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8°. 73 pp.

Darton (Nelson Horatio).

United States geological survey | J. W. Powell, director | — | Record | of | North American geology for 1891 | by | Nelson Horatio Darton | [Vignette] |
Washington | government printing office | 1892
8°. 73 pp.
[UNITED STATES. Department of the interior. (U. S. geological survey). Bulletin 99].
The publications of the United States Geological Survey are issued in accordance with the statute approved March 3, 1879, which declares that—

"The publications of the Geological Survey shall consist of the annual report of operations, geological and economic maps illustrating the resources and classification of the lands, and reports upon general and economic geology and paleontology. The annual report of operations of the Geological Survey shall accompany the annual report of the Secretary of the Interior. All special memoirs and reports of said Survey shall be issued in uniform quarto series if deemed necessary by the Director, but otherwise in ordinary octavos. Three thousand copies of each shall be published for scientific exchanges and for sale at the price of publication; and all literary and cartographic materials received in exchange shall be the property of the United States and form a part of the library of the organization; and the money resulting from the sale of such publications shall be covered into the Treasury of the United States."

On July 7, 1882, the following joint resolution, referring to all Government publications, was passed by Congress:

"That whenever any document or report shall be ordered printed by Congress, there shall be printed, in addition to the number in each case stated, the 'usual number' (1,300) of copies for binding and distribution among those entitled to receive them."

Except in those cases in which an extra number of any publication has been supplied to the Survey by special resolution of Congress or has been ordered by the Secretary of the Interior, this office has no copies for gratuitous distribution.

ANNUAL REPORTS.


The Thirteenth Annual Report is in press.

MONOGRAPHS.

I. Lake Bonneville, by Grove Karl Gilbert. 1890. 4°. xx, 438 pp. 51 pl. 1 map. Price $1.50.


III. Geology of the Comstock Lode and the Washoe District, with atlas, by George F. Becker. 1882. 4°. xv, 422 pp. 7 pl. and atlas of 21 sheets folio. Price $11.00.

IV. Comstock Mining and Minera, by Elliot Lord. 1883. 4°. xiv, 451 pp. 3 pl. Price $1.50.

V. The Copper-Bearing Rocks of Lake Superior, by Roland Duer Irving. 1883. 4°. xvi, 404 pp. 151. 29 pl. and maps. Price $1.85.

VI. Contributions to the Knowledge of the Older Mesozoic Flora of Virginia, by William Morris Fontaine. 1883. 4°. xi, 144 pp. 54 pl. Price $1.05.


XI. Geological History of Lake Lahontan, a Quaternary Lake of Northwestern Nevada, by Israel Cook Russell. 1885. 4°. xiv, 288 pp. 40 pl. and maps. Price $1.75.


XIII. Geology of the Quick Silver Deposits of the Pacific Slope, with atlas, by George F. Becker. 1888. 4°. xix, 480 pp. 7 pl. and atlas of 14 sheets folio. Price $2.00.


In press:


XX. Geology of the Eureka District, Nevada, with atlas, by Arnold Hague. 1892. 4°. 419 pp. 8 pl.

In preparation:

XXI. The Tertiary Rynchochorous Coleoptera of North America, by Samuel Hubbard Scudder.

XXII. A Manual of Topographic Methods, by Henry Gannett, chief topographer.


Mollusca and Crustacea of the Miocene Formations of New Jersey, by E. P. Whitfield.

— Sanroopoda, by O. C. Marsh.

— Stegosauria, by O. C. Marsh.

— Brontotheridae, by O. C. Marsh.


— The Glacial Lake Agassiz, by Warren Upham.

BULLETINS.


2. Gold and Silver Conversion Tables, giving the coining value of troy ounces of fine metal, etc., computed by Albert Williams, jr. 1883. 8°. 8 pp. Price 5 cents.


24. List of Marine Mollusca, comprising the Quaternary Fossils and recent forms from American Localities between Cape Hatteras and Cape Roque, including the Bermudas, by William Healy Dall. 1885. 8°. 336 pp. Price 25 cents.


27. Report of work done in the Division of Chemistry and Physics, mainly during the fiscal year 1884-'85. 1885. 8°. 80 pp. Price 10 cents.

28. On the relations of the Laramie Molluscan Fauna to that of the succeeding Fresh-water Eocene and other groups, by Charles A. White. 1886. 8°. 41 pp. 4 pl. Price 5 cents.


33. On the relation of the Laramie Molluscan Fauna to that of the succeeding Fresh-water Eocene and other groups, by Charles A. White. 1886. 8°. 54 pp. 5 pl. Price 10 cents.

34. The Upper Beaches and Deltas of the Glacial Lake Agassiz, by Warren Upham. 1887. 8°. 84 pp. 1 pl. Price 10 cents.


58. The Glacial Boundary in Western Pennsylvania, Ohio, Kentucky, Indiana, and Illinois, by George Frederick Wright, with an introduction by Thomas Chrowder Chamberlin. 1890. 8°. 112 pp. incl. 1 pl. 8 pl. Price 15 cents.

