
| Scaphiocrinus granuliferus sp. nov. | Aganaster gen. nov. |
| | Aganaster (?) sp. |
| Scaphiocrinus disparalis sp. nov. | Troostocrinus nitidulus sp. nov. |
| Barycrinus princeps sp. nov. | Archæocidaris legrandensis sp. nov. |
| Æsocrinus basilicus sp. nov. | |

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- Hyæna and Other Carnivora from Texas. E. D. Cope. (American Naturalist, xxvi, 1028-1029. 1892.)
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- Llama Remains from Colorado and Kansas. F. W. Cragin. (American Geologist, ix, 257-260. 1892.)
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- Mustilide from Loup Fork Miocene of Nebraska, Two New Species. E. D. Cope. (American Naturalist, xxix, 950-952. 1890.)
- Nantucket, Geology. N. S. Shaler. (Bul. U. S. Geol. Sur., No. 53. 1889.) Incidental references to fossils.
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- Nebraska Perissodactyls from White River Neocene. E. D. Cope. (American Naturalist, xxv, 47-49. 1891.)
- Pliocene, Intermediate, Fauna. E. D. Cope. (American Naturalist, xxiii, 253-254. 1889.)
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- Vertebrata of Swift Current River, II. E. D. Cope. (American Naturalist, XXIII, 151-155. 1889.)
- Vertebrata of Swift Current River, III. E. D. Cope. (American Naturalist, XXIII, 628, 629. 1889.)
- Yucatan, Geological Researches. A. Heilprin. (Proc. Acad. Nat. Sci., Philadelphia, XLIII, 136-158. 1891.) Incidental references to fossils.
- Neocene** Gravels of Island of Marthas Vineyard, Erratic Cambrian Fossils. J. B. Woodworth. (American Geologist, IX, 243-247. 1892.)
- Neocene** of Nebraska, Perissodactyls from White River. E. D. Cope. (American Naturalist, XXV, 47-49. 1891.)
- Neocomian** and *Gryphæa Pitcheri*. J. Marcou. (American Geologist, V, 315-317. 1890.)
- Neocomian**, Jura and Chalk of Arkansas. J. Marcou. (American Geologist, IV, 357-367. 1889.) Various species of fossils referred to.
- Neocomian** Shales of Kansas, Cheyenne Sandstone. F. W. Cragin. (American Geologist, VI, 233-238. 1890.) Incidental references to fossils.
- Neocomian** Shales, Cheyenne Sandstone and. F. W. Cragin. (American Geologist, VII, 179-181. 1891.) Occurrence of characteristic fossils noted.
- Neocomian** Shales of Kansas and Cheyenne Sandstone. F. W. Cragin. (American Geologist, VII, 23-33. 1891.) Occurrence of characteristic fossils noted.
- Neozoic** Geology of Southwestern Arkansas. R. T. Hill. (Geol. Sur., Arkansas, Ann. Rep. 1888, II, 127-152. 1889.) In the chapter on the paleontology of Trinity division a number of forms are described as new.
- Nettleroth, Henry.** Kentucky Fossil Shells: A Monograph of the Fossil Shells of the Silurian and Devonian Rocks of Kentucky. (Kentucky Geol. Sur., Mon., pp. 1-245, 36 plates. Frankfort, 1889.) After a short sketch of the geology of the State follows a series of descriptions of the sponges, mollusca, and moluscoidea of the Silurian and Devonian from the Falls of Ohio. Some 220 species are described of which 34 are new:

<i>Lingula triangulata.</i>	<i>Rhynchneila rugæscosta.</i>
<i>Orthis goodwini.</i>	<i>Rhynchnella saffordi</i> , var. <i>depressa.</i>
<i>Orthis linneyi.</i>	<i>Rhynchnella tenuistriata.</i>
<i>Pentamerella thusnelda.</i>	<i>Atrypa calvini.</i>
<i>Pentamerus complanatus.</i>	<i>Atrypa ellipsoidea.</i>
<i>Pentamerus globulosus.</i>	<i>Atrypa reticularis</i> , var. <i>niagarensis.</i>
<i>Pentamerus knotti.</i>	<i>Spirifera byrnesi.</i>
<i>Pentamerus uniplicatus.</i>	<i>Spirifera davisii.</i>
<i>Stricklandinia louisvillensis.</i>	<i>Spirifera hobbsi.</i>
<i>Chonetes subquadrata.</i>	<i>Spirifera dubia.</i>
<i>Productella semiglobosa.</i>	<i>Spirifera foggi.</i>
<i>Rhynchneila bellaforma.</i>	<i>Spirifera knappiana.</i>
<i>Rhynchneila gainesi.</i>	
<i>Rhynchneila louisvillensis.</i>	

Nettleroth, Henry—Continued.

<i>Spirifera macconathii</i> .	<i>Euomphalus sampsoni</i> .
<i>Trematospira helena</i> .	<i>Clinopistha striata</i> .
<i>Zygospira kentuckiensis</i> .	<i>Cypriocarditis halli</i> .
<i>Platyceras compressum</i> .	<i>Paracyclas elongata</i> .
<i>Platyceras milleri</i> .	<i>Paracyclas octerlonii</i> .
<i>Pleurotomaria arabella</i> .	<i>Modiomorpha charlestownensis</i> .
<i>Pleurotomaria procteri</i> .	<i>Nucula herzeri</i> .
<i>Callonema clarki</i> .	<i>Glyptodesma cancellata</i> .
<i>Machrocheilus carinatus</i> .	

Reviewed in Neues Jahrbuch, Bd. I. Ref., 461, 1891; also American Geologist, v, 107, 108, 1890.

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Reviewed in American Geologist, iv, 58, 59, 1889.

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Cambrian Fossils, Upper, Description of New Forms. C. D. Walcott. (Proc. U. S. Nat. Mus., xiii, 266-279. 1891.)

Fauna of Lower Cambrian or Olenellus Zone. C. D. Walcott. (U. S. Geol. Sur., Tenth Ann. Rep., 511-658. 1890.)

Genesis of Arietidæ. A. Hyatt. (Smithsonian Cont. Knowl., xxvi, No. 637, 238 pp. 1889.)

Paleontology of New York. J. Hall and J. M. Clarke. (Nat. Hist. New York, Pal., vii, 236 pp. 1888.)

Syringothyris, Winchell, and its American Species. C. Schuchert. (Ninth Ann. Rep. State Geologist, New York, for 1889, 28-38. 1890.)

New Brunswick.

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Entomostraca, Paleozoic Bivalve, North American Species. T. R. Jones. (Ann. and Mag. Nat. Hist., iii, 154. 1889.)

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Littleton Fossils. (Am. Jour. Sci., (3), xxxv, 255. 1888.) C. H. Hitchcock mentioned as referring the fossils to the Niagara in 1884.

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Footprints from Jura-Trias of New Jersey. J. Eyerman. (Proc. Acad. Nat. Sci., Philadelphia, xli, 32, 33. 1889.)

Gasteropoda and Cephalopoda of Raritan Clays and Green Sand Marls of New Jersey. R. P. Whitfield. (U. S. Geol. Sur., Mon. xviii, 402 pp. 1891.)

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Revision of Cretaceous Echinoidea of North America. W. B. Clark. (Johns Hopkins Univ. Circulars, No. 87, 75-77. 1891.)

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Eocene Mammals (Mesodactyla). O. C. Marsh. (Am. Jour. Sci., (3), 445-449. 1893.)

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- Asaphus Canalis*, Conrad, Additional Notes. R. P. Whitfield. (Bul. Am. Mus. Nat. Hist., II, No. 2, 64, 65. 1889.)
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- Calceocerinidæ; Revision of Family, with Descriptions of Some New Species. E. N. S. Ringeberg. (Ann. New York Acad. Sci., IV, 20 pp. 1889.)
- Calcareous Formation in Champlain Valley. E. Brainard and H. M. Seely. (Bul. Am. Mus. Nat. Hist., III, 1-23. 1890.) Various species mentioned.
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- Chonophyllum*, Revision and Monograph. W. H. Sherzer. (Bul. Geol. Soc. America, III, 253-282. 1892.)
- Crinoidea of Lower Limestone at Lockport, N. Y., with Descriptions of New Species. E. N. S. Ringeberg. (Ann. N. Y. Acad. Sci., V, 301. 1890.)
- Crustaceous Tracks from Potsdam Sandstone of Port Henry, N. Y. J. Hall. (New York State Mus. Nat. Hist., Forty-second Ann. Rep., 25-34. 1889.)
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Leptanisia; A New Genus of Brachiopoda from the Lower Helderberg Group. C. E. Beecher. (Am. Jour. Sci., (3), 238-340. 1890.)

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- Oriskany Sandstone of Maryland, New York, and Ontario, List of Fossils. C. Schuchert. (Eighth Ann. Rep. State Geologist New York, for 1889, 50-56. 1889.)
- Paleontology of Cretaceous Formation on Staten Island. A. Hollick. (Trans. N. Y. Acad. Sci., XI, 96-103, 1892.)
- Paleontology of New York. J. Hall. (Nat. Hist. New York, Pal., v, Pt. II, 278 pp. 1888.)
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- Platygonus, an Extinct Genus allied to the Peccaries. J. Leidy. (Trans. Wagner Free Inst. Sci., II, 41-50. 1889.)
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- Staten Island, New York, Cretaceous and Triassic Fossils. (American Naturalist, XXIII, 1032-1037. 1889.) Note from the Proc. Nat. Sci. Assoc. of Staten Island.
- Taconic limestone, Western, Fossils in Eastern Part of Dutchess Co., N. Y. W. B. Dwight. (American Jour. Sci., (3), XXXIX, 71. 1890.)
- Taconic System of Emmons and Use of Name Taconic in Geologic Nomenclature. C. D. Walcott. (Am. Jour. Sci., (3), XXXV, 229-242. 1888.) Incidental reference to the fossils.
- Terataspis Grandis, Hall, the Largest Known Trilobite. J. M. Clarke. (Tenth Ann. Rep. State Geologist New York, for 1890, 87-90. 1891.)
- Value of Term "Hudson River Group" in Geologic Nomenclature. C. D. Walcott. (Bul. Geol. Soc. America, I, 335-356. 1890.) Incidental references to fossils.
- Wappinger Valley Limestone and Other Formations of Dutchess Co., N. Y. W. B. Dwight. (Am. Jour. Sci., (3), XXXIII, 139-153. 1889.) Various fossils considered.
- Newberry, J. S.** Catalogue of British Fossil Vertebrata; by Woodward and Sherborn. (Am. Jour. Sci., (3), Vol. XXXIX, pp. 402, 403. 1890.) A short notice of the work.
- Newberry, J. S.** Fossil Fishes and Fossil Plants of the Triassic Rocks of New Jersey and the Connecticut Valley. (U. S. Geol. Sur., Mon. XIV, 95 pp., 26 plates. Washington, 1888.) The following species of fish are figured and described:
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|----------------------------------|-----------------------------------|
| Ischypterus. | Ischypterus alatus sp. nov. |
| Ischypterus ovatus W. C. R. | Ischypterus modestus sp. nov. |
| Ischypterus marshii W. C. R. | Ischypterus lenticularis sp. nov. |
| Ischypterus agassizi W. C. R. | Ischypterus lineatus sp. nov. |
| Ischypterus micropterus sp. nov. | Ischypterus macropterus W. C. R. |
| Ischypterus tenuiceps Agassiz. | Ischypterus braunii sp. nov. |
| Ischypterus fultus Agassiz. | Ischypterus parvus W. C. R. |
| Ischypterus robustus sp. nov. | Ischypterus latus J. H. R. |
| Ischypterus elegans sp. nov. | Ischypterus minutus sp. nov. |

Newberry, J. S.—Continued.*Ischypterus gigas* sp. nov.*Catopterus*.*Catopterus redfieldi* Egerton.*Catopterus gracilis* J. H. R.*Catopterus minor* sp. nov.*Catopterus ornatus* sp. nov.*Catopterus anguilliformis* W. C. R.*Catopterus parvulus* W. C. R.*Dictyopyge*.*Dictyopyge macrura* Egerton.*Ptycholepis*.*Ptycholepis marshii* Newb.*Acentrophorus*.*Acentrophorus chicopensis* sp. nov.*Diplurus* Newb.*Diplurus longicaudatus* Newb.

Reviewed in *Am. Geologist*, IV, 187, 188, 1889; also *Am. Jour. Sci.*, (3,) XXXVIII, 77, 78, 1889; and *Nature*, XLII, 366, 367, 1890.

Newberry, J. S. Fossil Fishes of Erie Shale of Ohio. (*Trans. N. Y. Acad. Sci.*, Vol. VII, pp. 178-180. New York, 1888.) Abstract. The following new species and genera are described from the top of the formation in the valley of the Cuyahoga, near Cleveland:

Cladodus kepleri.*Actinophorus*.*Actinophorus clarkii*.*Dinichthys curtus*.*Dinichthys tuberculatus*.

Newberry, J. S. Laramie Group. (*Bul. Geol. Soc. America*, Vol. I, pp. 524-527. New York, 1890.) A brief discussion of the group with references to fossils.

Newberry, J. S. Paleozoic Fishes of North America. (*U. S. Geol. Sur.*, Mon. XVI, 340 pp., 53 plates. Washington, 1889.) Descriptions of the genera and species from the American Paleozoic which have been heretofore described by the author. The following species described and figured:

Acantholepis pustulosus sp. nov.*Acanthaspis armatus* Newb.*Machæracanthus major* Newb.*Machæracanthus peracutus* Newb.*Machæracanthus sulcatus* Newb.*Asterosteus stenocephalus* Newb.*Rhynchodus secans* Newb.*Rhynchodus frangens* Newb.*Rhynchodus crassus* Newb.*Rhynchodus excavatus* Newb.*Rhynchodus greeniei* sp. nov.*Dinichthys precursor* sp. nov.*Coccosteus occidentalis* Newb.*Onychodus sigmoides* Newb.*Dinichthys hertzeri* Newb.*Heteracanthus* gen. nov.*Heteracanthus politus* sp. nov.*Ctenacanthus wrighti* Newb.*Goniodus* gen. nov.*Goniodus hertzeri* sp. nov.*Callognathus* gen. nov.*Callognathus regularis* sp. nov.*Callognathus serratus* sp. nov.*Onychodus ortonii* sp. nov.*Aspidichthys clavatus* Newb.*Heliodus lesleyi* Newb.*Dipterus (Ctenodus) nelsoni* sp. nov.*Dipterus (Ctenodus) flabelliformis* sp. nov.*Dipterus (Ctenodus) levis* sp. nov.*Dipterus (Ctenodus) minutus* sp. nov.*Sphenophorus* nov. gen.*Sphenophorus lilleyi* sp. nov.*Holonema* nov. gen.*Holonema rugosa* Clappole.*Ganorhynchus beecheri* sp. nov.*Phyllolepis delicatula* sp. nov.*Dinichthys tuberculatus* sp. nov.*Onychodus hopkinsi* Newb.*Holoptychius? pustulosus* sp. nov.*Holoptychius granulatus* sp. nov.*Holoptychius tuberculatus* sp. nov.*Holoptychius giganteus? Ag.**Helodus gibberulus* Ag.*Cladodus carinatus* sp. nov.*Cladodus kepleri* sp. nov.*Ctenacanthus randalli* sp. nov.*Bothriolepis leidyi* sp. nov.*Bothriolepis minor* sp. nov.*Holoptychinus americanus* Leidy.*Holoptychius? radiatus* sp. nov.*Holoptychius hallii* sp. nov.*Glyptopomus sayrei* Newb.*Dipterus (Ctenodus) sherwoodi* Newb.*Dipterus (Ctenodus) radiatus* sp. nov.*Gyracanthus sherwoodi* sp. nov.*Titanichthys agassizii* Newb.*Titanichthys clarkii* Newb.

Newberry, J. S.—Continued.

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| Dinichthys minor Newb. | Mazodus gen. nov. |
| Dinichthys gouldii sp. nov. | Mazodus kepleri sp. nov. |
| Dinichthys corrugatus sp. nov. | Ctenacanthus angustus sp. nov. |
| Dinichthys intermedius sp. nov. | Cœlosteus gen. nov. |
| Dinichthys curtus sp. nov. | Cœlosteus ferox sp. nov. |
| Glyptaspis gen. nov. | Rhizodus anceps sp. nov. |
| Glyptaspis verrucosus sp. nov. | Stethacanthus gen. nov. |
| Diplognathus mirabilis Newb. | Labodus marginatus sp. nov. |
| Mylostoma terrelli Newb. | Physonemus stellatus sp. nov. |
| Mylostoma variabilis Newb. | Orthopleurodus carbonarius N. |
| Trachosteus gen. nov. | & W. |
| Trachosteus clarkii sp. nov. | Ctenacanthus littoni sp. nov. |
| Ctenacanthus compressus Newb. | Ctenacanthus cylindricus sp. nov. |
| Ctenacanthus clarkii sp. nov. | Harpacanthus fimbriatus Stock. |
| Hoplonchus parvulus Newb. | Sandalodus crassus. |
| Cladodus concinnus Newb. | Orodus ramosus Ag. |
| Cladodus tumidus sp. nov. | Acondylacanthus occidentalis N. & W. |
| Ctenodus wagneri sp. nov. | Antliodus arcuatus sp. nov. |
| Phœbodus politus sp. nov. | Polyrhizodus littoni N. & W. |
| Actinophorus gen. nov. | Psammodus glyptus St. J. & W. |
| Actinophorus clarkii sp. nov. | Edestus giganteus sp. nov. |
| Asteroptychius elegans sp. nov. | Ctenodus serratus Newb. |
| Gyracanthus inornatus sp. nov. | Ctenodus ohioensis Cope. |
| Cladodus romingeri Newb. | |

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Newberry, J. S. Structure and Relation of Edestus with Description of a Gigantic New Species. (Ann. N. Y. Acad. Sci., Vol. IV, pp. 113-122, 3 plates. New York, 1888.) The following described:

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| Edestus giganteus sp. nov. | Edestus heinrichsii N. & W. |
| Edestus vorax Leidy. | Edestus davisii Woodward. |
| Edestus minor Newb. | |

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Newfoundland.

Cambrian, Lower, or Olenellus Zone of North America, Descriptive Notes of New Genus and Species. C. D. Walcott. (Proc. U. S. Nat. Mus., XII, 33-46. 1890.)

Fauna of Lower Cambrian or Olenellus Zone. C. D. Walcott. (U. S. Geol. Sur., Tenth Ann. Rep., 511-658. 1890.)

Taconic of Eastern Newfoundland. J. P. Howley. (American Geologist, IV, 121-125. 1889.) Numerous references to fossils.

Newell, F. H. Niagara Cephalopods from Northern Indiana. (Proc. Bost. Soc. Nat. Hist., Vol. XXII, pp. 466-486. Boston, 1888.) The following noted:

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| Orthoceras crebescens H. | Gomphoceras linearis n. sp. |
| Orthoceras unionensis Worth. | Gomphoceras projectum n. sp. |
| Orthoceras rigidum H. | Hexameroceras delphicolum n. sp. |
| Orthoceras obstructum n. sp. | Hexameroceras cacabiformis n. sp. |
| Kinoceras columnare. | Pentameroceras mirum. |
| Kinoceras strix. | Ascoceras newberryi Billings. |
| Kinoceras angulatum. | Ascoceras indianensis n. sp. |
| Gomphoceras wabashensis n. sp. | |

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- Niagara Cephalopods from Northern Indiana.** F. H. Newell. (Proc. Bost. Soc. Nat. Hist., xxiii, 426-486. 1888.)
- Niagara Group, Genus of Crinoids.** S. A. Miller. (American Geologist, i, 263, 264. 1888.)
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Castocrinus rugosus W. R. Billings.	Proclivocrinus radiculatus Ringueberg.
Castocrinus billingsianus, sp. nov.	Proclivocrinus chrysalis Hall.
Castocrinus articulosus E. Billings.	Calceocrinus Hall.
	Calceocrinus typus sp. nov.
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Ringueberg, Eugene N. S. New Species of Fossils from the Niagara Shales of Western New York. (Proc. Acad. Nat. Sci., Phila., Vol. xl, pp. 131-147, 1 plate. Philadelphia, 1888.) The following new species are described and figured:

Buthotrepsis gregaria.	Orthis acutiloba.
Inocaulis anastomotica.	Hyalites subimbricatus.
Dendrocrinus celsus.	Plumulites gracilissimus.
Mariacrinus warreni.	

Reviewed in Neues Jahrbuch, 154, 1892.

Rhinoceras, Hippotherium and, from Florida. J. Leidy. (Proc. Acad. Nat. Sci., Phila., xlii, 182, 183. 1890.)

Rhizodus from St. Louis Limestone at Alton, Ill. J. S. Newberry. (Trans. N. Y. Acad. Sci., vii, 165. 1889.)

Rhode Island.

Carboniferous Flora and Fauna of Rhode Island. A. S. Packard. (Am. Jour. Sci., (3), xxxvii, 411. 1889.)

Paleontological Notes. A. S. Packard. (Proc. Boston Soc. Nat. Hist., xxiv, 209-216. 1889.)

Rhynchopora of North America, Tertiary. S. H. Scudder. (Proc. Boston Soc. Nat. Hist., xxv, 370-386. 1892.)

Rockford Shales, Notes. C. L. Webster. (American Naturalist, xxii, 444-446. 1888.) Incidental references to fossils.

Rockford Shales of Iowa, Fossils. C. L. Webster. (American Naturalist, xxii, 1012-1015. 1888.) Descriptions of certain species, some of which are regarded as new.

Rocks, Fossils from Devonian, of the Island, Shores or Immediate Vicinity of Lakes Manitoba and Winnipegosis. J. F. Whiteaves. (Geol. and Nat. Hist. Sur. Canada, Contributions to Canadian Paleontology, i, 255-360. 1892.)

Rocks of St. Paul, Indiana, and Vicinity. C. S. Beachler. (American Geologist, vii, 178-179. 1891.) Numerous references to fossils.

Rodentia. Mechanical Causes of Origin of Dentition. E. D. Cope. (American Naturalist, xxii, 3-13. 1888.)

Roemer, Fred. Macraster, eine neue Spatangoiden-Gattung aus der Kreide von Texas. (Neues Jahrbuch f. Min., Geol. u. Pal., pp. 191-195, 1 tafel. 1888.) Describes Macraster as a new genus with *M. texanus* n. sp. as the type from the Cretaceous of Georgetown, Texas.