59. The Gabbros and Associated Rocks in Delaware, by Frederick D. Chester. 1890. 8°. 45 pp. 1 pl. Price 10 cents.


64. A report of work done in the Division of Chemistry and Physics, mainly during the fiscal year 1888–89. F. W. Clarke, chief chemist. 1890. 8°. 60 pp. Price 10 cents.


66. On a Group of Volcanic Rocks from the Tewan Mountains, New Mexico, and on the occurrence of Primary Quartz in certain Basalts, by Joseph Faxon Iddings. 1890. 8°. 34 pp. Price 5 cents.


75. The Viscosity of Solids, by Carl Barus. 1891. 8°. xii, 139 pp. 6 pl. Price 15 cents.


80. A report of work done in the Division of Chemistry and Physics, mainly during the fiscal year 1888–90. F. W. Clarke, chief chemist. 1891. 8°. 151 pp. Price 15 cents.


ADVERTISEMET.

90. A report of work done in the Division of Chemistry and Physics, mainly during the fiscal year 1890-'91. F. W. Clarke, chief chemist. 1892. 8°. 77 pp. Price 10 cents.

In press:
98. Carboniferous Flora—Outlying Coal Basins of Southwestern Missouri, by David White.
101. Insect Fauna of the Rhode Island Coal Field, by Samuel Hubbard Scudder.
103. High Temperature Work in Igneous Fusion and Ebulition, Chiefly in Relation to Pressure, by Carl Barns.
104. Glaciation of the Yellowstone Valley north of the Park, by W. H. Wood.

In preparation:
— Correlation papers—Pleistocene, by T. C. Chamberlin.
— The Eruptive and Sedimentary Rocks on Pigeon Point, Minnesota, and their contact phenomena, by W. S. Bayley.
— The Moraines of the Missouri Coteau, and their attendant deposits, by James Edward Todd.
— The Paleozoic Section in the vicinity of Three Forks, Montana, by A. C. Peale.
— A Bibliography of Palcobotany, by David White.

STATISTICAL PAPERS.


In preparation:
Mineral Resources of the United States, 1891.

The money received from the sale of these publications is deposited in the Treasury, and the Secretary of the Treasury declines to receive bank checks, drafts, or postage stamps; all remittances, therefore, must be by POSTAL NOTE or MONEY ORDER, made payable to the Librarian of the U. S. Geological Survey, or in CURRENCY, for the exact amount. Correspondence relating to the publications of the Survey should be addressed

To THE DIRECTOR OF THE
UNITED STATES GEOLOGICAL SURVEY,
WASHINGTON, D. C.

WASHINGTON, D. C., December, 1892.
RECORD

OF

NORTH AMERICAN GEOLOGY FOR 1891

BY

NELSON HORATIO DARTON

WASHINGTON
GOVERNMENT PRINTING OFFICE
1892
INTRODUCTORY.

This work is the continuation of the record for 1890, and comprises publications received during the year 1891.

The literary scope of this record includes geologic publications printed in North America, and publications on North American geology wherever printed. Purely paleontologic or mineralogic papers are omitted.

The entries are comprised in the two following classes, all arranged in a single alphabetic sequence:

I. Principal entries.—Consisting of full titles of separate contributions classified by authors, together with an abbreviated reference to the containing publication and a short note descriptive of the geologic contents. Imprint dates are given only when other than 1891, and size of page when other than octavo. The extent of papers less than a page in length is indicated thus: ½ p., ¼ col., 3 lines.

II. Subject references.—Each consisting of a condensed title of paper, and the author's name for cross-reference to a principal entry. These are essentially index references, but they are entered under a limited number of headings, of which a classified key is given on the next page.

CLASSIFIED KEY TO THE SUBJECT ENTRIES.

(1) GEOGRAPHIC SUBJECTS.

Alabama.
Alaska.
Arizona.
Arkansas.
Asia.
Australia.
California.
Canada (including all of British America).
Central America.
Colorado.
Connecticut.
Dakotas.
Delaware.
East Indies.
Europe.
Florida.
Georgia.
Hawaiian Islands.
Idaho.
Illinois.
Indiana.
Indian Territory (and "Public land strip").
Iowa.
Kansas.
Kentucky.
Louisiana.
Maine.
Maryland (including District of Columbia).
Massachusetts.
Mexico.
Michigan.
Minnesota.
Mississippi.
Missouri.
Montana.
Nebraska.
Nevada.
New Hampshire.
New Jersey.
New Mexico.
New York.
New Zealand.
North Carolina.
Ohio.
Oregon.
Pennsylvania.
Rhode Island.
South America.
South Carolina.
Tennessee.
Texas.
Utah.
Vermont.
Virginia.
Washington.
West Indies.
Wisconsin.
Wyoming.