- Roemer, Fred.** Ueber die Gattungen *Pasceolus* und *Cyclocrinus*. (Neues Jahrbuch f. Min., Geol. u. Pal., pp. 74-75. 1888.) Having received specimens of *Pasceolus billingsi* from the Lower Silurian of Clinton, Iowa, concludes that generically *Pasceolus* and *Cyclocrinus* are synonymous. *Cyclocrinus* is accepted since it is the oldest name.
- Römeria, Edwards and Haime** and the Genus *Caliapora*, Schlüter, Relations between the Genera *Syringolites*. H. A. Nicholson. (Geological Magazine, Dec. iii, vi, 433-438. 1889.)
- Rolfe, Charles W.** Characters and Distribution of the Genera of Brachiopoda. (American Naturalist, Vol. xxiii, pp. 983-998. Philadelphia, 1889.) A classification based largely on external characters.
- Rominger, C.** Rejoinder to Mr. C. D. Walcott. (American Geologist, Vol. ii, pp. 356-359. Minneapolis, 1889.) A discussion of the Mt. Stephens fauna.
- Rominger, C.** Studies on Monticulipora. (American Geologist, Vol. vi, pp. 102-121. Minneapolis, 1890.) A critical consideration of the group and its structural characters. It is primarily a criticism of Ulrich's recent work.
- Rominger, C.** Typical *Chaetetes* in the Devonian Strata at the Falls of the Ohio and likewise in the Analogous Beds of the Eifel in Germany. (American Geologist, Vol. x, pp. 56-63, 1 plate. Minneapolis, 1892.) The differentiation of the old group into other generic types is briefly described with leading structural features. It is shown that the typical genus is found geologically much lower than has heretofore been supposed.
- Rowley, R. R.** Chouteau Group of Eastern Missouri. (American Geologist, Vol. iii, pp. 111-116. Minneapolis, 1889.) List of typical forms given.
- Rowley, R. R.** Description of a New Species of Burlington Crinoid. (American Geologist, Vol. v, pp. 146-147. Minneapolis, 1890.) *Batocrinus Calvinii* described and figured from Missouri.
- Rowley, R. R.** Natural Casts of Crinoids and Blastoids from the Burlington Limestone. (American Geologist, Vol. vi, pp. 66-67. Minneapolis, 1890.) Brief notes on certain species of crinoids.
- Rowley, R. R.** Three Kinderhook Fossils. (American Geologist, Vol. iii, pp. 275-276. Minneapolis, 1889.) Some observations on *Zaphrentis caleola*, *Porcellia nodosa* and *Batocrinus pistiliformis*.
- Rugose Corals**, Chart. W. H. Sherzer. (American Geologist, vii, 273-301. 1891.)
- Russell, F. W.** Geology of Central Nebraska. (American Geologist, Vol. vii, pp. 38-44. Minneapolis, 1891.) Numerous references to fossils.
- Russell, F. W.** Nebraska Tertiary. (American Geologist, Vol. ix, pp. 178-181. Minneapolis, 1892.) Incidental references to fossils.
- Russell, I. C.** Expedition to Mount St. Elias in Summer of 1890. (Nat. Geog. Mag., Vol. iii, 200. pp. Washington, 1891.) Incidental references to fossils.
- Rüst, D.** Radolaria from the Pierre formation of Northwestern Manitoba. (Geol. and Nat. Sur. Canada, Contributions to Canadian Micro-Paleontology, iv, pp. 101-110, 3 plates, Ottawa. 1892.) After a short introduction by J. B. Tyrrell, the following species are described:

<i>Caryosphæra æquidistans</i> sp. nov.	<i>Tricolocapsa salva</i> , Rust.
<i>Cenellipsis hexagonalis</i> sp. nov.	<i>Tricolocapsa thoracica</i> sp. nov.
<i>Prunulum calococcus</i> sp. nov.	<i>Tricolocapsa dowlingi</i> sp. nov.
<i>Cryptocalpis crassitestata</i> sp. nov.	<i>Tricolocapsa selwyni</i> sp. nov.
<i>Dictyocephalus microstoma</i> sp. nov.	<i>Dictyomitra canadensis</i> sp. nov.
<i>Dictyocephalus macrostoma</i> sp. nov.	<i>Dictyomitra polypora</i> Zittel.
<i>Theocampe sphærocephala</i> sp. nov.	<i>Dictyomitra multicostata</i> Zittel.
	<i>Stichocapsa tyrrelli</i> sp. nov.
	<i>Stichocapsa dawsoni</i> sp. nov.

- Saccamina Eriana.** J. W. Dawson. (Am. Jour. Sci., (3), xxxvii, 318. 1889.)
- Safford, James M.** Exhibition of Certain Bones of *Megalonyx*, not before Known. (Proc. Am. As. Adv. Sci., Vol. XL, p. 289. Salem, 1892.) Abstract. Notes on the discovery of *Megalonyx* at Big Cave, Tenn. Reviewed in Geol. Mag., (iii,) viii, 504, 1891.
- Safford, James M.** Middleton Formation of Tennessee, Mississippi and Alabama; with a Note on the Formation at La Grange, Tenn. (American Geologist, Vol. ix, pp. 63-64. Minneapolis, 1892.) Numerous references to fossils.
- Safford, James M.** Pelvis of a *Megalonyx*; and other Bones from Big Bone Cave, Tennessee. (Bul. Geol. Soc. America, Vol. iii, pp. 121-123. 1892.) A historical note on various collections of bones.
- Safford, James M.,** and A. W. Vogdes. Description of New Species of Fossil Crustacea from the Lower Silurian of Tennessee, with remarks on others not well known. (Proc. Acad. Nat. Sci., Phila., Vol. xli, pp. 166-168. Philadelphia, 1889.) The following species described and figured:
Ampyx americanus sp. nov. *Chasmops troosti* Safford.
Eocrinus varicostatus Walcott.
 Reviewed in Neues Jahrbuch, 440, 1890.
- Saint John Group, Illustrations of Fauna.** G. F. Matthew. (Trans. Roy. Soc. Canada, viii, Sec. iv, 123-166. 1890.)
- Saint John Group, Illustrations of Fauna, No. vi.** G. F. Matthew. (Trans. Roy. Soc. Canada, ix, Sec. iv, 33-65. 1891.)
- Saint Paul, Indiana, and Vicinity, Rocks.** C. S. Beachler. (American Geologist, vii, 178, 179. 1891.) Numerous references to fossils.
- Saint Peter Sandstone, Fossils.** F. W. Sardeson. (Bul. Minnesota Acad. Sci., iii, 318, 319. 1891.)
- Salter and Hicks, Classification of; How is Cambrian Divided?** G. F. Matthew. (American Geologist, vi, 139, 140. 1889.) Numerous references to fossils.
- Sampson, F. A.** Subcarboniferous Series at Sedalia, Missouri. (Trans. New York Acad. Sci., Vol. vii, pp. 246, 247. New York, 1888.) Incidental references to fossils.
- Sardeson, F. W.** Fossils in Saint Peter Sandstone. (Bul. Minnesota Acad. Nat. Sci., Vol. iii, pp. 318, 319. Minneapolis, 1891.) A list of fossils found given.
- Sardeson, F. W.** Lower Silurian Formations of Wisconsin and Minnesota Compared. (Bul. Minnesota Acad. Nat. Sci., Vol. iii, pp. 319-326. Minneapolis, 1891.) Incidental references to fossils.
- Sardeson, F. W.** Paleozoic Fossils in the Drift. (Bul. Minnesota Acad. Nat. Sci., Vol. iii, pp. 317-318. Minneapolis, 1891.) A list of Devonian forms found in the drift.
- Sardeson, F. W.** Range and Distribution of the Lower Silurian Fauna of Minnesota, with Descriptions of New Species. (Bul. Minnesota Acad. Nat. Sci., Vol. iii, pp. 326-343, 2 plates. Minneapolis, 1891.) A tabulated list of the forms and their range is given; with descriptions and figures of the following, as new:
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|---------------------------------|---|
| <i>Camarella bernensis.</i> | <i>Orthis minnesotensis.</i> |
| <i>Camarella owatonnaensis.</i> | <i>Orthis petrea.</i> |
| <i>Crania halli.</i> | <i>Productella minneapolis.</i> |
| <i>Discina concordensis.</i> | <i>Rhynchonella minnesotensis.</i> |
| <i>Leptæna minnesotensis.</i> | <i>Rhynchonella sancta.</i> |
| <i>Leptæna paræcosis.</i> | <i>Skenidium anthonenis.</i> |
| <i>Leptæna recedens.</i> | <i>Strophomena halli.</i> |
| <i>Leptæna saxeæ.</i> | <i>Strophomena inquassa.</i> |
| <i>Orthis corpulenta.</i> | <i>Streptorhynchus subsulcatum.</i> |
| <i>Orthis macrior.</i> | <i>Zygospira aquila.</i> |
| <i>Orthis rugata.</i> | <i>Carinaropsis deleta.</i> |
| <i>Orthis tersus.</i> | <i>Carinaropsis (or Bellerophon) phalera.</i> |

Sardeson, F. W.—Continued.

Conchopeltis (or Metoptoma)	Tryblidium validum.
obtusa.	Cypricardites luculentus.
Fusispira (?) spicula.	Cypricardites minnesotensis.
Holopea (?) perundosa.	Cypricardites triangularis.
Metoptoma explanata.	Cypricardites vicinus.
Pleurotomaria clivosa.	Tillinomya candens.
Tryblidium exertum.	Tellinomya (or Nucula) lepida.

Reviewed in Am. Jour. Sci., (3), XLIII, 539, 1892.

Sardeson, F. W., C. W. Hall and. Paleozoic Formations of Southeastern Minnesota. (Bul. Geol. Soc. America, Vol. III, pp. 331-368, 2 plates. Rochester, 1892.)

Saskatchewan.

Silurian Rocks of Southeastern Portion of District of Saskatchewan, New Species of Fossils. J. F. Whiteaves. (Canadian Rec. Sci., IV, 293-303. 1891.)

Saskatchewan, Silurian Rocks of the Southeastern Portion of the District. J. F. Whiteaves. (Canadian Rec. Sci., V, 293-303. 1891.)

Saurian from the Benton of Kansas. F. W. Cragin. (American Geologist, II, 404-407. 1888.)

Saurian of Laramie Formation, Horned. G. Baur. (Science, XVII, 216-217. 1891.)

Sauropoda and Other New Dinosaurs from Potomac Formation. O. C. Marsh. (Am. Jour. Sci., (3), XXXV, 89-94. 1888.)

Scaumenac Bay and Campbelltown, Canada, Devonian Fishes. R. H. Traquair. (Geological Magazine, Dec. III, VII, 15-22. 1890.)

Sceptropora, Genus of Bryozoa, with remarks on Helopora (Hall) and Other Genera of that Type. E. O. Ulrich. (American Geologist, I, 228-234. 1888.)

Schleroderms, Extinct. T. Gill. (American Naturalist, XXII, 828-830. 1888.) Diagnostic characters of the several families.

Schuchert, Charles. Fossils occurring in the Oriskany Sandstone of Maryland, New York, and Ontario. (Eighth Ann. Rep. State Geologist New York, for 1889, pp. 50-56. Albany, 1889.) A tabulated list of fossils with notes on their occurrences.

Schuchert, Charles. Syringothyris, Winchell, and its American Species. (Ninth Ann. Rep. State Geologist New York, for 1889, pp. 28-38. Albany, 1890.) The genus is defined and the following species described and referred to it:

Syringothyris carteri Hall.	Syringothyris texta Hall.
Syringothyris angulata Simpson.	Syringothyris randalli Simpson.
Syringothyris extenuata Hall.	Syringothyris herricki sp. nov.
Syringothyris gigas Troost.	Syringothyris plena Hall.

Scolithus Flattened by Pressure, Casts. A. Wanner. (American Geologist, V, 35-38. 1890.)

Scolithus, Genus. (American Naturalist, XXVI, 240-242. 1892.)

Scolithus, Studies in Problematic Organisms. J. F. James. (Bul. Geol. Soc. America, III, 32-44. 1892.)

Scope of Paleontology and its Value to Geologists. H. S. Williams. (American Geologist, X, 148-169. 1892.)

Scott, W. B. Evolution of Pre-Molar Teeth in Mammals. (Proc. Acad. Nat. Sci., Phila., Vol. XLIV, pp. 405-444. Philadelphia, 1892.)

Scott, W. B. Osteology of Mesohippus and Leptomerys, with Observations on Modes and Factors of Evolution in the Mammalia. (Journal Morphology, Vol. V, pp. 301-306. Boston, 1891.) Reviewed in Am. Geologist, IX, 402-404, 1892.

Scott, W. B. Osteology of Poebrotherium; A contribution to the Phylogony of the Tylopoda. (Journal Morphology, Vol. V, 1-78. Boston, 1891.) Reviewed in Am. Geologist, III, 327-328, 1889; also Am. Jour. Sci., (3), XLIV, 284, 1892.

- Scott, W. B.** Princeton Scientific Expedition of 1891. (Princeton College, Bul., 4 pp. Princeton, 1891.)
- Scott, W. B.** Revision of North American Creodonts, with Notes on some Genera which have been referred to that Group. (Proc. Acad. Nat. Sci., Phila., Vol. XLIV, pp. 291-320. Philadelphia, 1892.) The following described as new:
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|-----------------|----------------|
| Oxyclænidaæ. | Microclænodon. |
| Triisodontidaæ. | Paradoxodon. |
| Carcinodon. | Pentacodon. |
| Clænodon. | Protochriacus. |
| Ellipsodon. | Protozonodon. |
| Epichriacus. | Tetraclænodon. |
- Scott, W. B.** Upper Eocene Lacustrine Formations of the United States. (Proc. Am. As. Adv. Sci., Vol. XXXVI, p. 217. Salem, 1888.) Abstract. Notes on the characteristics and stratigraphic sequence of the fauna.
- Scott, W. B.**, and H. F. Osborn. Mammalia of the Uinta Formation. (Trans. Am. Philosophical Soc., Vol. xvi, pp. 461-572. Philadelphia, 1890.) Reviewed in American Geologist, vi, 56-57, 1890.
- Scudder, Samuel H.** Brief Notes of a New Fossil Butterfly. (Psyche, Vol. VI, p. 101. Cambridge, 1891.) *Barbarothæa florissanti* from Colorado, the Second Libytheid known, so that now of the known fossil butterflies one-ninth are Libytheinae; of living species one eight-hundredth belongs to the same family.
- Scudder, Samuel H.** Canadian Fossil Insects, I, Tertiary Hemiptera of British Columbia. (Cont. to Canadian Pal., Vol. II, pp. 5-26, pl. 1. Montreal, 1891.) The new species are:
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| Ricania antiquata. | Stenolocris n. gen. |
| Cerecopita torpescens. | Stenolocris venosa. |
| Cercopis grandiscens. | Ptysmaphora n. gen. |
| Stenecphora n. gen. | Ptysmaphora flecheri. |
| Stenecphora punctulata. | Palæoptysoma nov. gen. |
| Dawsonites veter. | Palæoptysma venosa. |
- Reviewed in Neues Jahrbuch, 424, 1892.
- Scudder, Samuel H.** Emery on the Origin of the Ant-fauna of Europe. (Psyche, Vol. VI, p. 300. Cambridge, 1892.) An abstract of Emery's study of the ants of Sicilian amber.
- Scudder, Samuel H.** Field Work of the U. S. Geological Survey. (Psyche, Vol. VI, pp. 101, 102. Cambridge, 1891.) Note the discovery of rich deposits of fossil insects at White River and in the Roan Mountains in western Colorado.
- Scudder, Samuel H.** Fossil Butterflies. (Butterflies of New England, Vol. I, pp. 756-760. Cambridge, 1889.) A general account of a few species known in Europe and America.
- Scudder, Samuel H.** Fossil Butterflies of Florissant. (U. S. Geol. Sur., Eighth Ann. Rep., pp. 433-474, 2 plates. Washington, 1890.) Descriptions and illustrations of the following seven species with an appendix on a living African Libythea:
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| Prodryas Scudder. | Lithopsyche styx, sp. nov. |
| Prodryas persephone Scudder. | Nymphalites obscurum, sp. nov. |
| Jupiteria, gen. nov. | Apanthesis, gen. nov. |
| Jupiteria charon, sp. nov. | Apanthesis leuce, sp. nov. |
| Lithopsyche, gen. nov. | Prolibythea (Libythea), gen. nov. |
- Reviewed in Nature, XIII, 18, 1890; also Am. Geologist, VI, 197, 1890.
- Scudder, Samuel H.** Fossil Insect Localities in the Rocky Mountain Region. (Psyche, Vol. V, p. 362. Cambridge, 1890.) The relative abundance of individuals in the orders of insects, and especially in the Hymenoptera and Coleoptera, is shown to be very different at Florissant from what it is at the other localities, while the latter are similar to one another.

- Scudder, Samuel H.** Fossil Insects. (*Psyche*, VI, p. 118. Cambridge, 1891.) Brief remarks on plant lice, from Florissant, a Psocid, from White River, Col., and Barbarothesa.
- Scudder, Samuel H.** Fossil Insects of North America, with Notes on Some European Species. (Two vols., 4°. New York, 1890.) A collection of the author's quarto publications on fossil insects. The separate volumes have independent title-pages. Reviewed in *Am. Geologist*, VIII, 52, 53, 1891; *Am. Jour. Sci.*, (3), XLI, 330, 1891; also *Neues Jahrbuch*, 582, 1892.
- Scudder, Samuel H.** Index to the Known Fossil Insects of the World, including Myriapods and Arachnids. (*Bul. U. S. Geol. Sur.*, No. 71, 744 pp. Washington, 1891.) A complete index to all known fossil species. Reviewed in *Am. Geologist*, IX, 266, 1892; also *Am. Jour. Sci.*, (3), XLII, 516, 1891.
- Scudder, Samuel H.** Interesting Paleozoic Cockroach Fauna at Richmond, Ohio. (*Proc. Boston Soc. Nat. Hist.*, Vol. XXIV, pp. 45-53. Boston, 1889.) Description of eight new species of *Ectoblattina*. Reviewed in *Am. Jour. Sci.*, (3), XXXVII, 235, 1889; also *Neues Jahrbuch*, 357, 1891.
- Scudder, Samuel H.** Lower Silurian Insects from Sweden. (*Psyche*, Vol. VI, p. 365. Cambridge, 1892.) Notice of Newberry's discovery of *Protocimex silicus*.
- Scudder, Samuel H.** New Carboniferous Myriapoda from Illinois. (*Mem. Boston Soc. Nat. Hist.*, Vol. IV, pp. 417-442, 5 plates. Boston, 1890.) Sixteen species and three genera described, besides notes on five species previously known. This forms pages 393-418, pls. 25-30, of *Fossil Insects of North America*, Vol. I. Reviewed in *Neues Jahrbuch*, 585, 1892; also in *Am. Jour. Sci.*, (3), XLI, 72, 1891.
- Scudder, Samuel H.** New Types of Cockroaches from the Carboniferous deposits of the United States. (*Mem. Boston Soc. Nat. Hist.*, Vol. IV, pp. 401-415, 2 plates. Boston, 1890.) Ten species and two genera are described. This paper forms pages 377-391 and plates 23-24 of the *Fossil Insects of North America*, Vol. I. Reviewed in *Neues Jahrbuch*, 584, 585, 1892; also in *Am. Jour. Sci.*, (3), XLI, 72, 1891.
- Scudder, Samuel H.** Physiognomy of the American Tertiary Hemiptera. (*Proc. Bost. Soc. Nat. Hist.*, Vol. XXIV, pp. 562-579. Boston, 1890.) This paper sets forth the proportional number of species in each of the families and compares them with those now living in America and from the European Tertiaries. The Fauna of the Western Tertiary are shown to bear definite relations to that now existing in the region, but to have distinct typical affinities. The total number of species is 266.
- Scudder, Samuel H.** Pre-Tertiary Insects of North America, including Critical Remarks and Descriptions of Some European Forms. (One volume, 4°, 455 pp., 35 plates. New York, 1890.) This forms Vol. I, of the *Fossil Insects of North America*, and includes all the author's papers on the older fossil insects, published in quarto between 1866 and 1890, together with a final chapter, pp. 449-457, not elsewhere published. This chapter is entitled: *Bibliographical Note on American Literature Treating of Older Fossil Insects*.
- Scudder, Samuel H.** Prothoracic Wings. (*Psyche*, Vol. VI, pp. 31, 32. Cambridge, 1891.) Notice of Brongniart's paper describing Carboniferous insects with wing-like prothoracic appendages.
- Scudder, Samuel H.** Remains of Coleoptera in the Interglacial Clays of Scarborough, Ontario. (*Proc. Bost. Soc. Nat. Hist.*, Vol. XXIV, pp. 467, 468. Boston, 1890.) Elytra of 32 species have been discovered, mostly *Carabidae* and *Staphylinidae*. All are extinct, but resemble insects of the same region.
- Scudder, Samuel H.** Tertiary Insects of North America. (*U. S. Geol. and Geog. Sur. Terr.*, Vol. XIII, 734 pp., 28 plates. Washington, 1890.) Treats in full of the Myriopoda, Arachnida, and lower orders of the Hexopoda from all American Tertiary deposits, while in the Coleoptera, Diptera, and Hymenop-

Scudder, Samuel H.—Continued.

tera only the species found elsewhere than at Florissant are described. It includes besides the Myriopoda, 34 of Arachnida, 66 of Neuroptera, 30 of Orthoptera, 266 of Hemiptera, 112 of Coleoptera, 79 of Diptera, 1 of Lepidoptera, and 23 of Hymenoptera; in all, 612 species are displayed in a tabular view at the end. A few notes are given on allied European species with special additional pages. This work forms the second volume of the author's Fossil Insects of North America. Reviewed in *Am. Jour. Sci.*, (3), *XLI*, 517, 1891; also in *Neues Jahrbuch*, 582-584, 1892.

Scudder, Samuel H. Tertiary Rhynchophora of North America. (*Proc. Boston Soc. Nat. Hist.*, Vol. XXV, pp. 370-386. Boston 1892.) This sets forth the general results reached by a study of 193 species found in our western Tertiaries, representing 95 genera, 36 tribes or subfamilies, and 6 of the 10 known families; more than one-half are Curculionidæ and nearly one-fourth Otiorhynchitidæ. The Rhynchitidæ are relatively five times as numerous as at present and include an extinct subfamily which has 2 tribes, 7 genera, and 13 species. Under the title of the Lacustine fauna the Florissant species are distinguished from the Gosinte fauna and those of all other localities which have many species in common which the Lacustine fauna is totally distinct.

Scudder, Samuel H. Work of a Decade upon Fossil Insects, 1880-1889. (*Psyche*, Vol. v, pp. 287-295. Cambridge, 1890.) A review of the advance which has been made during the previous ten years, directing attention to the more important or interesting papers.

Sea-Lizards, Mosassauridæ, Characters and Systematic Position. G. Baur. (*Science*, *xvi*, 262. 1890.)

Section, Geological, at Todd's Fork, Ohio. A. F. Foerste. (*American Geologist*, *II*, 412-419. 1888.) Occurrence of characteristic fossils noted.

Sections of Fossils. A. F. Foerste. (*Science*, *xi*, 22. 1888.)

Sections of Fossils. J. F. James. (*Science*, *xi*, 50. 1888.)

Sedalia Trilobites. A. W. Vogdes. (*Trans. St. Louis Acad. Sci.*, *v*, 615-618. 1892.)

Sedentary Habits of Platyceras. C. R. Keyes. (*Am. Jour. Sci.*, (3), *xxxvi*, 269-272. 1888.)

Sedentary Habits of Platyceras. C. R. Keyes. (*Proc. Iowa Acad. Sci.*, *i*, Pt. *II*, 24. 1892.)

Sedgwick and Murchison: Cambrian and Silurian. J. D. Dana. (*Am. Jour. Sci.*, (3), *xxxix*, 167-180. 1890.) Incidental references to fossils.

Seeley, H. G. Pelvis of Ornithopsis. (*Quart. Jour. Geol. Soc.*, London, Vol. *xlV*, p. 391. London, 1889.) American forms mentioned.

Seely, H. M., Ezra Brainard and. Calciferous Formations in the Champlain Valley. (*Bul. Am. Mus. Nat. Hist.*, Vol. *III*, pp. 1-35. New York, 1890.) List of characteristic fossils is given.

Seely, H. M., E. Brainard and. Calciferous Formation in Champlain Valley. (*Bul. Geol. Soc. America*, *i*, 501-516. 1890.) Many references to fossils.

Seely, H. M., Ezra Brainard and. Original Chazy Rocks. (*American Geologist*, *II*, 323-330. 1888.)

Selwyn, Alfred R. C. Facts Relating to Eozoon Canadense. (*Science*, Vol. *xi*, p. 146. New York, 1888.) Notes supplemental to Sir Wm. Dawson's paper of the same title in the *Geological Magazine*.

Selwyn, Alfred R. C. New Facts relating to Eozoon Canadense. (*Science*, Vol. *xi*, p. 146. New York, 1888.) Comments on an article of the same title by J. W. Dawson.

Selwyn, Alfred R. C. Tracks of Organic Origin in Rocks of the Animikie Group. (*Am. Jour. Sci.*, (3), Vol. *xxxix*, pp. 145-147. New Haven, 1890.) The announcement of the discovery by E. D. Ingall of Taenichnites, with a discussion of the tracks by G. F. Matthew,

Shakopee Limestone at Northfield, Minnesota, *Cryptozoon Minnesotensis*. L. W. Chaney, jr. (Bul. Minnesota Acad. Nat. Sci., III, 280-284. 1891.)

Shale, Fossiliferous Black, in the Triassic Formation of Connecticut. W. M. Davis and S. W. Loper. (Bul. Geol. Soc. America, II, 415-430. 1891.)

Shaler, N. S. Cambrian of Bristol County, Massachusetts. (Bul. Mus. Comp. Zool., Vol. XVI, No. 2. 1888.) Reviewed in Am. Jour. Sci., (3), XXXVII, 76-77, 1889.

Shaler, N. S. Geology of Nantucket. (Bul. U. S. Geol. Sur., No. 53, 54 pp. Washington, 1889.) Contains a list of species from the deposits at Sankaty Head, including Pleistocene and Neocene forms.

Shaler, N. S. Occurrence of Fossils of Cretaceous Age on the Island of Marthas Vineyard. (Bul. Mus. Comp. Zool., Harvard Coll., Vol. XVI, pp. 89-97. 1889.) Following noted:

Camptoneches burlingtonensis Gadb. *Exogyra ostricina*? Lam.

Reviewed in Neues Jahrbuch, 305, 1890.

Shaler, N. S., and August F. Foerste. Preliminary Description of North Attleborough Fossils. (Bul. Mus. Comp. Zool., Vol. XVI, No. 2, Geol. Ser., Vol. II, pp. 21-41, 2 plates. Cambridge, 1888.) The following Lower Cambrian forms are described from Massachusetts:

Obolella crassa, Hall, var.

Obolella?

Fordilla (*troyensis* var. ?)

Lamellibranch?

Scenella reticulata Bill.

Stenotheca rugosa, var. pauper
var. nov.

Stenotheca rugosa, var. abrupta
var. nov.

Stenotheca curvirostra var. nov.

Platyceras primævum, Bill.

Pleurotomaria (*Raphistoma*) *attleborensis* sp. nov.

Hyalolithes quadricostatus sp. nov.

Hyalolithes communis var. *emmonsi* Ford.

Hyalolithes americanus Bill.

Hyalolithes princeps Bill.

Hyalolithes billingsi Walcott?

Hyalithellus micans Bill.

Salterella curvatus sp. nov.

Aristozöe (?)

Microdiscus bellimarginatus sp. nov.

Microdiscus lobatus, Hall.

Paradoxides walcotti, sp. nov.

Ptychoparia mucronatus sp. nov.

Ptychoparia attleborensis sp. nov.

Shell, Inarticulate Brachiopodous. R. P. Whitfield. (Bul. American Mus. Nat. Hist., III, 121, 122. 1890.)

Shells, Marine, Fragments in Till near Boston. W. Upham. (Am. Jour. Sci., (3), XXXVII, 359-372. 1889.)

Shenandoah Valley, Virginia, Mastodon Remains. (American Geologist, VII, 335. 1891.)

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Sherzer, Will H. New Characters of *Diphyllum Sincoense* (Bill) Rom. (American Geologist, Vol. IV, 93-95. Minneapolis, 1889.) Recent notes on the species.

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Chonophyllum perfoliatum Goldfuss.

Chonophyllum elongatum Edwards and Haimé.

Chonophyllum niagarensis Hall.

Chonophyllum magnificum Billings.

Chonophyllum belli Billings.

Sherzer, Will. H.—Continued.

- Chonophyllum ellipticum Hall Chonophyllum vadum Hall.
 and Whitfield. Chonophyllum capax Hall.
 Chonophyllum ponderosum Rom- Chonophyllum pseudohelianathoides sp.
 inger, nov.
 Chonophyllum sedaliense White. Chonophyllum greenei sp. nov.

The following related genera are described:

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 Ptychophyllum.

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Shufeldt, R. W. Collection of Fossil Birds from Equus Beds of Oregon. (Proc. Biol. Soc. Wash., Vol. vi, March. Washington, 1891.)

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Age of Cincinnati Anticlinal. A. F. Foerste. (American Geologist, vii, 97-109. 1891.) Occurrence of characteristic fossils noted.

Age of Point Pleasant, Ohio, Beds. J. F. James. (Proc. Am. As. Adv. Sci., xl, 283-284. 1892.) References made to various species.

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<i>Orthis subcircula.</i>	<i>Goniophora curvata.</i>
<i>Chonetes punctata.</i>	<i>Nucula subtrigona.</i>
<i>Cyrtina triplicata.</i>	<i>Nucula sinuosa.</i>
<i>Syringothyris angulata.</i>	<i>Tellinomya cuneata.</i>
<i>Syringothyris randalli.</i>	<i>Tellinomya diminuens.</i>
<i>Meristella incerta.</i>	<i>Platyceras breve.</i>
<i>Rhynchonella lævis.</i>	<i>Platyceras dorsale.</i>
<i>Rhynchonella medialis.</i>	<i>Platyceras inaequale.</i>
<i>Rhynchonella striata.</i>	<i>Platyceras striatum.</i>
<i>Aviculopecten aequalata.</i>	<i>Platyceras mitelliforme.</i>
<i>Lyriopecten leiopteroides.</i>	<i>Platyceras varians.</i>
<i>Leptodesma parallelum.</i>	<i>Acervularia communis.</i>
<i>Ptychopteria obsoleta.</i>	<i>Cladopora rectilineata.</i>
<i>Modiomorpha rigidula.</i>	<i>Homalonotus trentonensis.</i>

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| <i>Phaneropleura curtum</i> Whiteaves. | <i>Glyptolepis quebecensis</i> , Whiteaves. |
| <i>Bothriolepis canadensis</i> Whiteaves. | <i>Ensthenopteron fordii</i> Whiteaves. |
| <i>Cephalaspis laticeps</i> sp. nov. | <i>Cheirolepis canadensis</i> Whiteaves. |
| <i>Acanthodus cocinnus</i> Whiteaves. | <i>Phlyctænius</i> gen. nov. |
| <i>Mesacanthus affinis</i> Whiteaves. | <i>Cephalaspis campbelltownensis</i> Whiteaves. |
| <i>Glyptolepis quebecensis</i> Whiteaves. | <i>Cephalaspis whiteavesi</i> , sp. nov. |
| | <i>Gyracanthus incurvus</i> , sp. nov. |
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- Types Fossiles de l'Éocène du bassin de Paris récemment découvertes en Amérique.** W. H. Dall. (Bul. Soc. Zool. de France, XV, 97, 98. 1890.)
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Ulrich, E. O. American Paleozoic Sponges. (Geol. Sur. Illinois, Vol. VIII, pp. 209-241. Springfield, 1890.) The brief incidental remarks are followed by short accounts of the nature of preservation and the general distribution of these forms. The classification is alluded to. The family Anthaspidellidæ is described as new and its various structures figured. A tabular list and classification of the American Paleozoic species are given.

Ulrich, E. O. *Beecherella*: A new Genus of Lower Helderberg Ostracoda. (American Geologist, Vol. VIII, pp. 197-204, 1 plate. Minneapolis, 1891.) The following new forms are figured and described from the Silurian of Albany County, New York:

<i>Beecherella</i> .	<i>Beecherella ovata</i> .
<i>Beecherella carinata</i> .	<i>Beecherella cristata</i> .
<i>Beecherella subtumida</i> .	<i>Beecherella navicula</i> .
<i>Beecherella subtumida</i> , var. in- termedia.	<i>Beecherella angularis</i> .

Ulrich, E. O. List of Bryozoans of the Waverly Group in Ohio, with Description of New Species. (Bul. Sci. Lab. Dennison Univ., Vol. IV, pt. I, pp. 62-92, 2 plates. Granville, 1888.) The following species are described:

<i>Fenestella herrickana</i> .	<i>Taeniodictya interpolata</i> .
<i>Fenestella meekana</i> .	<i>Cystodictya zigzag</i> .
<i>Fenestella albida</i> , var. richfield- ensis.	<i>Cystodictya simulans</i> .
<i>Fenestella foliata</i> .	<i>Cystodictya angusta</i> .
<i>Fenestella subflexuosa</i> .	<i>Streblotrypa obliqua</i> .
<i>Fenestella cavernosa</i> .	<i>Streblotrypa hertzeri</i> .
<i>Polypora impressa</i> .	<i>Streblotrypa amplexa</i> .
<i>Pinnatopora intermedia</i> .	<i>Streblotrypa multiporatr</i> .
<i>Pinnatopora simulatrix</i> .	<i>Streblotrypa striata</i> .
<i>Pinnatopora curvata</i> .	<i>Streblotrypa regularis</i> .
<i>Pinnatopora subangulata</i> .	<i>Streblotrypa</i> (? <i>Leioclema</i>) <i>denticulata</i> .
<i>Pinnatopora minor</i> .	<i>Rhombopora ohioensis</i> .

Ulrich, E. O. Contributions to Micro-Paleontology of the Cambro-Silurian Rocks of Canada. (Geol. and Nat. Hist. Sur. Canada, Micro-Paleontology, Part II, pp. 27-57, 2 plates. Montreal, 1889.) A study of the Polyzoa and Ostracoda from the Cambro-Silurian Rocks of Manitoba, with descriptions and figures of the following species:

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| <i>Proboscina anulporoides</i> Nicholson. | <i>Goniotrypa bilateralis</i> sp. nov. |
| <i>Proboscina frondosa</i> Nicholson. | <i>Pachydictya hexagonalis</i> sp. nov. |
| <i>Monticulipora parastica</i> , var. <i>plana</i> , var. nov. | <i>Pachydictya magnipora</i> sp. nov. |
| <i>Monticulipora wetherbyi</i> Ulrich. | <i>Ptilodictya whiteavesi</i> sp. nov. |
| <i>Homotrypa</i> sp. ? | <i>Arthroclema angulare</i> Ulrich. |
| <i>Diplotrypa westoni</i> sp. nov. | <i>Helopora harrisi</i> James. |
| <i>Batostoma manitobense</i> sp. nov. | <i>Sceptropora facula</i> Ulrich. |
| <i>Petigopora scabiosa</i> sp. nov. | <i>Nematopora</i> (?) sp. nov. |
| <i>Batostomella gracilis</i> Nicholson. | <i>Phylloporina trentonensis</i> Nicholson. |
| <i>Bythopora striata</i> sp. nov. | <i>Bythocypris cylindrica</i> Hall. |
| <i>Monotrypella quadrata</i> Rominger. | <i>Leperditia subcylindrica</i> sp. nov. |
| <i>Fistulipora</i> ? <i>laxata</i> sp. nov. | <i>Aparchites minutissimus</i> Hall. |
| <i>Strictopora</i> or <i>Rhinidictya</i> sp. ? | <i>Aparchites unicornis</i> Ulrich. |
| <i>Dicranopora fragilis</i> Billings. | <i>Primitia lativia</i> sp. nov. |
| <i>Dicranopora emacerata</i> Nicholson. | <i>Primitia</i> (?) (<i>Beyrichia</i>) <i>parallela</i> sp. nov. |
| <i>Goniotrypa</i> gen. nov. (provisional.) | <i>Eurychilina</i> gen. nov. |
| | <i>Eurychilina reticulata</i> sp. nov. |
| | <i>Eurychilina manitobensis</i> sp. nov. |
| | <i>Strepula quadrilirata</i> Hall & Whitfield. |
| | <i>Strepula lunatifera</i> sp. nov. |

Reviewed in *Am. Geologist*, 5, 107, 1890; also *Ottawa Naturalist*, III, No. 3, 1889; and *Neues Jahrbuch*, 334, 1890.

Ulrich, E. O. Correlation of the Lower Silurian Horizons of Tennessee and the Ohio and Mississippi Valleys with those of New York and Canada. (*American Geologist*, Vol. I, pp. 100-110, 179-190, and 305-315. Minneapolis, 1888.) Numerous references to fossils.

Ulrich, E. O. Correlation of Lower Silurian Horizons of Tennessee and of the Ohio and Mississippi Valleys with those of New York and Canada. (*American Geologist*, Vol. II, pp. 39-44. Minneapolis, 1888.) A continuation of the author's papers in *American Geologist*, Vol. I.

Ulrich, E. O. *Lingulasma*: A New Genus and Eight New Species of *Lingula* and *Trematis*. (*American Geologist*, Vol. III, pp. 377-391. Minneapolis, 1889.) The following described as new:

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| <i>Lingula procteri</i> . | <i>Lingula modesta</i> . |
| <i>Lingula bisulcata</i> . | <i>Lingulasma</i> . |
| <i>Lingula whitfieldi</i> . | <i>Lingulasma schucherti</i> . |

Ulrich, E. O. *Lingulasma*: New Genus and Eight New Species of *Lingula* and *Trematis*. (*American Geologist*, Vol. IV, pp. 21-25. Minneapolis, 1889.) The following described as new:

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| <i>Trematis fragilis</i> . | <i>Trematis umbonata</i> . |
| <i>Trematis crassipuncta</i> . | <i>Trematis oblata</i> . |

Ulrich, E. O. New and Little Known American Paleozoic Ostracoda. (*Jour. Cincinnati Soc. Nat. Hist.*, Vol. XIII, pp. 104-137 and 173-211, plates 7-18. Cincinnati, 1890-1891.) The new species are:

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| <i>Entomis madisonensis</i> . | <i>Ctenobolbina ciliata</i> , var. <i>curta</i> . |
| <i>Pontocypris</i> (?) <i>illinoisensis</i> . | <i>Ctenobolbina ciliata</i> , var. <i>emaciata</i> . |
| <i>Ctenobolbina</i> . | <i>Ctenobolbina alata</i> . |
| <i>Ctenobolbina ciliata</i> Emmons. | <i>Ctenobolbina bispinosa</i> . |

Ulrich, E. O.—Continued.

<i>Ctenobolbina tumida.</i>	<i>Eurychilina æqualis.</i>
<i>Tetradella.</i>	<i>Eurychilina obesa.</i>
<i>Tetradella quadrilirata</i> Hall and Whitfield.	<i>Eurychilina striatmarginata</i> Miller.
<i>Tetradella oculifera</i> Hall.	<i>Primitia centralis.</i>
<i>Tetradella subquadrans.</i>	<i>Primitia perminima.</i>
<i>Bollia persulcata</i> Ulrich.	<i>Primitia impressa.</i>
<i>Bollia pumila.</i>	<i>Primitia cincinnatiensis</i> Miller.
<i>Depranella.</i>	<i>Primitia medialis.</i>
<i>Depranella crassinoda.</i>	<i>Primitia milleri.</i>
<i>Depranella nitida.</i>	<i>Primitia glabra.</i>
<i>Depranella macer.</i>	<i>Primitia nodosa.</i>
<i>Depranella ampla.</i>	<i>Primitia nitida.</i>
<i>Depranella elongata.</i>	<i>Primitia rudis.</i>
<i>Jonesella.</i>	<i>Primitia (?) sculptilis.</i>
<i>Jonesella crepidiformis</i> Ulrich.	<i>Aparchites oblongus.</i>
<i>Jonesella pedigera.</i>	<i>Leperditia flabulites</i> Conrad.
<i>Jonesella digitata.</i>	<i>Leperditia linneyi.</i>
<i>Jonesella crassa.</i>	<i>Leperditia tumidula.</i>
<i>Placentula marginata.</i>	<i>Leperditia appressa.</i>
<i>Placentula inornata.</i>	<i>Isochilina subnodosa.</i>
<i>Beyrichia (Primitia?) parallela</i> Ulrich.	<i>Isochilina saffordi.</i>
<i>Eurychilina subradiata.</i>	<i>Isochilina ampla.</i>
<i>Eurychilina longula.</i>	<i>Isochilina kentuckyense.</i>
<i>Eurychilina granosa.</i>	<i>Isochilina amiana.</i>
	<i>Isochilina amiana, var. insignis.</i>

Reviewed in Neues Jahrbuch, 257-259, 1892.

Ulrich, E. O. New Lamellibranchiata. (American Geologist, Vol. v, pp. 270-275. Minneapolis, 1890.) The following species described and figured as new from the Silurian:

<i>Modiolopsis oblonga.</i>	<i>Modiolopsis pulchella.</i>
<i>Modiolopsis subparallela.</i>	<i>Modiolopsis subtruncata.</i>
<i>Modiolopsis milleri.</i>	<i>Modiolopsis alata.</i>
<i>Modiolopsis oviformis.</i>	<i>Modiolopsis parva.</i>
<i>Modiolopsis simulatrix.</i>	<i>Modiolopsis angustata.</i>

Ulrich, E. O. New Lamellibranchiata. (American Geologist, Vol. vi, pp. 173-181 and 383-389. Minneapolis, 1890.) The following genera and species described and figured as new from the Silurian:

<i>Ischyrodonta.</i>	<i>Whitella compressa.</i>
<i>Ischyrodonta truncata.</i>	<i>Whitella schofieldi</i> Ulrich
<i>Ischyrodonta elongata.</i>	<i>Whitella truncata.</i>
<i>Whitella.</i>	<i>Whitella subornata.</i>
<i>Whitella obliquata.</i>	<i>Cypricardites grandis.</i>
<i>Whitella umbonata.</i>	

Ulrich, E. O. New Lamellibranchiata. (American Geologist, Vol. x, pp. 96-104. Minneapolis, 1892.) One genus and eight species described and figured as new:

<i>Cleionychia.</i>	<i>Technophorus subacutus.</i>
<i>Cleionychia rhomboidea.</i>	<i>Technophorus divaricatus.</i>
<i>Cypricardites terminalis.</i>	<i>Technophorus filistriatus.</i>
<i>Cypricardites oviformis.</i>	<i>Tellinomya longa.</i>
<i>Cypricardites ? modestus.</i>	

Ulrich, E. O. New Lower Silurian Lamellibranchiata, Chiefly from Minnesota Rocks. (Geol. and Nat. Hist. Sur. Minnesota, Nineteenth Ann. Rep., for 1890, pp. 211-248. Minneapolis, 1892.) The following species described with figures as new:

<i>Tellinomya nitida</i> sp. nov.	<i>Cypricardites sardesoni</i> sp. nov.
<i>Tellinomya compressa</i> sp. nov.	<i>Cypricardites obtusifrons</i> sp. nov.
<i>Tellinomya planodorsata</i> sp. nov.	<i>Cypricardites glabellus</i> sp. nov.
<i>Tellinomya intermedia</i> sp. nov.	<i>Cypricardites cingulata</i> sp. nov.
<i>Tellinomya subrotunda</i> sp. nov.	<i>Cypricardites germanus</i> sp. nov.
<i>Tellinomya similis</i> sp. nov.	<i>Cypricardites tenellus</i> sp. nov.
<i>Tellinomya recurva</i> sp. nov.	<i>Cypricardites nanus</i> sp. nov.
<i>Technophorus</i> (?) <i>extenuatus</i> sp. nov.	<i>Cypricardites haynianus</i> (?) Safford.
<i>Cleidophorus consuetus</i> sp. nov.	<i>Matheria rugosa</i> sp. nov.
<i>Modiolopsis plana</i> Hall.	<i>Ischyrodonta ovalis</i> sp. nov.
<i>Modiolopsis similis</i> sp. nov.	<i>Plethocardia</i> gen. nov.
<i>Modiolopsis subelliptica</i> sp. nov.	<i>Plethocardia umbonata</i> , sp. nov.
<i>Modiolopsis concava</i> sp. nov.	<i>Plethocardia suberecta</i> sp. nov.
<i>Orthodesma minnesotense</i> sp. nov.	<i>Whitella præcipita</i> Ulrich.
<i>Orthodesma saffordi</i> sp. nov.	<i>Whitella concentrica</i> sp. nov.
	<i>Cuneamya sulcodorsata</i> sp. nov.

Reviewed in Am. Jour. Sci., (3), XLIV, 179, 1892.

Ulrich, E. O. New Lower Silurian Ostracoda, No. 1. (American Geologist, Vol. x, pp. 263-270, 1 plate. Minneapolis, 1892.) The following genera and species described and figured as new:

<i>Leperditia tumida</i> .	<i>Leperditia</i> (Primitia) <i>dorsicornis</i> .
<i>Leperditia mundula</i> .	<i>Leperditia granilabiata</i> .
<i>Leperditia æquilatera</i> .	<i>Leperditia millepunctata</i> .
<i>Leperditia inflata</i> .	<i>Leperditia fimbriata</i> .
<i>Leperditia germana</i> .	<i>Schmidtella</i> .
<i>Leperditia sulcata</i> , var. <i>ventricornis</i> .	<i>Schmidtella crassimarginata</i> .