(2) Stratigraphic subjects.

Archean and Algonkian, with sub-headings as follows:
- Eastern Canada.
- Lake Superior to Lake Huron region and western Canada.
- Mississippi river to Rocky mountains.
- New England.
- New York to Georgia.
- West of the Rocky mountains.
- Nomenclature.

Cambrian, with sub-headings as follows:
- Appalachian (Vermont to Alabama).
- Canada.
- Illinois.
- Lake Superior region.
- West of the Mississippi river.
- General and nomenclature.

Carboniferous (including Permian), with sub-headings as follows:
- Appalachians to Mississippi river.
- Canada.
- Mississippi river to Rocky mountains.
- Rocky mountains to Pacific coast.
- Virginia to Alabama.
- General and nomenclature.
Cretaceous, with sub-headings as follows:
Atlantic coast region.
Canada.
Illinois.
Kentucky.
Mexico.
Mississippi river to Rocky mountains.
Pacific coast region.
Nomenclature.

Devonian, with sub-headings as follows:
Appalachians (New York to Alabama).
Appalachians to Mississippi river.
Canada.
West of the Mississippi river.
General and nomenclature.

Jura-Trias, with sub-headings as follows:
Mississippi river to Rocky mountains.
Newark formation (Nova Scotia to Virginia).
West of the Rocky mountains.
West Canada.
General and nomenclature.

Pleistocene, with sub-headings as follows:
Alaska.
Appalachians to Mississippi basin.
Atlantic coast region.
Central America.
General.
Great lakes region and Eastern Canada.
Mississippi basin to Rocky mountains.
Rocky mountains to Pacific coast.
Western Canada.

Silurian, with sub-headings as follows:
Appalachians (Vermont to Alabama).
Appalachians to Mississippi river.
Canada.
West of Mississippi river.
Nomenclature.

Tertiary, with sub-headings as follows:
Alaska.
Atlantic coastal plain.
Canada.
Gulf states (Florida to Texas, and Arkansas).
Illinois.
Kentucky.
Mississippi river to Rocky mountains (north of Arkansas).
Pacific coast region.
Tennessee.
General and nomenclature.

(3) OTHER SUBJECTS.

Geologic philosophy, with sub-headings as follows:
Deformation.
Petrology.
Glaciology.
Ore deposits.
Physiographic geology.
Miscellaneous.
Petrography.
LIST OF PUBLICATIONS EXAMINED.

— Report on coal measures of the Plateau region, by H. McCalloy.
American Geologist, vols. 7, 8. Minneapolis, Minn.
American Journal of Science, 3d series, vols. 41, 42. New Haven, Conn.
Appalachia, vol. 6, No. 3. Boston.
Little Rock.
British Association for the Advancement of Science, Report of 60th meeting. London.
Canadian Institute, Transactions, vol. 1. Toronto.
Canadian Record of Science, vol. 4, Nos. 5-8. Montreal.
Cincinnati Society of Natural History, Journal, vol. 13, No. 4; vol. 14, Nos. 1, 2.
Berlin.
Geologists' Association, Proceedings, vol. 11, Nos. 6-9; vol. 12, Nos. 1-5. London.
Harvard College, Museum of Comparative Zoölogy, Bulletin, vol. 16, No. 10; vol. 20, Nos. 6, 8; vol. 21; vol. 22, Nos. 1, 2. Cambridge.
Illinois, Geological Survey; vol. 8, Geology and Paleontology, 1890. Springfield.
Johns Hopkins University, Circulars, Nos. 85-94. Baltimore.
Kaiserlich-königliche geologische Reichsanstalt, Verhandlung, 1890, Nos. 6-18; 1891, Nos. 1-7.
Kansas Academy of Science, Transactions, vol. 12, part 2. Topeka.
— Report on the geology of parts of Jackson and Rockcastle counties.
LIST OF PUBLICATIONS EXAMINED.

Manchester, Geological Society, Transactions, vol. 20, parts 18-21; vol. 21, parts 1-12.
Meriden Scientific Association, Transactions, vol. 4. Meriden, Conn.
Minnesota, Geological Survey, 18th Report (date ?). Minneapolis.
Neues Jahrbuch für Mineralogie, Geologie, and Paleontologie, 1891 (3 vols.) (Excepting abstracts.)
——— Transactions, vol. 10, Nos. 4-6.
New York State Museum, Bulletins, Nos. 8-10. Albany.
Philadelphia Academy of Natural Sciences, Proceedings, 1890, part 3; 1891.
——— Progress report of artesian and underflow investigations, part 2, by E. S. Nettleton. Washington.
RECORD.

A.

ADAMS, Frank D. On some granites from British Columbia and the adjacent parts of Alaska and the Yukon district.

Canadian Record of Science, vol. 4, pp. 344-358.
Description of their petrography and discussion of the origin of certain secondary minerals which they contain.

— Notes to accompany a tabulation of the igneous rocks, based on the system of Professor H. Rosenbush.

Canadian Record of Science, vol. 4, pp. 463-469, pl. 1.
Petrographic. Accompanied by a folded table.

— [Summary report on surveys in the St. Maurice district, eastern townships.]

Includes notes on occurrence and character of the crystalline limestones and gneiss.

Alabama. Appomattox formation, McGEE.
Coal measures of plateau region, McCALLEY.
Coal measures of Blount county, GIBSON.
Cambrian of North America, WALCOTT, C. D.
Columbia formation, McGEE.
Cretaceous stratigraphy, WHITE, C. A.
Cretaceous of North America, WHITE, C. A.

Dates of origin of certain topographic forms, DAVIS.

[Flora of Tuscaloosa formation], FONTAINE.
Map of Cahaba coal field, McCALLEY.
Preface [Report on coal of plateau country], SMITH.
Overthrust faults of the southern Appalachians, HAYES.

Alabama—Continued.
Post-Pliocene subsidence, SPENCER.
Stones for building, MERRILL.
Titanic oxide [in soils], DUNNINGTON.
Variations in Cretaceous and Tertiary, LANGDON.
Warrior coal field, TRAZER.

Alaska. Expedition to Mount St. Elias, RUSSELL, I. C.
Explorations in Alaska, RUSSELL, I. C.
Fossil plants from near Mount St. Elias, KNOWLTON.
Granites from British Columbia, Alaska, etc., ADAMS.
Muir glacier region, CUSHING. WRIGHT.
Sands from Yakutat bay, STANLEY. BROWN.

AMERICAN GEOLOGIST. The Cretaceous hypothesis.


Am. Geologist, vol. 8, pp. 120-121.
Reviews certain conclusions in a contained paper by F. L. Nason, on the post-Archean age of the white limestones of Sussex county, in their bearing on the age of the iron ores and limestones of the eastern New York and western New England region. Also reviews the statements concerning the relations of the blue to the white limestones.

— Supposed Trenton fossil fish.

Review of the statements of C. D. Walcott on the discovery of fossil fish in the Trenton of Colorado to the Geological Society of America, in August, 1891.
RECORD OF NORTH AMERICAN GEOLOGY FOR 1891. [BULL. 99.

AMERICAN GEOLOGIST—Cont'd.


Analysis and review.


Summary of results of studies by Hill, Leroi, and Cope, 1883-1889.

AMI, Henry M. On the geology of Quebec and its environs.


Description of Trenton, Utica, Lorraine, Quebec, Lewis, and Sillery beds, with lists of fossils and a table of distribution of genera and species, and discussion of relations and equivalency of the lower members. Includes a brief reference to relations of the Archean. Discussed by A. R. C. Selwyn and C. D. Walcott, pp. 501-502.

On the geology of Quebec city, Canada.

Canadian Record of Science, vol. 4, pp. 315-319.


A discussion of the stratigraphic position, equivalency, and nomenclature of the Quebec rocks.

On the sequence of strata forming the Quebec group of Logan and Billings, with remarks on the fossil remains found therein.


Abstract of paper read to Royal Society of Canada, May, 1891.

ANGEL, Myron. Monterey county.

California, 10th Report of Mineralogist, pp. 345-348, 1890.

Includes a record of an artesian well in Salinas City.

San Luis Obispo county.

California, 10th Report of Mineralogist, pp. 567-585, pl. 1890.

Includes notes on bituminous rock mines, general geologic structure, well borings, and economic minerals.

Santa Barbara county.

California, 10th Report of Mineralogist, pp. 595-599, 1890.

Includes geologic notes.

Tulare county.

California, 10th Report of Mineralogist, pp. 728-733, 1890.

Includes geologic notes, mainly economic.


Drift rocks of central Ontario, Coleman.

Grand river, Labrador, Cary.

Mineral resources of Quebec, Ells.


American opinion on the older rocks, Winchell, A.

Nova Scotia and Cape Breton, Honeyman.

Asbestos, Ells.

Chemical contributions, Hoffmann.

Environ of Quebec, Markou.

Labrador coast, Packard.

Steep rock lake, Ontario, Smyth.

Lake Superior to Lake Huron region and western Canada.—Geology of Marquette iron region, Brooks.

Nickel and copper, Sudbury district, Bell, Barlow.

Report on Sudbury district, Bell.

Summary Reports of Geological Survey, Selwyn.

Penokee iron-bearing series, Irving and Van Hise.

Lake Superior stratigraphy, Lawson.

Dikes of Rainy lake region, Lawson.

Dike in Minnesota river valley, Hall, C. W.

Metallie iron in Huronian quartzite, Ontario, Hoffmann.

Fauna of Lower Cambrian, Walcott.

Lake Superior stratigraphy, Van Hise.


Silicified glass breccia, Sudbury district, Williams, G. H.

South trap range of Keweenawan series, Wadsworth.