Ulrich, E. O. Nomenclature of Cincinnati Group Fossils. (American Geologist, Vol. I, pp. 333-335. Minneapolis, 1888.) A short note on the nomenclature of certain species.

Ulrich, E. O. Paleozoic Bryozoa. (Geol. Sur. Illinois, Vol. VIII, pp. 283-688. Springfield, 1890.) The memoir is preceded by an explanation of the terms used. Chapter I is a description of the general and comparative structure of the Paleozoic Bryozoa. Chapter II is on the classification and interrelations of families and genera. The original Gymnolamata is made to include all the fossil bryozoa. They are arranged under three suborders; Cyclostomata, Trepotomata, and Cryptostomata, which are new groups and are referred to Ctenostomata and Cheilostomata. The first of these suborders contain one family, Ascodictyonidae. The second contains several groups, while the third is arranged in nine families, which are fully described. A synopsis of the classification is given in which the families and genera are defined. They are as follows:

Ascodictyonidae.	Frondiporidae.
Ascodictyon.	Scenellopora.
Rhopalonaria.	Phaceloporidæ fam. nov.
Tubuliporidae.	Phacelopora gen. nov.
Stomatopora.	Entalophoridae.
Proboscina.	Diploclema gen. nov.
Berenicea.	Mitoclema.

Ulrich, E. O.—Continued.

- Protocrisina gen. nov.
 Monticuliporidae.
 Monticulipora.
 Atactoporella.
 Homotrypella.
 Peronopora.
 Homotrypa.
 Prasopora.
 Heterotrypidæ fam. nov.
 Heterotrypa.
 Dekayia.
 Petigopora.
 Dekayella.
 Calloporidæ fam. nov.
 Callopora.
 Aspidopora.
 Calloporella.
 Thematoporidae fam. nov.
 Trematopora.
 Nicholsonella gen. nov.
 Constellaria.
 Stellipora.
 Idiortrypa.
 Batostomellidæ fam. nov.
 Batostomella.
 Stenopora.
 Anisotrypa.
 Bythopora.
 Callotrypa.
 Leioclema.
 Amplexoporidae fam. nov.
 Amplexopora.
 Monotrypella.
 Petalotrypa.
 Atactopora.
 Leptotrypa.
 Discotrypa.
 Diplotrypidæ fam. nov.
 Diplotrypa.
 Batostoma.
 Monotrypa.
 Ceramoporidæ.
 Ceramopora.
 Ceramoporella.
 Crepipora.
 Diamesopora.
 Chiloporella.
 Anolotichia gen. nov.
 Spatiopora.
 Fistuliporidae.
 Fistulipora.
 Eridopora.
 Chilotrypa.
 Meekopora.
 Strotopora.
 Lichenotrypa.
 Buskopora.
 Selenopora.
 Botryllopora.
 Pinacotrypa gen. nov.
 Cystodictynidæ.
 Cystodictya.
 Coscinium.
 Dichotrypa gen. nov.
 Actinotrypa gen. nov.
 Tæniopora.
 Prismopora.
 Scalaripora.
 Evactinopora.
 Glyptopora.
 Rhinoporidæ fam. nov.
 Rhinopora.
 Stictoporidae.
 Stictopora.
 Eurydictya gen. nov.
 Dieranopora.
 Goniortrypa.
 Eupilopora gen. nov.
 Pachydictya.
 Phyllodictya.
 Ptilodictyonidæ.
 Ptilodictya.
 Clathropora.
 Phænopora.
 Graptodictya.
 Arthropora.
 Tæniodictya gen. nov.
 Ptilotrypa gen. nov.
 Stictotrypa gen. nov.
 Stictoporella.
 Intrapora.
 Fenestellidæ.
 Fenestella.
 Semicoscinium.
 Fenestrapora.
 Isotrypa.
 Unitrypa.
 Hemitrypa.
 Helicopora.
 Archimedes.
 Lyropora.
 Fenestralia.
 Polypora.
 Thamniscus.
 Phylloporella.
 Acanthocladiidæ.
 Pinnatopora.
 Septopora.

Ulrich, E. O.—Continued.

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| Acanthocladia. | Helopora. |
| Synocladia. | Nematopora gen. nov. |
| Diplopora. | Rhabdomesontidae. |
| Ptilopora. | Rhombopora. |
| Spragiioporidae fam. nov. | Rhabdomeson. |
| Sphragiopora gen. nov. | Cœloconus gen. nov. |
| Phylloporinidae fam. nov. | Bactropora. |
| Phylloporina gen. nov. | Streblotrypidae. |
| Chainodictyon. | Streblotrypa. |
| Drymotrypa gen. nov. | Worthenopora gen. nov. |
| Arthrostylidae. | Cyclopora. |
| Arthrostylus gen. nov. | Proutella gen. nov. |
| Arthroclema. | Cycloporella gen. nov. |
| Sceptropora gen. nov. | Heliotrypa. |

The following species are described, most of them as new:

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| Protocrisina exigua. | Stenopora montifera. |
| Phacelopora pertenuis. | Stenopora emaciata. |
| Phacelopora constricta. | Stenopora intercalaris. |
| Monticulipora lamellosa. | Stenopora angularis. |
| Monticulipora winchelli. | Stenopora intermittens. |
| Homotrypa arbuscula. | Stenopora tuberculata Prout. |
| Homotrypa gelasinosa. | Stenopora cestriensis. |
| Homotrypa fiabellaris. | Stenopora ramosa. |
| Homotrypella contexta. | Stenopora meekana. |
| Heterotrypa prolifica. | Stenopora rudis. |
| Heterotrypa inflecta. | Stenopora carbonaria Worthen. |
| Heterotrypa singularis. | Stenopora carbonaria, var. maculosa. |
| Dekayia devonica. | Stenopora carbonaria, var. conferta. |
| Callopora subnodosa. | Stenopora ? signata. |
| Calloporella ? nodulosa. | Anisotrypa fistulosa. |
| Trematopora debilis. | Anisotrypa ramulosa. |
| Trematopora nitida. | Anisotrypa solida. |
| Trematopora calloporoides. | Amplexopora affinis. |
| Nicholsonella ponderosa. | Amplexopora pustulosa. |
| Nicholsonella cumulata. | Monotrypella crassimuralis. |
| Constellaria parva. | Monotrypella appressa. |
| Leiocelema wilmingtontense. | Petalotrypa compressa. |
| Leiocelema occidens, Hall and Whitfield. | Petalotrypa delicata. |
| Leiocelema minutum, Rominger. | Leptotrypa hexagonalis. |
| Leiocelema wachsmuthi. | Leptotrypa filiosa D'Orbigny. |
| Leiocelema subglobosum. | Leptotrypa stidhami. |
| Leiocelema gracillium. | Leptotrypa semipilaris. |
| Leiocelema punctatum Hall. | Diplotrypa patella. |
| Leiocelema ? foliatum. | Diplotrypa ? dubia. |
| Leiocelema ? araneum. | Batostoma variabile. |
| Batostomella simulatrix. | Batostoma imperfectum. |
| Batostomella obliqua. | Monotrypa rectimuralis. |
| Batostomella interstincta. | Ceramopora imbricata Hall. |
| Batostomella spinulosa. | Ceramoporella distincta. |
| Batostomella abrupta. | Ceramoporella stellata. |
| Batostomella nitidula. | Ceramoporella granulosa. |
| Stenopora americana. | Ceramoporella ? ohioensis, Nicholson. |
| Stenopora americana, var. varsovensis. | Diamesopora vaupeli. |
| | Diamesopora communis. |
| | Crepipora simulans. |

Ulrich, E. O.—Continued.

- Crepipora epidermata*.
Crepipora impressa.
Crepipora solida.
Crepipora hemisphaerica.
Anolotichia ponderosa.
Fistulipora communis.
Fistulipora monticulata.
Fistulipora astrica.
Fistulipora collina.
Fistulipora foordi.
Fistulipora spinulifera Rominger.
Fistulipora (? *Dichotrypa*) *corrugata*.
Fistulipora stellifera Rominger.
Meekopora eximia.
Meekopora approximata.
Meekopora clausa.
Meekopora ? *aperta*.
Strotopora perminuta.
Strotopora foveolata.
Strotopora dermatia.
Buskopora lunata Rominger.
Botryllopora socialis Nicholson.
Cystodictya hamiltonensis.
Cystodictya nitida.
Cystodictya americana.
Cystodictya pustulosa.
Cystodictya lineata, var. *major*.
Coscinium latum.
Dichotrypa grandis.
Dichotrypa foliata.
Dichotrypa elegans.
Dichotrypa intermedia.
Dichotrypa flabellum Rominger.
Dichotrypa lyroides.
Actinotrypa peculiaris Rominger.
Tæniopora occidentalis.
Prismopora trifolia Rominger.
Prismopora minima.
Scalaripora separata.
Scalaripora approximata.
Evactinopora radiata Meek & Worthen.
Evactinopora sexradiata Meek & Worthen.
Evactinopora quinquerradiata.
Evactinopora gaudis Meek & Worthen.
Glyptopora plumosa Prout.
Glyptopora sagenella Prout.
Glyptopora sagenella, var. *caliculosa*.
Glyptopora sagenella, var. *lata*.
Glyptopora michelinia Prout.
Glyptopora pinnata.
Glyptopora keyserlingi Prout.
Glyptopora elegans Prout.
Glyptopora megastoma.
Glyptopora punctipora.
Eudrydictya calhouensis.
Eurydictya montifera.
Eurydictya sterlingensis.
Pachydictya everetti.
Pachydictya splendens.
Pachydictya gigantea.
Pachydictya firma.
Pachydictya fenestelliformis Nicholson.
Euspilopora serrata.
Euspilopora ? *barrisi*.
Tæniodictya ramulosa.
Tæniodictya ramulosa, var. *burlingtonensis*.
Tæniodictya frondosa.
Tæniodictya cingulata.
Tæniodictya subrecta.
Ptilotrypa obliquata.
Intrapora cosciniformis Nicholson.
Stictoperella basalis.
Stictoporella ? *undulata*.
Fenestella vera.
Fenestella filistriata.
Fenestella burlingtonensis.
Fenestella rudis.
Fenestella limitaris.
Fenestella regalis.
Fenestella compressa.
Fenestella compressa, var. *nododorsalis*.
Fenestella multispinosa.
Fenestella triserialis.
Fenestella funicula.
Fenestella cingulata.
Fenestella serratula.
Fenestella exigua.
Fenestella tenax.
Fenestella cestriensis.
Fenestella flexuosa.
Fenestella elevatipora.
Fenestella delicatula.
Fenestella modesta.
Fenestella perminuta.
Fenestella wortheni.
Fenestella sevellensis.
Fenestella mimica.
Fenestella conradi.
Fenestellai naqualis.
Semicoscium planodorsatum.
Semicoscium rhombicum.

Ulrich, E. O.—Continued.

- Fenestrapora occidentalis*.
Hemitrypa tenera.
Hemitrypa proutana.
Hemitrypa proutana, var. *vermifera*.
Hemitrypa proutana, var. *nodulosa*.
Hemitrypa nodosa.
Hemitrypa aspera.
Hemitrypa perstriata.
Hemitrypa pateriformis.
Archimedes negligens.
Archimedes grandis.
Archimedes owenanus Hall.
Archimedes wortheni Hall.
Archimedes perminimus.
Archimedes compactus.
Archimedes communis.
Archimedes intermedius.
Archimedes swallovanus Hall.
Archimedes terebriformis.
Archimedes invaginatus.
Archimedes proutanus.
Archimedes meekanus Hall.
Archimedes distans.
Archimedes sublaxus.
Archimedes laxus Hall.
Lyropora ranosculum.
Lyropora subquadrans Hall.
Lyropora quincuncialis Hall.
Lyropora divergens.
Lyropora ovalis.
Polypora shumardi Prout.
Polypora burlingtonensis.
Polypora halliana Prout.
Polypora maccoyana.
Polypora (?) *gracilis* Prout.
Polypora simulatrix.
Polypora retrorsa.
Polypora radialis.
Polypora biseriata.
Polypora varsoviensis Prout.
Polypora spininodata.
Polypora cestriensis.
Polypora tuberculata Prout.
Polypora corticosa.
Polypora complanata.
Polypora spinulifera.
Polypora approximata.
Polypora whitei.
Polypora whitei, var. *inculcata*.
Polypora nodocarinata.
Polypora submarginata.
Polypora distincta.
Polypora crassa.
- Fenestralia sancti-ludovici* Prout.
Fenestralia sancti-ludovici, var. *compacta*.
Thamniscus divaricans.
Thamniscus sculptilis.
Thamniscus furcillatus.
Thamniscus ramulosus.
Thamniscus ramulosus, var. *sevillensis*.
Thamniscus octonarius.
Phyllopora aspera.
Phyllopora superba.
Pinnatopora youngi.
Pinnatopora vinei.
Pinnatopora flexuosa.
Pinnatopora striata.
Pinnatopora conferta.
Pinnatopora tenuiramosa.
Pinnatopora bellula.
Pinnatopora trilineata Meek.
Ptilopora acuta.
Ptilopora valida.
Ptilopora cylindracea.
Ptilopora paupera.
Ptilopora prouti Hall.
Septopora cestriensis Prout.
Septopora subquadrans.
Septopora decipiens.
Septopora biserialis, Swallow.
Septopora biserialis, var. *nervata*.
Septopora pinnata.
Septopora robusta.
Septopora robusta, var. *intermedia*.
Septopora delicatula.
Acanthocladia fruticosa.
Diplopora bifurcata.
Diplopora biserialis.
Sphragiopora parasitica.
Phylloporina granistriata.
Chainodictyon laxum, var. *minor*.
Arthroclema angulare.
Helopora imbricata.
Nematopora retrosa.
Nematopora alternata.
Nematopora fragilis.
Nematopora delicatula.
Rhombopora subannulata.
Rhombopora sulcifera.
Rhombopora lineinodis.
Rhombopora dichotoma.
Rhombopora gracilis.
Rhombopora exigua.
Rhombopora angustata.
Rhombopora incrassata.
Rhombopora varians.
Rhombopora transversalis.

Ulrich, E. O.—Continued.

<i>Rhombopora attenuata.</i>	<i>Cœloconus granosus.</i>
<i>Rhombopora?</i> <i>asperula.</i>	<i>Streblotrypa major.</i>
<i>Rhombopora?</i> <i>aspiralis.</i>	<i>Streblotrypa radialis.</i>
<i>Rhombopora simulatrix.</i>	<i>Streblotrypa nickelsi.</i>
<i>Rhombopora decipiens.</i>	<i>Streblotrypa subspinoso.</i>
<i>Rhombopora tabulata.</i>	<i>Streblotrypa distincta.</i>
<i>Rhombopora persimilis.</i>	<i>Worthenopora spinosa.</i>
<i>Rhombopora minor.</i>	<i>Proutella discoidea</i> Prout.
<i>Rhombopora tenuirama.</i>	<i>Worthenopora spatulata</i> Prout.
<i>Rhombopora nickelsi.</i>	<i>Cyclopora expatiata.</i>
<i>Acanthoclema confluens.</i>	<i>Cyclopora fungia</i> Prout.
<i>Bactropora simplex.</i>	<i>Cycloporella spinifera.</i>
<i>Cœloconus rhombicus.</i>	<i>Cycloporella?</i> <i>perversa.</i>

Ulrich, E. O. Preliminary Description of New Lower Silurian Sponges. (American Geologist, Vol. III, pp. 233-248. 1889.) The following described as new:

<i>Rauffella.</i>	<i>Saccospongia danvillensis.</i>
<i>Rauffella filosa.</i>	<i>Dystacospongia minima.</i>
<i>Rauffella palmipes.</i>	<i>Streptospongia labyrinthica.</i>
<i>Leptopterion mammiferum.</i>	<i>Hindia parva.</i>
<i>Heterospongia.</i>	<i>Cylindrocœlia.</i>
<i>Heterospongia subramosa.</i>	<i>Cylindrocœlia endoceroidea.</i>
<i>Heterospongia knotti.</i>	<i>Cylindrocœlia covingtonensis.</i>
<i>Heterospongia aspera.</i>	<i>Cylindrocœlia minnesotensis.</i>
<i>Saccospongia.</i>	<i>Cylindrocœlia minor.</i>
<i>Saccospongia rudis.</i>	

Ulrich, E. O. Sceptropora: A New Genus of Bryozoa, with Remarks on Helopora (Hall), and other Genera of that Type. (American Geologist, Vol. I, pp. 228-234. Minneapolis, 1888.) The following described and figured as new from the Silurian of Minnesota:

Sceptropora.	Sceptropora facula.
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Ulrich, E. O. Sponges of the Devonian and Carboniferous Systems. (Geol. Sur. Illinois, Vol. VIII, pp. 243-251. Springfield, 1890.) The following genera and species are described as new:

<i>Hystriospongia carbonaria.</i>	<i>Lasiocladia hindei.</i>
<i>Batospongia spicata.</i>	<i>Syringophyllum.</i>
<i>Belemnospungia.</i>	<i>Syringophyllum wortheni.</i>
<i>Belemnospungia fascicularis.</i>	

Ulrich, E. O. Two New Silurian Species of Lichas. (American Geologist, Vol. X, pp. 271-272. Minneapolis, 1892.) The following species described and figured as new from the Silurian of Minnesota:

<i>Lichas (Hopolichas) robbinsi.</i>	<i>Lichas (Hopolichas) bicornis.</i>
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Ulrich, E. O., and Oliver Everett. Lower Silurian Sponges. (Geol. Sur. Illinois, Vol. VIII, pp. 255-282. Springfield, 1890.) The following species and genera are described and figured as new:

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<i>Anthaspidella mammulata.</i>	<i>Zittelella typicalis.</i>
<i>Anthaspidella florifera.</i>	<i>Zittelella typicalis</i> , var. <i>pistilliformis.</i>
<i>Anthaspidella parvistellata.</i>	<i>Zittelella typicalis</i> , var. <i>turbinata.</i>
<i>Anthaspidella scutula.</i>	<i>Zittelella typicalis</i> , var. <i>subrotunda.</i>
<i>Anthaspidella grandis.</i>	<i>Zittelella lobata.</i>
<i>Anthaspidella firma.</i>	<i>Zittelella inosculata.</i>
<i>Anthaspidella fenestrata.</i>	<i>Edriospongia.</i>
<i>Anthaspidella obliqua.</i>	<i>Edriospongia basalis.</i>
<i>Anthaspidella?</i> <i>magnifica.</i>	<i>Streptosolen.</i>

Ulrich, E. O.—Continued.

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| Streptosolen obconicus. | Dystactospongia minor. |
| Calathium ?? (? Zittellella) in. | Dystactospongia rudis. |
| felix. | Camarocladia. |
| Hindia inæqualis. | Camarocladia dichotoma. |
| Strotospongia. | Actinostroma ? trentonense. |
| Strotospongia maculosa. | |

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- Plesiosaur from Niobrara Cretaceous of Kansas. S. W. Williston. (Trans. Kansas Acad. Sci., XII, 174-178. 1890.)
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- Restoration of Stegosaurus. O. C. Marsh. (*Am. Jour. Sci.*, (3), XLII, 189-191. 1891.)
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- Rhizodus from St. Louis Limestone at Alton, Ill. J. S. Newberry. (*Trans. N. Y. Acad. Sci.*, VII, 165. 1888.)
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- Vertebrata** of Swift Current River. E. D. Cope. (American Naturalist, xxiii, 151-155. 1889.)
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- Vertebrate** Remains from Peace Creek, Florida. J. Leidy. (Trans. Wagner Free Inst. Sci., ii, 19-81. 1889.)
- Vertebrates**, Fossil, from Florida. (Proc. Acad. Nat. Sci., Phila., xlii, 64, 65. 1890.)
- Vertebrates**, Fossil, from Florida. J. Leidy. (Proc. Acad. Nat. Sci., Phila., xli, 96-99. 1889.)
- Vertebrates**, Homologies of Posterior Cranial Arches in Reptilia. E. D. Cope. (Trans. Am. Philos. Soc., xvii, 942-944. 1892.)
- Virginia**.
- Cambrian Rocks of Virginia and Southern Appalachians. C. D. Walcott. (Am. Jour. Sci., (3), 2-57. 1892.) Various fossils considered.
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- Lafayette Formation in Virginia, Fossils. N. H. Darton. (American Geologist, ix, 161-183. 1892.)
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- Virginia**, Fossils in Lafayette Formation. N. H. Darton. (American Geologist, ix, 181-183. 1892.)
- Visual** Area in Trilobite, Phacops Rana, Green, Structure and Development. J. M. Clarke. (Journal Morphology, ii, 253-270. 1888.)

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<i>Agnostus desideratus</i> Walcott.	<i>Agnostus tessella</i> Matthew.
<i>Agnostus canadensis</i> Billings.	<i>Agnostus acadicus</i> Hartt.
<i>Agnostus communis</i> Hall and White.	<i>Agnostus acadicus</i> , var. <i>declives</i> Matthew.
<i>Agnostus coloradensis</i> Shumard.	<i>Agnostus regulus</i> Matthew.
<i>Agnostus orion</i> Billings.	<i>Agnostus umbo</i> Matthew.
<i>Agnostus josepha</i> Hall.	<i>Agnostus vir</i> Matthew.
<i>Agnostus richmondensis</i> Walcott.	<i>Agnostus vir</i> , var. <i>concinus</i> Matthew.
<i>Agnostus maladensis</i> Meek.	<i>Agnostus americanus</i> Billings.
<i>Agnostus bidens</i> Meek.	<i>Agnostus disparilis</i> Hall.
<i>Agnostus tumidosus</i> Hall and Whitefield.	<i>Agnostus parilis</i> Hall.
<i>Agnostus interstrictus</i> White.	<i>Agnostus prolongus</i> Hall & Whitfield.
<i>Agnostus acutilobus</i> Matthew.	<i>Agnostus seclusus</i> Walcott.
<i>Agnostus obtusilobus</i> Matthew.	<i>Agnostus galba</i> Billings.
	<i>Agnostus fabius</i> Billings.

Vogdes, A. W. Bibliography of Paleozoic Crustacea from 1688 to 1889. (Bul. U. S. Geol. Sur., No. 63, 177 pp. Washington, 1890.) A complete authors' list. Reviewed in Am. Jour. Sci., (3), xli, 436-437, 1891; Am. Geologist, vii, 379-381, 1891.

Vogdes, A. W. Catalogue of North American Paleozoic Crustacea confined to Non-Trilobitic Genera and Species. (Ann. N. Y. Acad. Sci., Vol. v, No. 1, 2 plates. New York, 1889.) Description of species; with *Stringocaris* gen. nov. Reviewed in Neues Jahrbuch, 153, 154, 1891.