Age of Saganaga granite, Winchell, H. V.

Eastern equivalents of Minnesota iron ores, Winchell, N. H.

Iron ores of Minnesota, Winchell, N. H. and H. V.

A last word with the Huronian, Winchell, A.

American opinion on the older rocks, Winchell, A.

Marquette and Keweenaw district, Wadsworth.

Record of field observation, Winchell, A.
Archean and Algonkian—Continued.

Structure of Selkirk range, Dawson, G. M. Walcott.

Lake Winnipegosis and Porcupine mountains, Tyrrell.

Mississippi river to Rocky mountains.

Central mineral region, Comstock.

Report of state geologist, Dumble.

Tin in central Texas, Comstock.

Notes on geology of the Southwest, Hill.

Central basin of Texas, Curtice.


Alumite and diaspore from Rosita hills, Colorado, Cross.

Vein phenomena, Boulder county, Colorado, Parish.

Reconnaissance in Indian Territory, Hill.


Crystalline rocks of Missouri, Haworth.


Manganese deposits, Penrose.


American opinion on the older rocks, Winchell, A.

Rifting in granite [Cape Ann], Tarr.

Fauna of Lower Cambrian, Walcott.

Arkose beds in central Massachusetts, Emerson.

Keratophyre from Marblehead Neck, Massachusetts, analysis, Chatard.

Trias of Massachusetts, Emerson.

The four Rocks about New Haven, Dana.

Metamorphism in conglomerate schist, Wolff.

Iron ores of Minnesota, Winchell, N. H. and H. V.


Nason. Smock.

Post-Archean age of white limestones, Nason.

Artesian wells in eastern Pennsylvania, Carter.

American opinion on the older rocks, Winchell, A.
Arizona. Analysis of sandstone, CHATARD.
Cambrian of North America, WALCOTT.
Devonian and Carboniferous, correlation, WILLIAMS, H. S.
Fauna of Lower Cambrian, WALCOTT.
Manganese deposits, PENROSE.
Meteoric iron locality, FOOTE.
Stones for building, MERRILL, G. P.

Arkansas. Appomattox formation, McGEE.
Bauxite, BRANNER.
Basic dikes outside of syenite areas, KEMP.
Comanche series of Texas—Arkansas series, HILL.
Cretaceous of North America, WHITE, C. A.
Crowley's Ridge, CALL. SALISBURY. BRANNER.
Devonian and Carboniferous, correlation, WILLIAMS, H. S.
Fayetteville-Huntsville section, HARRIS.
Geology of Washington county, SIMMONDS.
Geology of western Arkansas, WINSLOW.
Igneous rocks of Arkansas, WILLIAMS, J. F.
Introduction [Washington county], BRANNER.

Arkansas—Continued.
Manganese deposits, PENROSE.
Novaculites, GRISWOLD.
Origin of manganese ores of northern Arkansas, PENROSE.
Reade's theory of origin of mountain ranges, READE.
Relationship of Pleistocene to pre-Pleistocene, CHAMBERLIN and SALISBURY.
Stones for building, MERRILL, G. P.
Tabulation of dikes, KEMP and WILLIAMS.
Tertiary silicified woods, CALL.
Titanic oxide [in soils], DUNNINGTON.
Topographic features of Arkansas marble, HOPKINS.

ARMs, I. M. Clay concretions of the Connecticut river.
Includes an account of the beds in which they occur and a discussion of the origin of concretions.

Asia. Cambrian of North America, WALCOTT.
Progress of mining in China, CLARK, E.
Review of Quaternary era, UPHAM.
Titanic oxide [in soils], DUNNINGTON.

Australia. Glaciers of New Zealand, JACK.
Mount Morgan mine, Queensland, RICKARD. WEED.

B.

BEACHLER, Charles S. The rocks at St. Paul, Indiana, and vicinity.
Description of the stratigraphic column.

BECKER, George H. Structure of a portion of the Sierra Nevada of California.
1890.
Account of a complexly faulted area and discussion of the mechanism of the dislocations.

—Antiquities from under Tuolumne Table mountain in California.
Includes a discussion of the correlation of the lavas and gravels with eastern deposits,
BECKER, George H.—Continued.
—Notes on the early Cretaceous of California and Oregon.
  Describes relations at a newly discovered fossiliferous locality at Ridge Creek, Oregon, and discusses its bearing on the history and correlation of the Sierra Nevada group. Also announces an occurrence of fossiliferous Triassic beds and points out their relations to a post-Triassic upheaval with granitic intrusions. Discussed by G. M. Dawson, J. S. Diller, and C. A. White, pp. 207-208.

—Notes on the early Cretaceous of California and Oregon.
  Describes relations at a newly discovered fossiliferous locality at Kiddles, Oregon, and discusses its bearing on the history and correlation of the Sierra Nevada group. Also announces an occurrence of fossiliferous Triassic beds and points out their relations to a post-Triassic upheaval with granitic intrusions. Discussed by G. M. Dawson, J. S. Diller, and C. A. White, pp. 207-208.