Vogdes, A. W. Description of two New Species of Carboniferous Trilobites. (Trans. New York Acad. Sci., Vol. vii, pp. 248-250. New York, 1888.) *Phillipsia sampsoni* and *Griffithides sedaliensis* are described as new from the Lower Carboniferous of Missouri.

Vogdes, A. W. Genera and Species of North American Carboniferous Trilobites. (Ann. N. Y. Acad. Sci., Vol. iv, pp. 69-105, 2 plates. New York, 1888.) The following species described:

<i>Proetus loganensis</i> .	<i>Phillipsia doris</i> Hall.
<i>Proetus perocedens</i> H. & W.	<i>Phillipsia rockfordensis</i> Winch.
<i>Proetus tennesseensis</i> .	<i>Phillipsia howi</i> Bill.
<i>Proetus trinucleatus</i> .	<i>Phillipsia tuberculata</i> M. & W.
<i>Proetus ellipticus</i> M. & W.	<i>Griffithides portlockii</i> M. & W.
<i>Phillipsia perannulata</i> Shum.	<i>Griffithides bufo</i> M. & W.
<i>Phillipsia cliftonensis</i> Shum.	<i>Griffithides scitula</i> M. & W.
<i>Phillipsia major</i> Shum.	<i>Griffithides sangamonensis</i> M. & W.
<i>Phillipsia insignis</i> Meek.	<i>Griffithides granulatus</i> M & W.
<i>Phillipsia stvensoni</i> Meek.	<i>Brachymetopus lodiensis</i> Meek.

Reviewed in Am. Jour. Sci., (3), xxxv, 500, 1888.

Vogdes, A. W. *Sedalia* Trilobites. (Trans. St. Louis Acad. Sci., Vol. v, pp. 615-618. St. Louis, 1892.) One new species, *Brachymetopus armatus*, figured and described and affinities pointed out.

Vogdes, A. W., J. M. Safford and. New Species of Fossil Crustacea from Lower Silurian of Tennessee, with Remarks on Others not as well Known. (Proc. Acad. Nat. Sci., Phila., xli, 166-168. Phila., 1889.) Description of many species. Reviewed in Neues Jahrbuch, 440, 1890.

Wachsmuth, Charles, and Frank Springer. *Crotalocrinus; Its Structure and Zoological Position.* (Proc. Acad. Nat. Sci., Phila., Vol. XL, pp. 364-390, 2 plates. Philadelphia, 1888.) Reviewed in *Am. Geologist*, III, 201, 1889.

Wachsmuth, Charles, and Frank Springer. *Description of Two New Genera and Eight New Species of Camerate Crinoids from the Niagara Group.* (*American Geologist*, Vol. X, pp. 135-144. Minneapolis, 1892.) The following described as new from the Silurian:

<i>Idiocrinus.</i>	<i>Eucalyptocrinus lindahli.</i>
<i>Idiocrinus elongatus.</i>	<i>Callicrinus beachleri.</i>
<i>Idiocrinus ventricosus.</i>	<i>Melocrinus roemeri.</i>
<i>Hyptiocrinus.</i>	<i>Melocrinus oblongus.</i>
<i>Hyptiocrinus typus.</i>	<i>Melocrinus parvus.</i>

Wachsmuth, Charles, and Frank Springer. *Discovery of the Ventral Structure of Taxocrinus and Haplocrinus; and Consequent Modifications in the Classification of the Crinoidea.* (Proc. Acad. Nat. Sci., Phila., Vol. XL, pp. 337-363, 1 plate. Philadelphia, 1888.) The arrangement of the plates on the ventral side of the forms is minutely described from specimens found at La Grand, Iowa. *Taxocrinus* is then shown to be much more closely related to the recent crinoids than had hitherto been supposed. Reviewed in *Am. Geologist*, III, 200, 201, 1889.

Wachsmuth, Charles, and Frank Springer. *New Genus from the Niagara Group of Western Tennessee.* (*Geol. Sur. Illinois*, Vol. VIII, pp. 206-208. Springfield, 1890.) The following genus and species described as new:

Alloocrinus.
Alloocrinus typus.

Wachsmuth, Charles, and Frank Springer. *New Species of Crinoids and Blastoids from the Kinderhook Group of the Lower Carboniferous Rocks at Le Grand, Iowa.* (*Geol. Sur. Illinois*, Vol. VIII, pp. 155-205. Springfield, 1890.) The following species described and figured as new:

<i>Actinocrinus ornatissimus.</i>	<i>Rhodocrinus watersianus.</i>
<i>Actinocrinus nodobrachiatus.</i>	<i>Platycrinus symmetricus.</i>
<i>Actinocrinus arnoldi.</i>	<i>Dichocrinus inornatus.</i>
<i>Megistocrinus nobilis.</i>	<i>Graphiocrinus longicirifer.</i>
<i>Megistocrinus parvus.</i>	<i>Scaphiocrinus elegantulus.</i>
<i>Batocrinus macbridei.</i>	<i>Scaphiocrinus globosus.</i>
<i>Dorycrinus immaturus.</i>	<i>Taxocrinus intermedius.</i>
<i>Dorycrinus radiatus.</i>	<i>Orophocrinus conicus.</i>
<i>Dorycrinus parvibasis.</i>	<i>Orophocrinus fusiformis.</i>
<i>Rhodocrinus kirbyi.</i>	

Reviewed in *Am. Jour. Sci.*, (3), XXXV, 500, 1888.

Wachsmuth, Charles, and Frank Springer. *Perisomic Plates of the Crinoids.* (Proc. Acad. Nat. Sci., Phila., Vol. XLII, pp. 343-392. Philadelphia, 1890.) This memoir deals chiefly with the structural elements of the ventral covering in the several groups of stalked echinoderms; the interradial plates; and the relations these hold to one another and to those of tegmen. All the plates between the rays and their subdivisions are regarded as plates of the same elements. The ridged integument of the later Camarata is considered to be gradually evolved from the thinner plates of the disk of the earlier species. The heavy interradials are therefore modified perisomic plates. In the *Fistulata* the plates between *Ambulacra* and between the radials and orals are perisomic. The *Larviformia* are forms having the ventral surface composed of orals, with no perisomic plates. The origin and development of the anal plates in the *Fistulata* are also described.

Wasatch and Wind River Beds, Fossil Mammals collected in 1891. H. F. Osborn and J. L. Wortman. (*Bul. Am. Mus. Nat. Hist.*, IV, 81-147. 1892.)

- Walcott, Charles D.** Auffindung von Fischresten in Untersilur. (Neues Jahrbuch f. Min., Geol. u. Pal., I (3), p. 284. 1891.) Notice of the finding of fishes in the Lower Silurian near Canyon City, Colorado.
- Walcott, Charles D.** Cambrian Fossils from Mount Stephens, Northwest Territory of Canada. (Am. Jour. Sci., (3), Vol. xxxvi, pp. 163-167. New Haven, 1888.) Comparisons of the Mt. Stephens fauna are made with those found elsewhere. A number of corrections are also made in the names of certain trilobites.
- Walcott, Charles D.** Cambrian Rocks of Pennsylvania and Maryland from the Susquehanna to the Potomac. (Am. Jour. Sci., (3), Vol. XLIV, pp. 469-482. New Haven, 1892.) Incidental references to fossils observed at different localities.
- Walcott, Charles D.** Cambrian Rocks of Virginia and the Southern Appalachians. (Am. Jour. Sci., (3), Vol. XLIV, pp. 52-57. New Haven, 1892.) Incidental references to fossils from many localities.
- Walcott, Charles D.** Correlation Papers: Cambrian. (Bul. U. S. Geol. Sur., No. 81, 447 pp., 3 plates. Washington, 1891.) Incidental references to fossils. Review.
- Walcott, Charles D.** Fauna of Lower Cambrian or Olenellus Zone. (U. S. Geol. Sur., Tenth Ann. Rep., pp. 511-658, 54 plates. Washington, 1890.) A very full review of the Olenellus fauna, giving the geological position and geographical distribution. The following species are figured, with descriptions of certain of the genera and species:
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|--------------------------------------|---|
| Protospongia sp. ? | Acrothele subsidua White. |
| Trachyum vetustum Dawson. | Kutorgina cingulata Billings. |
| Protopharetra sp. ? | Kutorgina labradorica var swantonensis Walcott. |
| Spirocyathus atlanticus Billings. | Kutorgina pannula White. |
| Coscinocyathus billingsi Walcott. | Kutorgina prospectensis Walcott. |
| Archæocyathus profundus Billings. | Linnarssonina sagittalis var taconica Walcott. |
| Archæocyathus rensselaericus Ford. | Obolella atlantica Walcott. |
| Archæocyathus dwighti Walcott. | Obolella circe Billings. |
| Archæocyathus rarus Ford. | Obolella chromatica Billings. |
| Ethmophyllum whitneyi Meek. | Obolella crassa Hall. |
| Ethmophyllum meeki Walcott. | Obolella nitida Ford. |
| Planolites annularius Walcott. | Obolella gemma Billings. |
| Planolites congregatus Billings. | Orthis highlandensis Walcott. |
| Planolites virgatus Hall. | Orthis salemensis Walcott. |
| Helminthoidichnites marinus Emmons. | Orthisina festinata Billings. |
| Scolithus linearis Haldeman. | Orthisina orientalis Whitfield. |
| Cruziana sp. ? | Orthisina transversa Walcott. |
| Phyllograptus ?? cambrensis sp. nov. | Camarella antiquata Billings. |
| Dactyloidites asteroides Fitch. | Camarella ? minor Walcott. |
| Climacograptus ?? emmonsii Walcott. | Fordilla troyensis Barrande. |
| Ecystites sp. ? | Modioloides prisca Walcott. |
| Lingulella celata Hall. | Helenia bella Walcott. |
| Lingulella ella H. & W. | Scenella ? conula Walcott. |
| Lingulella granvillensis Walcott. | Scenella reticulata Billings. |
| Acrotreta gemma Billings. | Scenella retusa Ford. |
| Iphidea bella. | Scenella ? varians Walcott. |
| | Scenella sp. ? |
| | Stenotheca ? elongata Walcott. |
| | Stenotheca curvirostra S. & F. |
| | Stenotheca rugosa Hall. |
| | Platyceras primævum Billings. |

Walcott, Charles D.—Continued.

- Platyceras dawsoni* sp. nov.
Straparollina remota Billings.
Pleurotomaria (*Raphistoma*)
attleboroensis S. & F.
Hyolithes americanus Billings.
Hyolithes billingsi Walcott.
Hyolithes communis Billings.
Hyolithes communis var. *emmonsi* Ford.
Hyolithes impar Ford.
Hyolithes princeps Billings.
Hyolithes quadricostatus S. & F.
Hyolithes similis Walcott.
Hyolithes terranovicus Walcott.
Hyolithellus micans Billings.
Hyolithellus micans, var. *rugosa* Walcott.
Coleoloides typicalis Walcott.
Salterella pulchella Billings.
Salterella rugosa Billings.
Salterella curvatus S. & F.
Isoxys gen. nov.
Isoxys chilhoweana sp. nov.
Leperditia (?) *dermatoides* Walcott.
Aristozoe rotundata Walcott.
Aristozoe troyensis Ford.
Northozoe ? *vermontana* Whitfield.
Protocaris marshi Walcott.
Agnostus nobilis Ford.
Agnostus desideratus Walcott.
Agnostus sp. ?
Microdiscus bellimarginatus S. & F.
Microdiscus connexus Walcott.
Microdiscus meeki Ford.
Microdiscus parkeri Walcott.
Microdiscus lobatus Hall.
Microdiscus speciosus Ford.
Microdiscus helenae Walcott.
Microdiscus sp. undet.

Reviewed in *Am. Jour. Sci.*, (3), XLII, 345, 346, 1891; also by J. F. James, *Am. Geologist*, VIII, 82-86, 1891.

Walcott, Charles D. Fossils in Lower Taconic of Emmons. (*Proc. Am. As. Adv. Sci.*, Vol. xxxvi, pp. 212, 213. Salem, 1888.) Abstract. Notes the discovery of Trenton fossils in the Taconic limestones in Vermont.

Walcott, Charles D. Hercynian Fauna of Northern Hartz, in Germany. (*Am. Jour. Sci.*, (3), Vol. xxxix, pp. 155, 156. New Haven, 1890.) A brief discussion of the stratigraphic position of the fauna.

Walcott, Charles D. Inarticulate Brachiopod from Trenton Limestone. (*U. S. Nat. Mus., Proc.*, Vol. xii, pp. 365, 366. Washington, 1889.) *Conotreta rusti* described as new genus and species.

- Olenellus thompsoni* Hall.
Olenellus gilberti Meek.
Olenellus iddingsi Walcott.
Olenellus walcotti S. & F.
Olenellus (*Mesonacis*) *vermontana* Hall.
Olenellus (*Mesonacis*) *asaphoides* Emmons (sp.)
Olenellus (*Holmia*) *bröggeri* Walcott.
Olenoides fordi Walcott.
Olenoides marcoui Whitfield.
Olenoides ellsii sp. nov.
Olenoides quadriceps H. & W.
Olenoides (*Dorypyge*) *desiderata* sp. nov.
Zacanthoides levis Walcott.
Zacanthoides eatoni Walcott.
Bathynotus holopyga Hall.
Avalonia manuelensis Walcott.
Conocoryphe trilineata Emmons.
Conocoryphe reticulata sp. nov.
Ptychoparia adamsi Billings.
Ptychoparia ? *attleboroensis* S. & F.
Ptychoparia ? *fitchi* Walcott.
Ptychoparia miser Billings.
Ptychoparia metisensis sp. nov.
Ptychoparia subcoronata H. & W.
Ptychoparia tencer Billings.
Ptychoparia vulcanus Billings.
Crepicephalus augusta Walcott.
Crepicephalus liliana Walcott.
Oryctocephalus primus Walcott.
Anomocare ? *parvum* Walcott.
Agraulos strenuus Billings.
Agraulos redpathi sp. nov.
Agraulos strenuus, var. *nasutus* var. nov.
Protypus hitchcocki Whitfield.
Protypus senectus Billings.
Protypus clavatus Walcott.
Solenopleura bombifrons Matthew.
Solenopleura ? *harveyi* Walcott.
Solenopleura howleyi Walcott.
Solenopleura ? *nana* Ford.
Solenopleura ?? *tumida* Walcott.

Walcott, Charles D. Lingula Preserving Cast of Peduncle. (U. S. Nat. Mus., Proc., Vol. XI, p. 480. Washington, 1888.) A good specimen recently found is figured.

Walcott, Charles D. Lower Cambrian Fossils from Cohasset, Mass. (Proc. Biol. Soc. Washington, Vol. VII, p. 155. Washington, 1892.) Note on the occurrence of fossils in a boulder.

Walcott, Charles D. Lower Silurian (Ordovician) Ichthyic Fauna and its Mode of Occurrence. (Bul. Geol. Soc. America, Vol. III, pp. 153-172. Rochester, 1891.) Abstract. The stratigraphy described, list of invertebrate fossils associated and general character of invertebrates considered. The following species are described:

Dictyorhabdus priscus gen. et sp. nov.

Erotychius americanus sp. nov.

Astraspis desiderata sp. nov.

Review in Am. Jour. Sci., (3), XLI, 245, 1891; Am. Naturalist, xxv, 137, 1891; Geol. Mag., iii, VIII, 240, 1891.

Walcott, Charles D. New Forms of Upper Cambrian Fossils. (Proc. U. S. Nat. Mus., Vol. XIII, pp. 266-279, 2 plates. Washington, 1891.) The following species are described as new:

Metoptoma (?) *minneiskensis*.

Metoptoma (?) *peracuta*.

Platyceras *hoyti*.

Platyceras *texanum*.

Trochus (?) *saratogensis*.

Hyalolithes *attenuatus*.

Hyalolithes *curvatus*.

Hyalolithes *corrugatus*.

Hyalolithes *newtoni*.

Conularia *cambria*.

Spirodermalium *osceola*.

Ptychoparia *burnetensis*.

Ptychoparia *llanoensis*.

Ptychoparia *connata*.

Ptychoparia *metra*.

Ptychoparia *pero*.

Ptychoparia *suada*.

Ptychoparia *urania*.

Ptychoparia *vacuna*.

Ptychoparia (*Liostracus*) *panope*.

Agraulos *saratogensis*.

Agraulos *thea*.

Illanurus (?) *dia*.

Walcott, Charles D. New Genera and Species from the Lower Cambrian or Olenellus Zone of North America. (Proc. U. S. Nat. Mus., Vol. XII, pp. 33-46. Washington, 1890.) Notes on several species, with descriptions of the following forms:

Archæocyathus *dwrighti* sp. nov.

Ethmophyllum *meeki* sp. nov.

Planolites *annularius* sp. nov.

Kutorginalabradorica var. *swantonensis* var. nov.

Obolella *atlantica* sp. nov.

Camerella *minor* sp. nov.

Coleoloides *typicalis* gen. et sp. nov.

Hyalolithes *terranovicus* sp. nov.

Hyalolithes *similis* sp. nov.

Helenia *bella* gen. et sp. nov.

Agnostus *desideratus* sp. nov.

Microdiscus *helena* sp. nov.

Olenellus (*Mesonacis*) *asaphoides* (Emons.)

Olenellus (*Mesonacis*) *bröggeri* Walcott.

Avalonia *mannuelensis* gen. et sp. nov.

Zacanthoides *eatoni* sp. nov.

Solenopleura *harveyi* sp. nov.

Solenopleura *howleyi* sp. nov.

Reviewed in Am. Jour. Sci., (3), XXXIX, 159, 1890; also in Neues Jahrbuch, 334, 1891.

Walcott, Charles D. New Genera and Species of Fossils from the Middle Cambrian. (Proc. U. S. Nat. Mus., Vol. XI, pp. 441-446. Washington, 1889.) The following species, mostly new, are described from Newfoundland:

Lingulella *macconnelli*.

Crania (?) *columbiana*.

Acrotreta *gemma*, var. *depressa*.

Linnæarsonia *sagittalis* Salter.

Orthosina *albata*.

Platyceras *romingeri*.

Walcott, Charles D.—Continued.

Olenoides curticei.

Karlina stephenensis.

Olenoides sp. undet.

Rathyriscus (Kootenia) dawsoni.

Karlina.

Ogygopsis. sp. ?

Karlina minor.

Walcott, Charles D. Review of Dr. R. W. Ell's Second Report on the Geology of a Portion of the Province of Quebec; with Additional Notes on the Quebec Group. (Am. Jour. Sci., (3), Vol. xxxix, pp. 101-115. New Haven, 1890.) Numerous references to fossils.

Walcott, Charles D. Stratigraphic Position of the Olenellus Fauna in North America and Europe. (Am. Jour. Sci., (3), Vol. xxxvii, pp. 374-392. New Haven, 1889.) A study of the stratigraphical relations of the Olenellus fauna, with numerous references to species and localities.

Walcott, Charles D. Stratigraphic Position of the Olenellus Fauna in North America and Europe. (Am. Jour. Sci., (3), Vol. xxviii, pp. 29-42. New Haven, 1889.) Continued from Am. Jour. Sci., Vol. xxxvii, page 392.

Walcott, Charles D. Stratigraphical Succession of Cambrian Faunas of North America. (Nature, Vol. xxxviii, p. 551. New York, 1888.) Incidental references to fossils.

Walcott, Charles D. Taconic System of Emmons and the Use of the Name Taconic in Geologic Nomenclature. (Am. Jour. Sci., (3), Vol. xxxv, pp. 229-242, 307-327, and 395-401. New Haven, 1888.) Incidental references to fossils from New York, Vermont, Massachusetts, and Connecticut are given.

Walcott, Charles D. Value of Term "Hudson River Group" in Geologic Nomenclature. (Bul. Geol. Soc. America, Vol. i, pp. 335-356. New York, 1890.) Lists of characteristic fossils are given.

Walcott, Charles D. Vertebrate Fauna in Silurian (Ordovician) Strata. (Bul. Geol. Soc. America, Vol. iii, pp. 153-172, 2 plates. Rochester, 1892.) A preliminary notice of the discovery of fish remains in the Trenton of Colorado, with a list of characteristic invertebrate remains found at the same place.

Walcott, C. D., Rejoinder. C. Rominger. (American Geologist, ii, 356-359. 1888.) Mention made of different species.

Wanner, Atrenus. Casts of Scolithus Flattened by Pressure. (American Geologist, Vol. v, pp. 35-38, Minneapolis, 1890.) The effects of pressure on certain specimens of Scolithus in the quartzites of Pennsylvania figured and described.

Wanner, Atrenus. Discovery of Fossil Tracks in the Triassic of York County, Pa. (Proc. Am. As. Adv. Sci., Vol. xxxvii, p. 186. Salem, 1889.) Announcement of the discovery of tracks and algæ in the York County Trias. It is followed by a discussion by C. H. Hitchcock.

Wanner, Atrenus. Discovery of Fossil Tracks, Algæ, etc., in the Triassic of York County, Pennsylvania. (Geol. Sur. Pennsylvania, Ann. Rep. 1887, pp. 21-35. Harrisburg, 1889.) Notes and figures of various forms found.

Wanner, Atrenus. Fossil Tracks in the Trias of York County, Pa. (Proc. Am. As. Adv. Sci., Vol. xl, p. 286. Salem, 1892.) Abstract. A notice of the discovery and discussion of the character of the imprints.

Wappinger Valley Limestones and Other Formations of Dutchess County, N. Y. W. B. Dwight. (Am. Jour. Sci., (3), xxxviii, 139-153. 1889.) Various fossils considered.

Washington.

Aucella, with Special Reference to its Occurrence in California. C. A. White. (U. S. Geol. Sur., Mon. xii, 226-233. 1888.)

Invertebrate Fossils of Pacific Coast. C. A. White. (Bul. U. S. Geol. Sur., No. 51. 1889.)

Puget Group of Washington Territory. C. A. White. (Am. Jour. Sci., (3), xxxvi, 443-450. 1888. (Incidental references to the fossils.

- Waverly** Fossils, Continued, Geology of Licking County, Ohio, Part IV, List. C. L. Herrick. (Bul. Sci. Lab. Dennison Univ., IV, Pt. I, 11-60. 1888.)
- Waverly** Fossils, Description of Four New Species. C. L. Herrick. (Bul. Sci. Lab. Dennison Univ., IV, 11-60 and 97-123. 1891.)
- Waverly** Group, Continued, General Conclusions, Geology of Licking County, Ohio, Pt. IV. C. L. Herrick. (Bul. Sci. Lab. Dennison Univ., IV, Pt. I, 97-123. 1888.)
- Waverly** Group, Geology of Licking County, Ohio, Pts. III and IV, Subcarboniferous. C. L. Herrick. (Bul. Sci. Lab. Dennison Univ., III, Pt. I, 13-110. 1888.)
- Waverly** Group in Ohio. C. L. Herrick. (American Geologist, III, 94-99. 1889.) Mention made of different species.
- Waverly** Group in Ohio, with Description of New Species, List of the Bryozons. E. O. Ulrich. (Bul. Sci. Lab. Dennison Univ., IV, Pt. I, 62-92. 1888.)
- Waverly** of Ohio, Compiled, Tabulated List of Fossils. W. E. Cooper. (Bul. Sci. Lab. Dennison Univ., IV, Pt. I, 123-130. 1888.)
- Waverly** Problem, Cuyahoga Shale of Ohio. C. L. Herrick. (Bul. Geol. Soc. America, II, 31-47. 1891.) Incidental references to fossils.
- Webster, Clement L.** Devonian Rocks of Iowa, which Constitutes a Typical Section of the Devonian Formation of the Interior Continental Area of North America. (American Naturalist, Vol. XXIII, pp. 229-243. Philadelphia, 1889.) Numerous references to and lists of fossils.
- Webster, Clement L.** Genus *Pachyphyllum*. (American Naturalist, Vol. XXIII, pp. 621-625. Philadelphia, 1889.) The following species described, without figures, from the Devonian of Iowa:
Pachyphyllum woodmani (White). *Pachyphyllum ordinatum* sp. nov.
Pachyphyllum crassicostatum sp. *Pachyphyllum crassum* sp. nov.
 nov.
- Webster, Clement L.** Geology of Johnson County, Iowa. (American Naturalist, Vol. XXII, pp. 408-419. 1889.) A list of Pleistocene fossils found is given.
- Webster, Clement L.** New and Imperfectly Known Species of Brachiopoda from the Devonian Rocks of Iowa. (American Naturalist, Vol. XXII, pp. 1100-1104. Philadelphia, 1888.) The following are described without figures:
Spirifera substrigosa sp. nov. *Atrypa hystrix*, var. *elongata* subsp. nov.
Spirifera hungerfordi. *Atrypa hystrix*, var. *planosulcata* subsp. nov.
Spirifera strigosa. nov.
- Webster, Clement L.** New Genus of Corals from Devonian Rocks of Iowa. (American Naturalist, Vol. XXIII, pp. 710-712. Philadelphia, 1889.) The following described, without figures, from the Rockford shales of Iowa:
Macgeea gen. nov. *Macgeea parva* sp. nov.
Macgeea solitaria (Hall and Whitfield. *Macgeea culmula* sp. nov.
- Webster, Clement L.** New Species of Fossils from the Rockford Shales of Iowa. (American Naturalist, Vol. XXII, pp. 1013-1018. Philadelphia, 1888.) The following species are described, without figures, as new:
Rhynchonella subacuminata. *Turbo strigillata*.
Athyris minutissima. *Turbo* ? *incertus*.
Paracyclas validilinea. *Holopea tenuicarinata*.
Platystoma mirus. *Cyclonema brevilineata*.
Platystoma pervetus. *Cyclonema subcrenulata*.
Naticopsis rarus.
- Webster, Clement L.** Notes on the Rockford Shales. (American Naturalist, Vol. XXII, pp. 444-446. Philadelphia, 1888.) Three species are described as new:
Loxonema gigantea. *Loxonema crassum*.
Loxonema owenensis.
- Weiss, E.** Devonian Sponges; by J. M. Clarke: Am. Jour. Sci., (3), XXIX. Review. (Neues Jahrbuch, 478-479. 1888.)

- White, Charles A.** Aucella, with Special Reference to its Occurrence in California. (U. S. Geol. Sur., Mon. XIII, App. to Chapter v, pp. 226-233, 2 plates. Washington, 1888.) A general consideration of the genus, with proof of the specific identity of the various forms heretofore described under various names.
- White, Charles A.** Biological and Geological Significance of Closely Similar Fossil Forms. (Proc. Am. As. Adv. Sci., Vol. xxxix, pp. 239-243. Salem, 1891.) A discussion of the confusion resulting from the study of fossils from the two different points of view with reference to the synonymy of different forms. Reviewed *Am. Geologist*, III, 374, 375. 1891.
- White, Charles A.** Invertebrate Fossils of the Pacific Coast. (U. S. Geol. Sur., Bul. No. 51, 102 pp. Washington, 1891.) The following species described and figured:
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| <i>Ostrea</i> (Alectryonia) <i>dilleri</i> White. | <i>Crassatella</i> <i>tuscani</i> Gabb. |
| <i>Zirphæa</i> <i>plana</i> sp. nov. | <i>Clisocolus</i> <i>dubius</i> Gabb. |
| <i>Actæon</i> <i>inornatus</i> sp. nov. | <i>Clisocolus</i> <i>cordatus</i> Whiteaves. |
| <i>Vasculum</i> gen. nov. | <i>Anatina</i> <i>sulcatina</i> Shumard. |
| <i>Vasculum</i> <i>obliquum</i> sp. nov. | <i>Vanikoropsis</i> <i>suciensis</i> sp. nov. |
| <i>Lysis</i> <i>oppansus</i> sp. nov. | <i>Ammonites</i> <i>maclurei</i> sp. nov. |
| <i>Trochus</i> (Anadema) <i>gemiferus</i> sp. nov. | <i>Cardium</i> (Adaena?) sp. ? |
| <i>Stomatia</i> <i>obstricta</i> sp. nov. | <i>Cyrena</i> <i>brevidens</i> sp. nov. |
| <i>Gyrodos</i> <i>dowelli</i> sp. nov. | <i>Corbicula</i> <i>willisi</i> sp. nov. |
| <i>Rimella</i> <i>macilenta</i> sp. nov. | <i>Corbicula</i> <i>pugetensis</i> sp. nov. |
| <i>Mesalia</i> <i>obsuta</i> sp. nov. | <i>Batissa</i> <i>dubia</i> sp. nov. |
| <i>Faunus</i> <i>marcidulus</i> sp. nov. | <i>Batissa</i> <i>newberryi</i> sp. nov. |
| <i>Ceratia</i> <i>nexilia</i> sp. nov. | <i>Psammobia</i> <i>obscura</i> sp. nov. |
| <i>Trophon</i> <i>condoni</i> sp. nov. | <i>Sanguinolaria</i> ? <i>caudata</i> sp. nov. |
| <i>Cominella</i> <i>lecontei</i> sp. nov. | <i>Teredo</i> <i>pugetensis</i> sp. nov. |
| <i>Fulgur</i> <i>hiligardi</i> sp. nov. | <i>Cerithium</i> sp. ? |
| <i>Fulguraria</i> <i>gabbi</i> sp. nov. | <i>Cucullæa</i> <i>increbescens</i> sp. nov. |
| <i>Cancellaria</i> <i>turneri</i> sp. nov. | <i>Glycimeris</i> ? <i>dalli</i> sp. nov. |
| <i>Scobinella</i> <i>dilleri</i> sp. nov. | <i>Belemnites</i> sp. ? |
| <i>Ammonites</i> <i>turneri</i> sp. nov. | <i>Belemnites</i> sp. ? |
| <i>Perna</i> <i>excavata</i> sp. nov. | <i>Ammonites</i> (Lillia) <i>howelli</i> sp. nov. |
| <i>Inoceramus</i> <i>vancouverensis</i> Shumard. | <i>Ammonites</i> (Lillia) <i>kialagvikensis</i> sp. nov. |
| | <i>Ammonites</i> (Amaltheus) <i>whiteavesi</i> sp. nov. |
- Reviewed in *Am. Geologist*, v. 109, 110, 1890; and *Neues Jahrbuch*, 154, 155, 1892.
- White, Charles A.** Later Cretaceous Deposits in Iowa. (*American Geologist*, Vol. I, pp. 221-227. Minneapolis, 1888.) *Lespodesthes* (?) *haworthi* described and figured as new.
- White, Charles A.** Lower Cretaceous of the Southwest and its Relation to Underlying and Overlying Formations. (*Am. Jour. Sci.*, (3), Vol. xxxviii, pp. 440-445. New Haven, 1889.) Incidental references to fossils are given.
- White, Charles A.** North American Mesozoic. (Proc. Am. As. Adv. Sci., Vol. xxxviii, pp. 205-225. Salem, 1890.) General references to the fossils.
- White, Charles A.** North American Mesozoic. (*Science*, Vol. xiv, pp. 160-166. New York, 1889.) General references to fossils. The address before section E, of the A. A. A. S. at Toronto, August 29, 1889.
- White, Charles A.** Permian of Texas. (*American Naturalist*, Vol. xxii, p. 926. Philadelphia, 1888.) In a note to the editors, Dr. White announces that he has found that Mr. Cummings was entirely correct in his reported discovery of Mesozoic and Paleozoic types of Invertebrates commingled in one and the same layer of the Permian, in Baylor, Archer, and Wichita counties, Texas.

White, Charles A. Permian Formation of Texas. (American Naturalist, Vol. XXIII, pp. 109-128. Philadelphia, 1889.) A list of species found with the descriptions and figures of the following new species:

Ptychites cumminsi, Pompanoceras walcotti.
Medlicottia copei.

White, Charles A. Puget Group of Washington Territory. (Am. Jour. Sci., (3), Vol. XXXVI, pp. 443-450. New Haven, 1888.) Incidental references and comparisons to fossils.

White, Charles A. Texas Permian and its Mesozoic Types of Fossils. (Bul. U. S. Geol. Sur., No. 77, 51 pp., 4 plates. Washington, 1891.) A careful study of the Texas Permian fauna, with descriptions and figures of the following:

Goniatites baylorensis sp. nov. *Murchisonia* sp.?
Wagenoceras cumminsi White. *Patella* sp.?
Medlicottia copei White. *Bellerophon crassus* M. & W.
Popanoceras walcotti White. *Bellerophon montifortianus* M. & P.
Naticopsis shumardi McChes- *Sedgwickia topekænsis* (Shumard).
ney? *Pleurophorus* sp.?
Nautilus (Temnocheilus) wins- *Clidophorus occidentalis* Geinitz.
lowi M. & W. *Yoldia?* subscitula M. & H.
Nautilus sp.? *Myalina permiana* (Swallow).
Nautilus occidentalis Swallow. *Myalina aviculoides* M. & H.
Nautilus endolobus M. & W. *Myalina perattenuata* M. & H.
Naticopsis remex White. *Gervillia longa* Geinitz.
Orthoceras rushensis McChesney. *Aviculopecten occidentalis* Shumard.
Euomphalus subquadratus M. & *Spirorbis* sp.?
W. *Cythere nebrascensis* Geinitz.

White River Neocene of Nebraska, Perrissodactyles. E. D. Cope. (American Naturalist, xxv, 47-49. 1891.)

Whiteaves, J. F. Cretaceous Fossils from British Columbia, the Northwest Territory, and Manitoba. (Geol. and Nat. Hist., Sur. Canada, Contributions to Canadian Paleontology, Vol. I, pp. 151-196, 10 plates. Montreal, 1889.) The following species, with figures, are described:

Aucella mosquensis, var. concen- *Cyprina occidentalis* Whiteaves.
trica Fisch. *Pleuromya carlottensis* Whiteaves.
Astarte carlottensis sp. nov. *Schloenbachia gracilis* sp. nov.
Placenticeras occidentale Whit- *Placenticeras glabrum* sp. var.
eaves. *Cyprina subtrapeziformis* Whiteaves.
Placenticeras perezianum Whit- *Linearia formosa?* Meek & Hayden.
eaves. *Pholadomya subventricosa* Meek & Hay-
Placenticeras (Perezianum? var.) *den*.
liardense. *Solecurtis* (Tagelus) occidentalis Whit-
Scaphites quatsinoensis Whit- *eaves*.
eaves. *Martesia tumidiformis* Whiteaves.
Discina pileolus sp. nov. *Hydatina parvula* Whiteaves.
Cyprina yukonensis sp. nov. *Baculites ovatus* Say.
Schloenabachia borealis sp. nov. *Placenticeras placenta* Dekay.
Esteria sp. nov. *Palæastacus* (?) ornatus Whiteaves.
Terebratula robusta sp. nov. *Serpula semicoalita* sp. nov.
Exogyra sp.? *Lingula subspatulata?* Hall & Meek.
Lima perobliqua sp. nov. *Ostrea congesta* Conrad.
Pteria (Oxytoma) corneuilana *Inoceramus problematicus* Schlot-
d'Orbigny. *heim*.
Trigonia dawsoni Whiteaves. *Modiola tenuisculpta* sp. nov.
Astarte carlottensis Whiteaves. *Belemnitella manitobensis*, sp. nov.
Protocardium hillanum var. *Loricula canadensis* sp. nov.

Whiteaves, J. F.—Continued.

Ptychodus parvulus sp. nov. Enchodus shumardi Leidy.
 Lamna manitobensis sp. nov. Cladocyclus occidentalis Leidy.

Reviewed in Am. Jour. Sci., (3), XXXVIII, 493, 1889; also in Neues Jahrbuch, 158, 159, 1891.

Whiteaves, J. F. Description of a New Genus and Species of Phyllocardia Crustacea from the Middle Cambrian of Mount Stephens, B. C. (Canadian Rec. Sci. Vol. v, pp. 205–208. Ottawa, 1892.) *Anamolocaris canadensis* is based upon numerous specimens in which only the abdominal and caudal segments are preserved, the carapace being unknown.

Whiteaves, J. F. Description of a New Species of *Paneka* from the Corniferous Limestones of Ontario. (Canadian Rec. Sci., Vol. iv, pp. 401–404, 1 plate. Ottawa, 1891.) *Paneka grandis* is regarded as new. It attains a length of fully 9 and a height of nearly 7 inches.

Whiteaves, J. F. Descriptions of four New Species of Fossils from the Lower Silurian Rocks of the Southeastern portion of the District of Saskatchewan. (Canadian Rec. Sci., Vol. v, pp. 293–302, 1 plate. Ottawa, 1891.) The following species are figured and described:

Strophomena acanthoptera. *Gomphoceras parvulum.*
Pentamerus discussatus. *Acidaspis perarmata.*

Reviewed in Am. Geologist, ix, 56, 1892.

Whiteaves, J. F. Fossils of Devonian Rocks of the Islands, Shores, or immediate vicinity of Lakes Manitoba and Winnipegosis. (Geol. and Nat. Hist. Sur. Canada, Contributions to Canadian Paleontology, Vol. i, pp. 255–360, 14 plates. Montreal, 1892.) The few introductory remarks are followed by the descriptions and figures of the following species:

<i>Sphaerospongia tessellata</i> Phillips.	<i>Actinostroma fenestratum</i> Nicholson.
<i>Astræospongia hamiltonensis</i> Meek & Worthen.	<i>Ctenocrinus</i> sp.
<i>Cyathophyllum vermiculare</i> , var. <i>præcursor</i> Frech.	<i>Spirorbis omphalodes</i> Goldfuss.
<i>Cyathophyllum anna</i> Whitfield.	<i>Leptotrypa quadrangularis</i> Nicholson.
<i>Cyathophyllum profunda</i> Hall.	<i>Pinacotrypa marginata</i> sp. nov.
<i>Cyathophyllum profunda</i> (var.).	<i>Cystodictya hamiltonensis</i> Ulrich.
<i>Cyathophyllum dianthus</i> Goldfuss.	<i>Fenestella vera</i> Ulrich.
<i>Cyathophyllum waskasense</i> sp. nov.	<i>Fenestella</i> sp.?
<i>Cyathophyllum petraoides</i> sp. nov.	<i>Polypora</i> (porosa? var.) <i>manitobensis</i> .
<i>Cyathophyllum athabascense</i> Whiteaves.	<i>Discina</i> sp. indet.
<i>Columnaria</i> (<i>Cyathophylloides</i> <i>disjuncta</i> sp. nov.	<i>Chonetes logani</i> , var. <i>aurora</i> Hall.
<i>Actinocystis variabilis</i> sp. nov.	<i>Chonetes manitobensis</i> sp. nov.
<i>Favosites gothlandica</i> Lamarek (var.).	<i>Productella productoides</i> , var. <i>membranacea</i> Phillips.
<i>Pachyopora cerviocornis</i> De Blainville.	<i>Productella subaculeata</i> Murchison.
<i>Alveolites vallorum</i> Meek.	<i>Orthis</i> (<i>Schizophoria</i>) <i>striatula</i> Schlotheim.
<i>Stromatopora</i> sp.?	<i>Orthis</i> (<i>Schizophoria</i>) <i>manitobensis</i> nom. prov.
<i>Actinostroma expansum</i> Hall & Whitfield.	<i>Orthothetes chemungensis</i> Conrad.
<i>Actinostroma tyrrellii</i> Nicholson.	<i>Strophodonta arcuata</i> Hall.
	<i>Strophodontainterstitialis</i> Phillips.
	<i>Spirifera fimbriata</i> Conrad.
	<i>Spirifera</i> (<i>Martinia</i>) <i>richardsonii</i> Meek.
	<i>Cyrtina hamiltonensis</i> Hall.
	<i>Athyris vittata</i> Hall.
	<i>Atrypa reticularis</i> Linnæus.
	<i>Atrypa reticularis</i> var. <i>aspera</i> Schlotheim.

Whiteaves, J. F.—Continued.

- Pentamerus comis* Owen.
Stringocephalus burtini De-france.
Terebratula sullivanti Hall.
Pterinea lobata sp. nov.
Actinopteria boydii Conrad.
Gosseletia sp. ?
Mytilarca inflata sp. nov.
Myalina trigonalis, sp. nov.
Modiomorpha attenuata White-aves.
Modiomorpha compressa sp. nov.
Modiomorpha tumida sp. nov.
Modiomorpha parvula sp. nov.
Spathella subelliptica sp. nov.
Goniophora perangulata Hall var.
Macrodon pygmaeus sp. nov.
Nucula? *manitobensis* sp. nov.
Nuculites sp.
Kefersteinia subovata White-aves.
Mecynodon sp.
Anodontopsis affinis sp. nov.
Paracyclas antiqua Goldfuss.
Paracyclas elliptica Hall.
Paracyclas elliptica var. *occidentalis* Billings.
Paracyclas sp. undt.
Conocardium ohioensis Meek.
Cardiopsis tenuicostata sp. nov.
Cypriocardella bellistriata Conrad.
Cypriocardella producta sp. nov.
Cypriocardina planulata (?) Conrad.
Glossites manitobensis nom. prov.
Orthonota corrugata Whiteaves.
Dentalium (sp.) ?
Palaeacmaea (?) *cingulata* sp. nov.
Pleurotomaria goniostoma sp. nov.
Pleurotomaria infranodosa sp. nov.
- Pleurotomaria* sp. undt.
Raphistoma tyrrellii sp. nov.
Murchisonia archiacana sp.
Murchisonia dowingii sp. nov.
Murchisonia turbinata Schlottheim.
Bellerophon? *pelops* Hall.
Porcellia manitobensis sp. nov.
Eunema speciosum sp. nov.
Eunema brevispira sp. nov.
Euenema subspinosum sp. nov.
Eunema clathratulum sp. nov.
Astralites gen. nov.
Astralites simbriciatus sp. nov.
Euomphalus (*Straparollus*) *annulatus* Phillips.
Euomphalus (*Phanerotinus*) sp. undt.
Euomphalus circularis? Phillips, var. *subtrigonalis*.
Omphalocirrus manitobensis sp. nov.
Straparollina obtusa sp. nov.
Pseudophorus tectiformis sp. nov.
Platyceras (*Orthonychia*) *parvulum* sp. nov.
Platyostoma tumidum sp. nov.
Naticopsis manitobensis sp. nov.
Naticopsis inornata sp. nov.
Loxonema altivolvis sp. nov.
Loxonema priscum Munster.
Loxonema cingulatum sp. nov.
Loxonema gracillum sp. nov.
Macrochilina subcostata (Schlottheim).
Macrochilina pulchella sp. nov.
Pleurotomaria spenceri sp. nov.
Hyalithes alatus sp. nov.
Orthoceras hindii Whiteaves.
Bronteus manitobensis sp. nov.
Lichas (*Terataspis*) sp. nov.
Cyphaspis bellula sp. nov.
Proetus mundulus sp. nov.
Ptyctodus calceolus Newberry and Worthen.
Dinichthys canadensis sp. nov.
Aspidichthys (?) *notabilis* sp. nov.
Onychodus (sp. undt.).

Reviewed in Am. Jour. Sci., (3), XLIV, 429, 1892.

Whiteaves, J. F. Fossils of the Devonian Rocks of the Mackenzie River Basin. (Geol. and Nat. Hist. Sur. Canada, Contributions to Canadian Paleontology, Vol. I, Part III, pp. 199-253, 5 plates. Montreal, 1891.) The following species described, with figures:

- Astræospongia hamiltonensis* Meek & Worthen.
Aulopora serpens Goldfuss.
Streptelasma rectum Hall.
Cyathophyllum arcticum Meek.
Cyathophyllum caespitosum Goldfuss.
Cyathophyllum richardsoni Meek.
Cyathophyllum athabascense sp. nov.

Whiteaves, J. F.—Continued.

- Campophyllum ellipcticum* Hall & Whitfield.
Heliophyllum parvulum sp. nov.
Phillipsastræa hennahi Lonsdale.
Phillipsastræa verillii Meek.
Pachyphyllum devoniense Edwards & Haime.
Cystiphyllum americanum, var. *arcticum* Meek.
Pachypora cervicornis de Blainville.
Arachnocrinus canadensis sp. nov.
Spirorbis omphalodes Goldfuss.
Spirorbis arkonensis Nicholson.
Cornulites (Ortonis) *sublævis* sp. nov.
Hederella canadensis Nicholson.
Proboscina laxa sp. nov.
Stomatopora moniliformis sp. nov.
Ascodictyon stellatum Nicholson.
Paleschara quadrangularis Nicholson.
Monotrypella unjiga sp. nov.
Ceramopora huronensis Nicholson.
Crania hamiltoniæ Hall.
Chonetes logani var. *aurura* Hall.
Strophalosia productoides Murchison.
Productella dissimilis.
Productella spinulicosta Hall.
Productella lachrymosa var. *lima* Conrad.
Orthis striatula Schlotheim.
Strophodonta demissa Conrad.
Strophodonta perplana Conrad.
Spirifera disjuncta Sowerby.
Spirifera disjuncta, var. *occidentalis* var. nov.
Spirifera cyrtinæformis Hall & Whitfield.
Spirifera inutilis Hall.
Spirifera tullia Hall var.
Spirifera glabra, var. *franklini* Meek.
Spirifera meristoides Meek.
Spirifera richardsoni Meek.
Cyrtina hamiltonensis Hall.
Cyrtina billingsi Meek.
Athyris angelica, var. *occidentalis* var. nov.
Athyris parvula sp. nov.
Atrypa reticularis Linné.
Atrypa reticularis, var. *aspera* Schlotheim.
Rhynchonella pugnus Martin.
Rhynchonella cuboides Sowerby.
Rhynchonella castanea Meek.
Eatonia variabilis sp. nov.
Pentamerus galeatus Dalman.
Stringocephalus burtini DeFrance.
Cryptonella calvini (?) Hall & Whitfield.
Newberria lævis Meek.
Newberria halli.
Pterinopecten sp. undt.
Pterinea flabellum Conrad.
Ptychopteria aequivalvis sp. nov.
Leptodesma demus Hall.
Leptodesma jason Hall.
Palæoneilo sp. undt.
Paracyclas elliptica Hall.
Schizodus chemungensis Conrad.
Euomphalus (Straparollus) *inops* Hall.
Euomphalus (Straparollus) *flexistriatus* sp. nov.
Euomphalus maskusi sp. nov.
Conularia salinensis sp. nov.
Proetus haldemani Hall.