—Report, California division.
  Includes references to the massive rocks in the gold belt and to localities exhibiting glaciation in the Yosemite region, and a discussion of the nature and origin of "cone" structure in granite in the Sierra Nevada.

BELL, Robert. The nickel and copper deposits of Sudbury district, Canada.
  Description of the deposits and of the geology of the region, and discussion of the genesis of the ores.

BOYD, C. R. Map of the mineral resources and railway facilities of southwest Virginia. 1891.
  Bull. 99. 2

BRAINERD, Ezra. The Chazy formation in the Champlain valley.
  Descriptions of detailed sections, and note on the distribution of the Chazy in other regions.

BRANNER, John C. The relations of the State and National Geological Surveys to each other and to the geologists of the country.
  Preface.
  Includes a brief discussion of the origin of Cowboy's Ridge.

—Introduction.
  Includes a stratigraphic column of the formations of Washington county, and references to the Eureka (Devonian?) shale and Lower Silurian sandstone exposures.

—Bauxite in Arkansas.
  Engineering and Mining Jour., vol. 51, p. 114, ¹/₂ vol. 4°.
  Description of its character, geologic relations and composition.

BRIGHAM, W. T. On the recent eruption of Kilauea.
  Report to W. D. Alexander, Surveyor General.

BROADHEAD, G. C. The Ozark series.
  Account of the distribution, character, and stratigraphy of the series in Missouri, and discussion of the relations and equivalency of its members.

BROOKS, T. B. Geology of the Marquette iron region. A correction.
  Notice of the drift nature of a certain crystalline rock outcrop referred to in his report; Geology of Michigan, 1873, vol. 1.

BROWN, J. A. Amador county.
  California, 10th Report of Mineralogist, pp. 98-123, 1890.
  Account of mines with incidental references to geologic features.

—Calaveras county.
  California, 10th Report of Mineralogist, pp. 147-152, 1890.
  Account of mines with brief, incidental geologic references.

Petrographic descriptions and chemical analyses of rocks from several localities, with notes on their occurrence.

BROWN, Ross E. — The ancient river beds of the Forest hill divide.

California, 10th Report of Mineralogist, pp. 433-455; 2-sheet map in accompanying pocket.

California — Continued.

Alameda county, Goodyear. •
Amador county, Brown. •
Ancient river beds of the Forest hill divide, Browne. •
Antiquities from Tuolumne Table mountain, Becker. •
Analyses of rocks, Chatard. •
Asphaltum mine, Ventura county, Hilgard. •
Butte county, Miner. •
Calaveras county, Brown. •
Chemistry of Mount Diablo rocks, Melville. •
Colusa county, Goodyear. •
Coniferous wood saturated with bitumen, Ford. •
Contra Costa county, Goodyear. •
Cretaceous of northern California, Diller. •
Classification of mountain ranges, Upham. •
Colorado desert, Orcutt. •
Cretaceous of North America, White, C. A. •
Early Cretaceous, Becker. •
Floodling of the Colorodo desert, Powell. •
Fresno county, Goldstone. •
Gas well at Summerland, Wheelan. •
Geology of Mother Lode region, Fairbanks. •
Faunas of Shasta group and Trias from Mineral King district, White, C. A. •
Infusorial earths, Edwards. •
Late volcanic eruption and its peculiar lava, Diller. •
Lake county, Goodyear. •

California. •
Lassen county, Preston. •
Los Angeles county, Preston. •
Manganese deposits, Penrose. •
Marion county, Goodyear. •
Mariposa county, Preston. •
Mendocino county, Goodyear. •
Merced county, Watts. •
Mining of gold ores, Hammond. •
Modoc county, Preston. •
Mohawk lake beds, Turner. •
Monterey county, Angel. •
Mount Diablo, Turner. •
Napa county, Goodyear •
Nevada county, Hobson. •
Orange county, Bowers. •
Placer county, Hobson. •
Pico Cañon oil field, North. •
Plumas county, Preston. •
Report, California division, U. S. Geol. Survey, Becker. •
Report, Cascade division, U. S. Geol. Survey, Diller. •
Rincon hill well, Irtran. •
San Joaquin county, Watts. •
Siskiyou county, Hobson. •
Secale's borax marsh, De Groot. •
Santa Cruz county, Watts. •
Santa Barbara county, Angel. •
Santa Clara county, Watts. •
Santa Barbara county, Hobson. •
Structure of portion of the Sierra Nevada, Becker. •
San Mateo county, Watts. •
San Luis Obispo county, Angel. •
Santa Clara county, Watts. •
Sacramento county, Watts. •
Sonoma county, Goodyear. •
Stanislaus county, Watts. •
Stones for building, Merrill, G. P.
California—Continued.
Sutter county, Preston.
Tertiary and post-Tertiary changes of Pacific Coast, Le Conte.
Titanic oxide in soils, Dunnington.
Tulare county, Angel.
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[Counties of California], GOODYEAR.

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CROSBY, W. O. Composition of till or boulder clay.


Account of analyses of specimens from Boston basin region, of the nature of the separated materials, and of the occurrence of salt in the drift. Discusses the history and relations of the tills, conditions of glacial erosion and transportation in the region, and the distribution of glacial and nonglacial silts.

On the contrast in color of the soils of high and low latitudes.

Am. Geologist, vol. 9, pp. 72-82.

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Considers the conditions of occurrence of the red soils of the southern states, reviews Russell's statements concerning them, and discusses the nature and origin of the color.

CROSS, C. Whitman. Constitution and origin of spherulites in acid eruptive rocks.


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Includes a geologic sketch of the region, description of the alunite rocks, and discussion of their origin.

CUMMINS, W. F. Report on the geology of northwestern Texas.


Description of Carboniferous, Permian, Triassic, and Tertiary formations, review of the economic geology and agriculture, and descriptions of the
CUMMINS, W. F.—Continued.
several counties in which the larger coal seams occur. Accompanied by a map indicating the coal measure and Permian areas and the Cretaceous border.

CURTICE, Cooper—Continued.
* In discussion of "the Comanche series of the Texas-Arkansas region," by R. T. Hill.


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DALL, W. M. Elevation of America in the Cenozoic periods.
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— On the age of the Peace creek beds, Florida.
A statement of their stratigraphic relations and fauna.

DANA, James D. Some of the features of nonvolcanic igneous ejections, as illustrated in the four "Rocks" of the New Haven region.—West rock, Pine rock, Mill rock, and East rock.
Description of the relations of the traps and sandstones in the New Haven region, with a comment on their general bearing.

DANA, James D.—Continued.
— On Percival's map of the trap belts of central Connecticut, with observations on the upturning or mountain-making disturbance of the formation.
A sketch of some of the features of the area, illustrated by a reproduction of a part of Percival's map, and a discussion of the mechanism of the uplift.
— Annual report of the State Geologist of New Jersey for the year 1890, 305 pp., 8°, 1891.
A review of the contained report by F. L. Nason on the age of the crystalline limestones of Sussex county, New Jersey.
— The four "rocks," with walks and drives about New Haven, 120 pages, 7 plates, New Haven
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DARTON, N. H. Mesozoic and Cenozoic formations of eastern Virginia and Maryland.
Abstract, Am. Geologist, vol. 8, p. 185, 7½ p.;
Description of distribution, stratigraphy, characters, and structure of the formations of the middle Atlantic coastal plain, account of a displacement, and sketch of the geologic history of the region. Illustrated by a geologic map.
— Clastic formations of Washington.
Description of the general structure and of the Cretaceous, Tertiary, and Pleistocene formations.
DAVIS, William M.—Continued.

A preliminary analysis of the topographic development of the Atlantic slope, with a brief chapter on genetic topographic classification in general, and comments on the representation of dates of topographic forms by colored maps.


An account of the relations about Meriden, in which are discussed the origin of the deposits, formation of the trap sheets, deformation, topographic expression of structure, and the structure and stratigraphy in the Meriden region. Discussed by B. K. Emerson, p. 430.

— [Age and extent of the overtrusts in the southern Appalachians.]


In discussion of paper by C. W. Hayes "The overtrust faults of the southern Appalachians." Presentation of evidence correlating them with the post-Newark deformation and suggestion of means for determining their original extent.

— The physical geography of southern New England.

Johns Hopkins Univ., Circulars, vol. 10, No. 87, pp. 75-78, $\frac{1}{2}$ p., 4°.

An analysis of the development of the topography of the region from the Cretaceous to the present time.

The Triassic sandstone of the Connecticut Valley.

Johns Hopkins Univ., Circulars, vol. 10, No. 87, p. 79, $\frac{1}{2}$ col. 4°.

Description of a model illustrating the history of the region from the Triassic to the beginning of the Pleistocene.

The lost volcanoes of Connecticut.


Account of relations and history of igneous members of the Newark formation in the Connecticut valley, and description of a model exhibiting the development of the structure of the region.

— Was Lake Iroquois an arm of the sea?


Discussion of the conditions attending the presence of Lake Iroquois, especially in connection with its outlet.

— Structure and origin of glacial sand plains.

Am. Geologist, vol. 7, p. 141, $\frac{1}{2}$ p.

Abstract of paper described in Record for 1890.

DAWSON, George M. On the later physiographical geology of the Rocky mountain region in Canada with spe-
DAWSON, George M.—Continued.

Special reference to changes in elevation and to the history of the glacial period; being the presidential address for the year.

Canada, Royal Soc., Trans., vol. 9, section 4, pp. 3-74. pls. 1-3.