Whiteaves, J. F. Fossils from Hamilton Formation of Ontario, with a list of Species at Present Known from that Formation and Province. (Geol. and Nat. Hist. Sur. Canada, Contributions to Canadian Paleontology, Vol. 1, pp. 95-125, 5 plates. Montreal, 1889.) The following species are described with figures:

- Acervularia profunda* Hall.
Taxocrinus lobatus Hall.
Homocrinus crassus sp. nov.
Arthroacantha punctobrachiata Williams.
Dolatocrinus liratus Hall.
Dolatocrinus lamellosus Hall.
Dolatocrinus canadensis sp. nov.
Megistocrinus sp. indt.
Ollacrinus spinigerrus Hall.
Ancyrocrinus bulbosus Hall.
Pentremitidea filosa, sp. nov.
Nucleocrinus elegans Conrad.
Granatocrinus leda Hall.
Codaster canadensis Billings.

Whiteaves, J. F.—Continued.

- Eleutheroocrinus casedayi* Shumard and Yandell.
Lingula thedfordensis sp. nov.
Productella (*Strophalosia*?) *truncata* Hall.
Chonetes carinata Conrad.
Streptorhynchus perversum Hall.
Strophodonta plicata Hall.
Spirifera subdecussata sp. nov.
Nucleospira concinna Hall.
Meristella unisulcata Conrad.
Meristella haskinsi Hall.
Retzia (*Trematospira*) *nobilis* Hall.
Pterinea flabellum Conrad.
Grammysia arcuata ? Conrad.
Turbo shumardi De Verneuil.
Platyceras carinatum Hall.
Platyceras quinquesinuatatum Ulrich.
Platyceras (*Orthonychia*) *conicum* Hall.
Platyostoma plicatum sp. nov.
Dalmanites helena Hall.
Macroptalichthys sullivanti Newberry.
 Reviewed in *Am. Jour. Sci.*, (3), xxxviii, 493, 1889; *Am. Geologist*, v, 108, 109, 1890; and *Neues Jahrbuch*, 147, 1890.

Whiteaves, J. F. Fossils from the Triassic Rocks of British Columbia. (*Geol. and Nat. Hist. Sur. Canada, Contributions to Canadian Paleontology*, Vol. i, pp. 127-148, 3 plates. Montreal, 1889.) The following species described with figures:

- Spiriferina borealis* sp. nov.
Terebratula humboldtensis Gabb.
Terebratula liardensis sp. nov.
Monotis subcircularis Gabb.
Monotis ovalis sp. nov.
Halobia (*Daonella*) *lommeli* Wissman.
Halobia occidentalis sp. nov.
Trigonodus (?) *productus* sp. nov.
Margarita triassica sp. nov.
Nautilus liardensis sp. nov.
Popanoceras maconelli sp. nov.
Arcestes gabbi Meek.
Acrochordiceras ? *carlottense* sp. nov.
Trachyceras canadense sp. nov.
Arniotites Hyatt gen. et sp. nov.
Arniotites vancouverensis Whiteaves.
Arniotites sp ?
Badiotites carlottensis sp. nov.
Aulacoceras carlottense Whiteaves.

Reviewed in *Neues Jahrbuch*, 170, 171, 1891.

Whiteaves, J. F. *Gasteropoda of Trenton Limestone of Manitoba, with a Description of One New Species.* (*Canadian Rec. Sci.*, Vol. v, pp. 317-328. Ottawa, 1892.) Sixteen species are enumerated, most of which are common forms of the Trenton limestone. *Murchisonia major*, Hall, and *M. teretiforma* Billings are regarded as identical, and as large varieties of *M. bellicincta*, Hall. A large new species of *Loxonena* is described and figured under the name *L. winnepegense*, and the operculum of *Maclurea manitobensis* is also described and figured.

Whiteaves, J. F. Illustrations of Fossil Fishes of the Devonian Rocks of Canada, Part II. (*Trans. Roy. Soc. Canada*, Vol. vi, Sec. iv, pp. 77-96, 5 plates. Montreal, 1888.) The following species are described and figured:

- Glyptolepis quebecensis* sp. nov.
Eusthenopteron foordi Whiteaves.
Cheirolepis canadensis Whiteaves.
Bothriolepis canadensis Whiteaves.
Acanthodes affinis sp. nov.
Phaneropleuron curtum sp. nov.
Cephalaspis campbelltonensis sp. nov.
Cocosteus acadicus Whiteaves.
Ctenacanthus latispinosus Whiteaves.
Homocanthus gracilis sp. nov.

Reviewed in *Ottawa Naturalist*, III, No. 2, 1889; also *Neues Jahrbuch*, 437, 1890; and *Am. Jour. Sci.*, (3), xxxviii, 249, 1889.

Whiteaves, J. F. New or Previously Unrecorded Species of Fossils from the Devonian of Manitoba. (*Trans. Roy. Soc. Canada*, Vol. viii, Sec. iv, pp. 93-110, 7 plates. Montreal, 1890.) The following species figured and described:

- Stringocephalus burtini* De France.
Modiomorpha attenuata sp. nov.
Megalodon subovatus sp. nov.
Orthonota corrugata sp. nov.
Pleurotomaria goniostoma sp. nov.
Euomphalus manitobensis sp. nov.
Orthoceras (*Thoracoceras*) *tyrrellii* sp. nov.
Actinoceras hindii sp. nov.

Whiteaves, J. F.—Continued.

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| Gomphoceras manitobense sp. nov. | Tetragonoceras gracile gen. et sp. nov. |
| Cyrtoceras occidentale sp. nov. | Gyroceras canadense sp. nov. |
| Homaloceras planatum gen. et sp. nov. | Gyroceras filicinctum sp. nov. |
| | Gyroceras submamillatum sp. nov. |

Reviewed in Neues Jahrbuch, 561, 562, 1892.

Whiteaves, J. F. New Species of Fossils from the Cambro-Silurian Rocks of Manitoba. (Trans. Roy. Soc. Canada, Vol. VII, Sec. IV, pp. 75-83, 2 plates. Montreal, 1889.) The following species described and figured as new:

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| Maclurea manitobensis. | Onoceras gibbosum. |
| Poterioceras nobile. | Cyrtoceras manitobense. |
| Poterioceras apertum. | Trochoceras maccharlesi. |
| Onoceras magnum. | Aspidoceras insigne. |

Reviewed in Am. Geologist, v, 58, 1890; also in Neues Jahrbuch, 147, 1890.

Whiteaves, J. F. Occurrence of Paucispiral Opercula of Gasteropoda in the Guelph Formation of Ontario. (Canadian Rec. Sci., Vol. v, pp. 404-407. Ottawa, 1891.) Note on the discovery of an operculum in position on a Silurian gasteropod.

Whiteaves, J. F. Orthoceratidæ of the Trenton Limestone of the Winnipeg Basin. (Trans. Roy. Soc. Canada, Vol. IX, Sec. IV, pp. 77-90, 8 plates. Montreal, 1891.) A critical and systematic list of the Orthoceratidæ in the Museum of the Geological Survey of Canada, from the Winnipeg Trenton, with descriptions and figures of the following species:

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| Endoceras annulatum Hall. | Orthoceras winnipegense sp. nov. |
| Endoceras subannulatum Whitfield. | Actinoceras richardsoni Stokes. |
| Endoceras crassisiphonatum sp. nov. | Actinoceras bigsbyi Brown. |
| Orthoceras simpsoni Billings. | Actinoceras allumittense Bill. |
| Orthoceras semiplanatum sp. nov. | Sactoceras cabadense sp. nov. |
| | Gonioceras lambii sp. nov. |
| | Poterioceras apertum Whiteaves. |
| | Poterioceras gracile. |

Orthoceras sellkirkense sp. nov.

Reviewed in Am. Geologist, x, 124, 1892.

Whitfield, R. P. Additional Notes on Asaphus Canalis, Conrad. (Bul. Am. Mus. Nat. Hist., Vol. II, No. 2, pp. 64, 65, 2 plates. New York, 1889.) Observations on a specimen found recently at Fort Cassin.

Whitfield, R. P. Common Edible Crab found Fossil in the Hudson River Tunnel. (Science, Vol. XVIII, p. 300. New York, 1891.) *Cullinectes hastatus*, Fabricus, found in fossil condition in the bed of the Hudson.

Whitfield, R. P. Description of a New Genus of Inarticulate Brachiopodous Shell. (Bul. American Mus. Nat. Hist. Vol. III, pp. 121, 122. New York, 1890.) The genus *Lingulodiscina* described and illustrated as new from certain species heretofore referred to *Lingula*.

Whitfield, R. P. Description of a New Form of Fossil Balanoid Cirripide, from the Marcellus Shale of New York. (Bul. American Mus. Nat. Hist., Vol. II, pp. 66-68. New York, 1889.) *Protobalanus hamiltonensis* described and figured, with a discussion of its relationships.

Whitfield, R. P. Faunal Resemblances between the Cretaceous Formations of New Jersey and those of the Gulf States. (Bul. American Mus. Nat. Hist., Vol. II, pp. 113-116. New York, 1889.) A close faunal relation is noted and tables of common fossils given.

Whitfield, R. P. Fort Cassin Rocks and their Fauna. (Bul. Geol. Soc. America Vol. I, pp. 513-515. New York, 1890.) A note supplementary to a paper by Ezra Brainard and Henry M. Seely on the Calciferous Formation in the Champlain Valley, in the same publication.

Whitfield, R.P. Fossils from Bolivia Collected by Mr. Arthur F. Wendt and Description of a Remarkable New Genus and Species of Brachiopod. (Trans. American Inst. Mining Eng., Vol. XIX, Appendix, p. 31, 1891.) The author describes the new genus *Scaphiocælia*, with the new species *S. boliviensis* from the Devonian near Surce, Bolivia. Reviewed in Am. Naturalist, VIII, 397, 1891.

Whitfield, R.P. Gasteropoda and Cephalopoda of the Raritan Clays and Greensand Marls of New Jersey. (U. S. Geol. Sur., Mon. XVIII, 402 pp., 50 plates. Washington, 1891.) The following species and genera are described and figured:

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| <i>Tudicla planimarginata</i> sp. nov. | <i>Volutomorpha</i> (<i>Piestochilus</i>) <i>mucronata</i> Gabb. |
| <i>Pyropsis elevata</i> Gabb. | <i>Volutomorpha</i> (<i>Piestochilus</i>) <i>kanei</i> Gabb. |
| <i>Pyropsis ocolirata</i> Conrad. | |
| <i>Pyropsis perlata</i> ? Conrad. | |
| <i>Pyropsis retifer</i> Gabb. | <i>Eripachya</i> ? <i>paludinaformis</i> sp. nov. |
| <i>Pyropsis richardsonii</i> ? Toumey. | <i>Euthria</i> ? <i>fragilis</i> sp. nov. |
| <i>Pyropsis</i> ? <i>obesa</i> sp. nov. | <i>Tritonidea obesa</i> sp. nov. |
| <i>Pyropsis trochiformis</i> ? Toumey. | <i>Turbinella</i> ? <i>parva</i> Gabb. |
| <i>Pyropsis reileyi</i> sp. nov. | <i>Turbinella subconica</i> Gabb. |
| <i>Pyropsis naticoides</i> sp. nov. | <i>Turbinella</i> ? <i>verticalis</i> sp. nov. |
| <i>Pyropsis</i> (<i>Rapa</i> ?) <i>septemlirata</i> Gabb. | <i>Vasum conoides</i> sp. nov. |
| <i>Pyropsis</i> (<i>Rapa</i> ?) <i>corrina</i> sp. nov. | <i>Voluta</i> ? <i>delawarensis</i> Gabb. |
| <i>Perissolax dubia</i> Gabb. | <i>Rostellites nasutus</i> Gabb. |
| <i>Pyrifusus erraticus</i> sp. nov. | <i>Rostellites angulatus</i> sp. nov. |
| <i>Pyrifusus cuneus</i> sp. nov. | <i>Rostellites texturatus</i> sp. nov. |
| <i>Pyrifusus mullicaensis</i> ? Gabb. | <i>Volutoderma biplicata</i> Gabb. |
| <i>Pyrifusus macfarlandi</i> sp. nov. | <i>Volutoderma ovata</i> sp. nov. |
| <i>Pyrifusus pyruloides</i> Gabb. | <i>Turricula reileyi</i> sp. nov. |
| <i>Pyrifusus turritus</i> sp. nov. | <i>Turricula leda</i> sp. nov. |
| <i>Pyrifusus meeki</i> sp. nov. | <i>Turricula scalariformis</i> sp. nov. |
| <i>Neptunella mullicaensis</i> sp. nov. | <i>Cancellaria</i> (<i>Merica</i>) <i>subalta</i> Conrad. |
| <i>Triton</i> (<i>Epidromus</i>) <i>precedens</i> sp. nov. | <i>Morea naticella</i> Gabb. |
| <i>Trachytriton atlanticum</i> sp. nov. | <i>Turbinopsis hilgardi</i> ? Conrad. |
| <i>Trachytriton</i> ? <i>holmdelense</i> sp. nov. | <i>Turbinopsis angulata</i> sp. nov. |
| <i>Trachytriton</i> ? <i>multivaricosum</i> sp. nov. | <i>Turbinopsis curta</i> sp. nov. |
| <i>Fusus</i> ? <i>holmdelensis</i> sp. nov. | <i>Turbinopsis elevata</i> sp. nov. |
| <i>Serrifusus</i> ? <i>crosswickensis</i> sp. nov. | <i>Turbinopsis major</i> sp. nov. |
| <i>Serrifusus</i> (<i>Lirofusus</i>) <i>nodocarinatus</i> sp. nov. | <i>Turbinopsis plicata</i> sp. nov. |
| <i>Odontofusus</i> gen. nov. | <i>Surcula strigosa</i> (Gabb). |
| <i>Odontofusus slacki</i> Gabb. | <i>Cithara mullicaensis</i> sp. nov. |
| <i>Odontofusus typicus</i> sp. nov. | <i>Cithara crosswickensis</i> sp. nov. |
| <i>Odontofusus medians</i> sp. nov. | <i>Rostellaria compacta</i> sp. nov. |
| <i>Odontofusus rostellaroides</i> sp. nov. | <i>Rostellaria spirata</i> sp. nov. |
| <i>Volutomorpha conradi</i> Gabb. | <i>Rostellaria curta</i> sp. nov. |
| <i>Volutomorpha ponderosa</i> sp. nov. | <i>Rostellaria fusiformis</i> sp. nov. |
| <i>Volutomorpha gabbii</i> sp. nov. | <i>Rostellaria hebe</i> sp. nov. |
| <i>Volutomorpha</i> (<i>Piestochilus</i>) <i>bella</i> Gabb. | <i>Anchura arenaria</i> Morton. |
| | <i>Anchura abrupta</i> ? Conrad. |
| | <i>Anchura abrupta</i> , var. <i>acutispira</i> var. nov. |
| | <i>Anchura pennata</i> Morton. |
| | <i>Anchura pagodaformis</i> sp. nov. |
| | <i>Anchura solitaria</i> sp. nov. |
| | <i>Anchura</i> (<i>Drepanochilus</i>) <i>compressa</i> sp. nov. |

Whitfield, R. F.—Continued.

- Alaria rostrata* Gabb.
Cypræa (Aricia) mortoni Gabb.
Dolium (Doliopsis) multiliratum sp. nov.
Ficus precedens sp. nov.
Natica abyssina Morton.
Gyrodes abbottii Gabb.
Gyrodes infracarinata Gabb.
Gyrodes crenata Conrad.
Gyrodes petrosus Morton.
Gyrodes altispira Gabb.
Gyrodes obtusivolvæ Gabb.
Lunatia halli Gabb.
Amauropsis meekana sp. nov.
Amauropsis punctata Gabb.
Margarita abyssina Gabb.
Margaritella abbottii Gabb.
Xenophora leprosa Morton.
Endoptygma umbilicata Toumey.
Scalaria (Opallia) Thomasi ? Gabb.
Scalaria silliman sp. nov.
Scalaria hercules sp. nov.
Turritella compacta sp. nov.
Turritella encrinoides Morton.
Turritella ? granulicostata Gabb.
Turritella hardimanensis Gabb.
Turritella vertebroides Morton.
Turritella lippincottii.
Laxispira lumbricalis Gabb.
Siliquaria pauperata sp. nov.
Leiostraca cretacea Conrad.
Obeliscus conellus sp. nov.
Modulus lapidosa sp. nov.
Helcion ? tentorium Morton.
Actæon subovoides sp. nov.
Actæon gabbana sp. nov.
Actæon forbesiana sp. nov.
Actæon cretacea Gabb.
Globiconcha (Tylostoma) curta Gabb.
Cinulia (Oligoptycha) naticoides Gabb.
Cinulia ovoidea Gabb.
Avellana bullata Morton.
Cyclchna recta Gabb.
Bulla mortoni L. & E.
Dentalium subarcuatum Conrad.
Dentalium ripleyanum Gabb.
Dentalium (Falcula) falcatum Conrad.
Diploconcha (Serpula) ? cretacea ? Conrad.
Perissolax trivolvæ Gabb.
Volutoderma abbotti Gabb.
Natica abyssina Morton.
Lunatia halli Gabb.
Cavoscala gen. nov.
Cavoscala annulata Morton.
Pleurotomaria ? tintonensis sp. nov.
Pleurotrema gen. nov.
Pleurotrema solariformis sp. nov.
Caricella plicata sp. nov.
Rostellites biconicus sp. nov.
Volutoderma intermedia sp. nov.
Pleurotoma farmingdalensis sp. nov.
Rostellaria nobilis sp. nov.
Turritella pumila ? Gabb.
Pleutomaria brittoni sp. nov.
Bulla conica sp. nov.
Murex (Pteronotus) lævavaricosus sp. nov.
Murex ? sp. undet.
Rhinocantha (?) conradi sp. nov.
Triton eocenense sp. nov.
Pseudoliva vetusta ? Conrad.
Fusus angularis sp. nov.
Fusus pluricostatus sp. nov.
Fusus perobesus sp. nov.
Fusus paucicostatus sp. nov.
Fusus (Neptunea ?) staminea Conrad.
Fusus (Neptunea ?) eocenicus sp. nov.
Fusus (Neptunea ?) hector sp. nov.
Fusus (Neptunea ?) hector var. *multilineatus* var. nov.
Fusus (Urosalpinx) multicostatus sp. nov.
Clavella raphanoides Conrad.
Fasciolaria hercules sp. nov.
Fasciolaria propinqua sp. nov.
Fasciolaria samsoni sp. nov.
Caricella pyruloides (Conrad).
Caricella ponderosa sp. nov.
Voluta lelia sp. nov.
Voluta perelevata sp. nov.
Voluta sp. nov.
Voluta scaphoides sp. nov.
Voluta (Amoria) versta sp. nov.
Voluta (Scaphella) newcombiana Whitfield.
Volutilithes sayana Conrad.
Volutilithes cancellatus sp. nov.
Cancellaria rudis sp. nov.
Pleurotoma surculitiformis sp. nov.
Pleurotoma regularicostata sp. nov.
Pleurotoma (Surcula ?) altispira sp. nov.
Surcula perobesa sp. nov.

Whitfield, R. P.—Continued.

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| <i>Surculites annosus</i> Conrad. | <i>Ammonites delawarensis</i> Morton. |
| <i>Surculites cadaverosus</i> sp. nov. | <i>Ammonites vanuxemi</i> Morton. |
| <i>Surculites curtus</i> sp. nov. | <i>Ammonites vanuxemi</i> Morton. |
| <i>Conus subsaurideus</i> Conrad. | <i>Ammonites</i> (<i>Placenticeras</i>) <i>placenta</i> De- |
| <i>Calyptrophorus velatus</i> Conrad. | kay. |
| <i>Cypræa sabuloviridis</i> sp. nov. | <i>Ammonites</i> (<i>Placenticeras</i>) <i>telifer</i> Mor- |
| <i>Cassidaria carinata</i> Lam. | ton. |
| <i>Ficus penitus</i> Conrad. | <i>Ammonites</i> (<i>Sphenodiscus</i>) <i>lenticularis</i> |
| <i>Natica globulella</i> sp. nov. | Owen. |
| <i>Xenophora latiferens</i> sp. nov. | <i>Scaphites nodosus</i> Owen. |
| <i>Architectonica annosa</i> . | <i>Scaphites hippocrepis</i> De Kay. |
| <i>Scalaria tenuilirata</i> sp. nov. | <i>Scaphites reniformis</i> Morton. |
| <i>Mesalia elongata</i> sp. nov. | <i>Scaphites iris</i> Conrad. |
| <i>Leptomaria</i> (?) <i>perlata</i> Conrad. | <i>Scaphites similis</i> sp. nov. |
| <i>Leptomaria gigantea</i> sp. nov. | <i>Turritites pauper</i> sp. nov. |
| <i>Leptomaria pergranulosa</i> sp. nov. | <i>Heteroceras conradi</i> Morton. |
| <i>Trematofusus</i> gen. nov. | <i>Ptychoceras</i> (<i>Solenoceras</i>) <i>annulifer</i> |
| <i>Trematofusus venustus</i> . | Morton. |
| <i>Actæon prisca</i> Conrad. | <i>Baculites ovatus</i> Say. |
| <i>Tornatellæa lata</i> Conrad. | <i>Baculites compressus</i> Say. |
| <i>Tornatina wetherelli</i> Lea. | <i>Baculites asper</i> Morton. |
| <i>Nautilus dekayi</i> Morton. | <i>Belemnitella americana</i> Morton. |
| <i>Nautilus bryani</i> Gabb. | <i>Belemnites</i> ? <i>ambiguus</i> Morton. |
| <i>Hercoglossa paucifex</i> Cope. | <i>Nautilus cookana</i> sp. nov. |
| <i>Ammonites complexus</i> H. & M. | <i>Aturia vanuxemi</i> Conrad. |
| <i>Ammonites dentato-carinatus</i> | |
| Rømer. | |

Whitfield, R. P. *Mastodon Remains on New York Island.* (Science, Vol. XVIII, p. 342. New York, 1891.) Description of the occurrence of mastodon remains at Inwood and on Dyckman Creek.

Whitfield, R. P. *Observations on Fauna of the Rocks at Fort Cassin, Vermont, with Descriptions of New Species.* (Bul. Am. Mus. Nat. Hist., Vol. III, pp. 26-29, 3 plates. New York, 1890.) Notes on the rocks are given, and the following species are described:

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| <i>Tryblidium conicum</i> Whitfield. | <i>Orthoceras explorator</i> Billings. |
| <i>Ecculiomphalus triangulus</i> sp. nov. | <i>Orthoceras sordium</i> Billings. |
| <i>Enomphalus perkinsi</i> sp. nov. | <i>Orthoceras bilineatum</i> Hall. |
| <i>Helicotoma similis</i> sp. nov. | <i>Bolbocephalus</i> gen. nov. |
| <i>Maclurea acuminata</i> Billings. | <i>Bolbocephalus</i> ? <i>truncatus</i> sp. nov. |
| <i>Raphistoma hortensia</i> Billings? | <i>Bathyrus</i> (<i>Bathyrurellus</i>) <i>glandicephalus</i> sp. nov. |
| <i>Pleurotomaria difficilis</i> sp. nov. | |

Whitfield, R. P. *Observations on Fossil Fish from the Eocene beds of Wyoming.* (Bul. American Mus. Nat. Hist., Vol. III, pp. 117-120, 1 plate. New York, 1890.) *Protocatostonus constablei* described as new.

Whitfield, R. P. *Observations on Some Cretaceous Fossils from the Beyrut District of Syria in the Collection of the American Museum of Natural History, with Descriptions of Some New Species.* (Bul. Am. Mus. Nat. Hist., Vol. III, No. 2, pp. 381-441, 7 plates. New York, 1891.) Descriptions of a number of Syrian species with a discussion of their stratigraphic position.

Whitfield, R. P. *Observations on Some Imperfectly Known Fossils from the Calcareous Sandrock of Lake Champlain, and Descriptions of Several Forms.*

Whitfield, R. P.—Continued.

(Bul. Am. Mus. Nat. Hist., Vol. II, No. 2, pp. 42-63, 7 plates. New York, 1889.)

The following species are described and figured:

<i>Orthis macleodi</i> sp. nov.	<i>Murchisonia gracilens</i> sp. nov.
<i>Triplexia radiata</i> sp. nov.	<i>Murchisonia? confusa</i> sp. nov.
<i>Metoptoma alta</i> sp. nov.	<i>Lophospira calcifera</i> sp. nov.
<i>Tryblidium? acutum</i> sp. nov.	<i>Bucania tripla</i> sp. nov.
<i>Triblidium pileolum</i> sp. nov.	<i>Orthoceras primigenium</i> Vanuxem.
<i>Ecculiomphalus priscus</i> sp. nov.	<i>Cyrtoceras kirbyi</i> sp. nov.
<i>Euomphalus calciferus</i> sp. nov.	<i>Cyrtoceras beekmanensis</i> sp. nov.
<i>Ophileta complanata</i> Vanuxem.	<i>Cyrtoceras raei</i> sp. nov.
<i>Maclurea sordida</i> Hall.	<i>Primitia gregaria</i> sp. nov.
<i>Holopea turgida</i> Hall.	<i>Primitia? cristata</i> sp. nov.
<i>Trochonema exilè</i> sp. nov.	<i>Primitia seelyi</i> sp. nov.
<i>Raphistoma prævium</i> sp. nov.	<i>Bathyurus conicus</i> Billings.
<i>Plurotomaria beekmanensis</i> sp. nov.	<i>Bathyurus seelyi</i> sp. nov.

Whitfield, R. P. Remarkable New Genus and Species of Brachiopod. (Trans. Amer. Inst. Mining Eng., Vol. XIX, pp. 104-107. New York, 1891.) *Scaphio-cælia boliviensis*, gen. et sp. nov., described as new from the Devonian of Bolivia. Reviewed in American Geologist, VIII, 397, 1891.

Williams, H. S. Correlation Papers: Devonian and Carboniferous. (Bul. U. S. Geol. Sur., No. 80, 279 pp. Washington, 1891.) Incidental references to the fossils.

Williams, H. S. Cuboides Zone and its Fauna: A discussion of Methods of Correlation. (Bul. Geol. Soc. America, Vol. I, pp. 481-500, 2 plates. New York, 1890.) A study of paleontological methods of correlation. The following species are figured:

<i>Strophodonta mucronata</i> Con.	<i>Platyceras symmetricum</i> Hall.
<i>Rhynchonella pugnus</i> , var. <i>alta</i> Calvin.	<i>Orthis tulliensis</i> Vanuxem.
<i>Productus hallianus</i> Walcott.	<i>Atrypa cuboides</i> Sowerby.
<i>Chonetes logani</i> var. <i>aurora</i> Hall.	<i>Atrypa impleta</i> Sowerby.
<i>Spirifer mucronatus</i> var. <i>tulliensis</i> Williams.	<i>Rhynchonella procuboides</i> Kayser.
<i>Spirifer mucronatus</i> Hall.	<i>Terebratula cuboides</i> Sowerby.
	<i>Rhynchonella venustula</i> Hall.
	<i>Rhynchonella cuboides</i> Sowerby.

Williams, H. S. Devonian System of North and South Devonshire. (Proc. Am. As. Adv. Sci., Vol. XXXVIII, pp. 233, 234. Salem, 1890.) Abstract of a discussion of the Devonian and the use of fossils in its correlation.

Williams, H. S. Devonian System of North and South Devonshire. (Am. Jour. Sci., (3), Vol. XXXIX, pp. 31-38. New Haven, 1890.) A study of the English Devonian with comparisons with the American series. Numerous references to fossils.

Williams, H. S. Different Types of the Devonian in North America. (Proc. Am. As. Adv. Sci., Vol. XXXVI, pp. 207, 208. Salem, 1888.) Abstract. Four separate types of the Devonian are recognized and their faunal characteristics considered.

Williams, H. S. Different Types of the Devonian System in North America. (Am. Jour. Sci., (3), Vol. XXXV, pp. 51-59. New Haven, 1888.) Incidental references to fossils from various localities.

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- Williams, H. S.** Scope of Paleontology and its Value to Geologists. (American Geologist, Vol. x, pp. 148-169. Minneapolis, 1892.) Address before section E, A. A. A. S., August, 1892.
- Williams, H. S.** Use of Fossils in Determining the Age of Geologic Terranes. (Proc. Am. As. Adv. Sci., Vol. xxxvii, p. 206. Salem, 1889.) Abstract. A discussion of the value of fossils, with a formulation of rules.
- Williams' Address on Scope of Paleontology and its Value to Geologists, Remarks.** J. Marcou. (American Geologist, x, 257-260. 1892.)
- Williston, S. W.** Interesting Food Habit of the Plesosaurs. (Trans. Kansas Acad. Sci., Vol. xiii, pp. 121, 122. Topeka, 1893.) Description of stones found in the stomach and supposed to have been aided in the digestion.
- Williston, S. W.** Kansas Mosasaurs. (Science, Vol. xviii, p. 145. New York, 1891.)
- Williston, S. W.** Kansas Pterodactyls. (Kansas Univ. Quart., Vol. i, pp. 1-13. Lawrence, 1892.) An annotated list of eight species known to occur in Kansas, with descriptions of the genera Pteranodon and Nyctodactylus.
- Williston, S. W.** New Plesosaur from the Niobrara Cretaceous of Kansas. (Trans. Kansas Acad. Sci., Vol. xii, pp. 174-178. Topeka, 1890.) Description and diagnostic characters of *Cimoliosaurus* (*Elasmosaurus* ?) *snowii*.
- Williston, S. W.** Niobrara Cretaceous of Western Kansas. (Trans. Kansas Acad. Sci., Vol. xiii, pp. 107-111. Topeka, 1893.) Notes on various characteristic species.
- Williston, S. W.** Pelvis of Cumnoria (Camptosaurus). (American Naturalist, Vol. xxiv, pp. 472, 473. Philadelphia, 1890.) A correction on recent work by Lydekker.
- Williston, S. W.** Plesosaur from Niobrara Cretaceous of Kansas. (Trans. Kansas Acad. Sci., Vol. xii, pp. 1-5. Topeka, 1890.)
- Williston, S. W.** Skull and Hind Extremity of Pteranodon. (American Naturalist, Vol. xxv, pp. 1124-1126. Philadelphia, 1891.) A description of *Pteranodon longiceps* from the Cretaceous of Kansas.
- Williston, S. W.** Structure of the Kansas Chalk. (Trans. Kansas Acad. Sci., Vol. xii, p. 100. Topeka, 1890.) Notes the presence of Foraminifera, Radiolaria, sponges, etc., in the chinks of Kansas.
- Williston, S. W.** Structure of Plesiosaurian Skull. (Science, Vol. xvi, pp. 262-290. New York, 1890.) Reviewed in Neues Jahrbuch, 452, 1892.
- Williston, H. S., and E. C. Case.** Kansas Mosasaurs, Part I, Clidastes. (Kansas Univ. Quart., Vol. i, pp. 15-32, 4 plates. Lawrence, 1892.) A review of the Clidastes known from Kansas with descriptions of:
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| Clidastes velox Marsh. | Clidastes wymani Marsh. |
| Clidastes westii sp. nov. | Clidastes rex Marsh. |
| Clidastes dispar Marsh. | Clidastes stenops Cope. |
- Winchell, N. H.** Discovery of Lingula and Paradoxides in the Red Quartzites of Minnesota. (Bul. Minnesota Acad. Nat. Sci., Vol. iii, pp. 103-105. Minneapolis, 1889.) Short note claiming that fossils have been found in the formation named.
- Winchell, N. H., and Charles Schuchert.** New Brachiopoda from the Trenton and Hudson River Groups of Minnesota. (American Geologist, Vol. ix, pp. 284-294. Minneapolis, 1892.) The following species described as new:
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| Lingula riciniiformis var. gale- | Leptæna charlottæ. |
| nensis. | Plectambonites gibbosa. |
| Lingula (Glossina) deflecta. | Orthis meedsi. |
| Lingulasma galenensis. | Hallina saffordi. |
| Strophomena septata. | Hallina nicolleti. |
| Strophomena planodorsata. | Rhynchotrema inæquivalvis, var. laticos- |
| Strophomena schofieldi. | tata. |
| Strophomena emaciata. | |

- Wind River Beds**, Collection of 1891, Fossil Mammals. H. F. Osborn and J. L. Wortman. (Bul. Am. Mus. Nat. Hist., iv, 81-147. 1892.)
- Winnipeg Basin**, Orthoceratidae of Trénton Limestone J. F. Whiteaves. (Trans. Roy. Soc. Canada, ix, Sec. iv, 77-90. 1891.)
- Winnipegosis**, Fossils from Devonian Rocks of the Islands, Shores, or Immediate Vicinity of Lake. J. F. Whiteaves. (Geol. and Nat. Hist. Sur. Canada, Contributions to Canadian Paleontology, i, 255-360. 1892.)
- Wisconsin.**
- Agnostus, North American Species. A. W. Vogdes. (American Geologist, ix, 377-396. 1892.)
- Cambrian Fossils, Upper, Description of New Forms. C. D. Walcott. (Proc. U. S. Nat. Mus., xiii, 266-279. 1890.)
- Cambrian Rocks of Virginia and Southern Appalachians. C. D. Walcott. (Am. Jour. Sci., (3), XLIV, 52-57. 1892.) Incidental references to certain Wisconsin fossils.
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- Lamellibranchiata, New. E. O. Ulrich. (American Geologist, x, 96-104. 1892.)
- Lamellibranchiata, Silurian, Chiefly from Minnesota Rocks. E. O. Ulrich. (Geol. and Nat. Hist. Sur. Minnesota, Nineteenth Ann. Rep., 211-248. 1892.)
- Ostracoda, Lower Silurian, No. 1. E. O. Ulrich. (American Geologist, x, 263-270. 1892.)
- Silurian Formations of Wisconsin and Minnesota Compared. F. W. Sardeson. (Bul. Minnesota Acad. Nat. Sci., iii, 319-326. 1891.) Incidental references to fossils.
- Wolfe, E.** Cambrian Fossils in Stockbridge Limestone of Vermont. (Bul. Geol. Soc. America, Vol. II, p. 331. 1890.) Reviewed in Am. Jour. Sci., (3), xli, 435, 1891; also in Am. Geologist, viii, 117, 1891.
- Woodward, Anthony.** Foraminifera from Post-Pliocene Sand at Santa Barbara., California. (New York Micros. Soc., Jour., Vol. v. pp. 24, 25. 1888.) List of specimens found.
- Woodward, A. S.** Evolution of Fins. (Natural Science, Vol. i, pp. 28-35. London, 1892.)
- Woodward, Henry.** Turrelepas in Utica Formation of Ottawa, Canada. (Geol. Mag., Vol. vi, pp. 271-275. London, 1889.) Reviewed in Neues Jahrbuch, 423, 1892.
- Woodward, J. B.** Erratic Cambrian Fossils in the Neocene Gravels of the Islands of Martha's Vineyard. (American Geologist, Vol. ix, pp. 243-247. Minneapolis, 1892.) A description of fossiliferous pebbles in the Neocene at Gay Head.
- Woolman, Lewis.** Geological Results of the Boring of an Artesian Well at Atlantic City, N. J. (Proc. Acad. Nat. Sci., Phila., Vol. xxxix, pp. 339-342. Philadelphia, 1888.) Notes on the various Tertiary fossils found.
- Woolman, Lewis.** Geology of Artesian Wells at Atlantic City, N. J. (Proc. Acad. Nat. Sci., Philadelphia, Vol. xlii, pp. 132-147. Philadelphia, 1890.) List of fossils found in sinking the well is given.
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- Worms.**
- Calciferous Formation in Champlain Valley. E. Brainard and H. M. Seely. (Bul. Geol. Soc. America, i, 501-516. 1890.) Incidental references to fossils.

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- Cambrian, Lower, or Olenellus, Zone of North America, Descriptive Notes of New Genera and Species. C. D. Walcott. (Proc. U. S. Nat. Mus., XII, 33-36. 1890.)
- Devonian Rocks of Islands, Shores, or Immediate vicinity of Lakes Manitoba and Winnipegosis. J. F. Whiteaves. (Geol. and Nat. Hist. Sur. Canada, Contributions to Canadian Paleontology, I, 255-360. 1891.)
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- Exploration in Yukon and Mackenzie Basins, N. W. T. R. G. McConnell. (Geol. and Nat. Hist. Sur. Canada, Ann. Rep. 1888-1889, IV, Part D, 163 pp. 1891.) Mention made of different species.
- Fauna of Lower Cambrian or Olenellus Zone. C. D. Walcott. (U. S. Geol. Sur., Tenth Ann. Rep., 511-688. 1890.)
- Fauna of St. Johns Group, No. V. G. F. Matthew. (Trans. Roy. Soc. Canada, VIII, Sec. IV, 123-166. 1890.)
- Footprints from Jura (?). Trias of New Jersey. J. Eyerman. (Proc. Acad. Nat. Sci., Philadelphia, XLI, 32, 33. 1889.)
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- Geological Section at Todd's Fork, Ohio. A. F. Foerste. (American Geologist, II, 412-419. 1888.) Occurrence of characteristic fossils noted.
- Invertebrate Fossils of Pacific Coast. C. A. White. (Bul. U. S. Geol. Sur., No. 51. 1889.)
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- Paleontology of New York. J. Hall. (Nat. Hist. New York, Pal., V, Pt. II, 278 pp. 1888.)
- Preliminary Description of North Attleborough Fossils. N. S. Shaler and A. F. Foerste. (Bul. Mus. Comp. Zool., No. 2, Geol. Ser. II, 27-41. 1888.)
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- Relations between the Geology of Eastern Maine and New Brunswick. L. W. Bailey. (Trans. Roy. Soc. Canada, VII, Sec. IV, 57-68. 1889.) Allusions to various species of fossils.
- Scolithus Flattened by Pressure. A. Wanner. (American Geologist, V, 35-38. 1890.)
- Scolithus, Studies in Problematic Organisms. J. F. James. (Bul. Geol. Soc. America, III, 32-44. 1892.)
- Tubicolar Annelida, Genus and Species. S. Calvin. (American Geologist, I, 24-28. 1888.)
- Wortman, J. L.,** H. F. Osborn and. Characters of Protoceras (Marsh), the New Artiodactyle from the Lower Miocene. (Bul. Am. Mus. Nat. Hist., Vol. IV, pp. 351-371. New York, 1892.)
- Wortman, J. L.,** H. F. Osborn and. Fossil Mammals of Wahsatch and Wind River Beds, Collection of 1891. (Bul. Am. Mus. Nat. Hist., Vol. IV, pp. 81-147. New York, 1892.) Several species described as new.
- Worthen, A. H.** Description of Fossil Invertebrates. (Geol. Sur. Illinois, Vol. VIII, pp. 71-154. Springfield, 1890.) The following species are described and figured:
- Zaphrentis dalei Edwards and Zaphrentis centralis Edw. and Haime.
Haime. Zaphrentis spinulosa Edw. and Haime.

Worthen, A. H.—Continued.

- Zaphrentis chesterensis* sp. nov.
Zaphrentis pellaensis sp. nov.
Zaphrentis calcariformis sp. nov.
Zaphrentis carinatus sp. nov.
Zaphrentis cliffordana Edw. and Haime.
Zaphrentis ulrichi sp. nov.
Zaphrentis lanceolatus sp. nov.
Zaphrentis illinoiensis sp. nov.
Zaphrentis spergenensis sp. nov.
Zaphrentis varsoviensis sp. nov.
Zaphrentis cylindracea sp. nov.
Zaphrentis reversa sp. nov.
Zaphrentis parasitica sp. nov.
Lophophyllum profundum sp. nov.
Anisophyllum ? *iowaensis* sp. nov.
Trachyopora austini sp. nov.
Amplexus geniculatus sp. nov.
Batocrinus montgomeryensis Worthen.
Batocrinus subconicus Worthen.
Batocrinus unionensis Worthen.
Batocrinus nashvillæ Troost.
Poteriocrinus elsahensis Worthen.
Poteriocrinus nodobasalis sp. nov.
Poteriocrinus buffalonensis sp. nov.
Poteriocrinus rowleyi sp. nov.
Poteriocrinus spinuliferus sp. nov.
Poteriocrinus mammæformis sp. nov.
Calceocrinus robustus sp. nov.
Calceocrinus tunicatus Hall.
Agaricocrinus macadamsi sp. nov.
Centrocrinus tennesseensis sp. nov.
Amphoracrinus jerseyensis sp. nov.
Actinocrinus lobatus Hall.
Eupachycrinus orbicularis Hall.
Eupachycrinus sancti-ludovici sp. nov.
Barycrinus spurius Hall.
Barycrinus tumidus Hall.
Dorycrinus mississippiensis Roemer.
Discina varsoviensis Worthen.
Terebratula rowleyi Worthen.
Rynchonella illinoiensis Worthen.
Lingula varsoviensis Worthen.
Spirifera multigranosa sp. nov.
Orthis resupinoides Cox.
Leptodomus ? *magnus* Worthen.
Schizodus varsoviensis Worthen.
Schizodus depressus Worthen.
Schizodus ? *circulus* Worthen.
Schizodus ulrichi sp. nov.
Schizodus randolphensis sp. nov.
Pinna sancti-ludovici Worthen.
Conocardium parrishi sp. nov.
Aviculopecten orestes Worthen.
Aviculopecten niotensis Worthen.
Aviculopecten monroensis Worthen.
Aviculopecten talboti Worthen.
Aviculopecten elsahensis Worthen.
Aviculopecten chesterensis Worthen.
Aviculopecten spinulferus Meek and Worthen.
Aviculopecten mazonensis sp. nov.
Aviculopecten mac-whorteri sp. nov.
Aviculopecten colletti Worthen.
Aviculopecten edwardsi Worthen.
Aviculopecten menardi Worthen.
Lima chesterensis sp. nov.
Edmondia varsoviensis Worthen.
Edmondia illinoiensis Worthen.
Clinopistha radiata Hall.
Macrodon sangamonensis sp. nov.
Pleurophorus chesterensis Worthen.
Pleurophorus minimus Worthen.
Pleurophorus monroensis Worthen.
Modiola illinoiensis Worthen.
Cardiomorpha ? *pellensis* Worthen.
Bakevellia illinoiensis Worthen.
Myalina monroensis Worthen.
Nucula illinoiensis Worthen.
Aviculopinna illinoiensis Worthen.
Sanguinolites ? *multistriatus* Worthen.
Sanguinolites burlingtonensis Worthen.
Sanguinolites randolphensis Worthen.
Solenomya varsoviensis Worthen.
Solenomya monroensis Worthen.
Solenomya ? *iowensis* Worthen.
Allorisma illinoiensis Worthen.
Allorisma elongata Worthen.
Conularia chesterensis Worthen.
Pleurotomaria illinoiensis Worthen.
Pleurotomaria giffordi Worthen.
Pleurotomaria montezuma Worthen.
Pleurotomaria adamsi Worthen.
Pleurotomaria nauvooensis Worthen.
Pleurotomaria iowensis sp. nov.
Porcellia peoriensis Worthen.
Loxonema peoriense Worthen.
Loxonema quadricarinatum Worthen.

Worthen, A. H.—Continued.

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| Lepidopsis chesterensis Worthen. | Orthonema carbonarium Worthen. |
| Murchisonia keokuk sp. nov. | Trachydomia nodulosa Worthen. |
| Murchisonia lasallensis sp. nov. | Nautilus montgomeryensis Worthen. |
| Straparollus subumbilicatus sp. nov. | Orthoceras illinoiense Worthen. |
| Straparollus varsoviensis sp. nov. | Orthoceras okawense Worthen. |
| Macrocheilus altonensis sp. nov. | Orthoceras lasallense Worthen. |
| Bellerophon giganteus Worthen. | Goniatites monroensis sp. nov. |
| Naticopsis madisonensis Worthen. | Solenocheilus indianense sp. nov. |
| Polyphemopsis ? keokuk Worthen. | Temnocheilus scottense sp. nov. |
| | Ascoceras southwelli sp. nov. |
| | Colpocaris chesterensis Worthen. |
| Dentalium illinoiense Worthen. | Solenocaris sancti-ludovici Worthen. |

Reviewed in *Am. Geologist*, VII, 203, 204, 1891.

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Wyoming.

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