Review of Mesozoic and Tertiary history and elaborate discussion of evidence bearing on the glacial history of the Rocky mountain and adjoining regions.

— Report on a portion of the West Kootanie district, British Columbia.


Description of a crystalline rock series, in part Paleozoic, granites, ore deposits, principal physical features, glaciation and superficial deposits; detailed notes on mining districts and claims, and comments on glacial history of the region and genesis of the ore deposits. Accompanied by a map indicating geology along the routes traveled.

— Note on the geological structure of the Selkirk range.


Description of the stratigraphy and structure, with introductory remarks on the general geology of the Canadian Rocky mountain and the interior plateau regions with comparative stratigraphic lists for each region. Discussed by C. D. Walcott, p. 611, 3/4 p.

— [Northern extension of earlier Cretaceous in western British North America.]


In discussion of paper by G. F. Becker: "Notes on the early Cretaceous of California and Oregon." Refers to an occurrence of ancelia-bearing beds in the far North and remarks on the designation of the earlier Cretaceous of the West.

— [Remarks on glaciation of the Great Plains region.]


DAWSON, J. William. Carboniferous fossils from Newfoundland.


— On fossil plants from the Similkameen valley and other places in the southern interior of British Columbia.

DAWSON, J. William—Continued.

Canada, Royal Soc., Trans., vol. 9, section 4, pp. 75-91.

Including remarks on their age and geological bearing.

— [The age of the Catskill flora.]


Letter to C. S. Prosser included in paper "The Geological Position of the Catskill Group."

[DE GROOT, Henry.] The Searles borax marsh.

California, 10th Report of Mineralogist, pp. 533-539, 1890.

Includes a record of a boring down to 230 feet.

Delaware.

Cambrian of North America, Walcott.

Cretaceous formations of North America, White, C. A.

Fallen forest and peat layer underlying aqueous deposits, Cresson.

Mesozoic and Cenozoic, DARTON.

Stones for building, MERRILL, G. P.

Submarine channels, LINDENKOHL.

DERBY, Orville A. On the occurrence of xenotime as an accessory element in rocks.


Calls attention to its occurrence and associates in Brazil, and in granite from Westerly, Rhode Island.

— On the magnetite ore districts of Jacupiranga and Ipanema, São Paulo, Brazil.


Brief account of geology of the region and petrographic description of the rocks.

— Nepheline-bearing rocks in Brazil. [Abstract.]


Notices of their nature and associates.

— Observations on the genesis of certain magnetites. [Abstract.]


Brazil.

Devonian.

Appalachians, New York to Alabama.

Devonian and Carboniferous, correlation, WILLIAMS, H. S.

Geologic position of the Catskill group, PROSSER.

Age of the Catskill flora, DAWSON, J. W.

Fauna with Goniatites intumescens in western New York, CLARKE.

Episode in Paleozoic history of Pennsylvania, CLAYPOLE.
Devonian—Continued.
Post-glacial anticlinal ridge in New York, GILBERT.
Paint ore mines at Lehigh gap, HESSE.
Union, Snyder, Mifflin, and Juniata counties, Pennsylvania, D'IVIL-LEKS.
Building stones of New York, SMOCK.
Excursion across Appalachians, WILLIAMS, H. S.
Iron ores of Virginia, PECHIN.
Overthrust faults of Southern Appalachians, HAYES.
Geological survey of Georgia, SPENCE.
Physical geology of Tennessee, HULL.
Plateau region of Alabama, MCCALLEY, SMITH.
Calaba coal field, MCCALLEY, SMITH.
Appalachians to Mississippi river. Rocks at St. Paul, Indiana, BEACHLER.
Age of Cincinnati anticlinal, FOERSTER.
Cuyahoga shale and Waverly problem, HERRICK.
Notes on southwestern New York, HARRIS.
Map of Kentucky, PROCTOR.
Jackson and Rockcastle counties, Kentucky, SULLIVAN.
Western Kentucky, ORTON.
Economic geology [Illinois] WORTHEN.
Map of Illinois, WORTHEN.
Canada. Devonian and Carboniferous, correlation, WILLIAMS, H. S.
Late Winnipegosis and Porcupine mountains, TYRELL.
Nova Scotia, FLETCHER.
Cape Breton, GILPIN.
West Kootanied district, DAWSON, G. M.
Yukon and Mackenzie basins, McCONEEL.
West of the Mississippi river. Devonian rocks of Buchanan county, IOWA, CALVIN.
Washington county, Arkansas, SIMMONS.
Introduction [Washington county, Arkansas], BRANNER.
Contributions to geology of the Southwest, HILL.
Report, Montana division, U. S. Geol. Survey, PEALE.

Devonian—Continued.
Devonian and Carboniferous, correlation, WILLIAMS, H. S.
Central mineral region of Texas, COMSTOCK.

General and nomenclature. Age of Catskill flora, DAWSON, J. W.
Geological position of the Catskill group, PROSSEN.
Devonian and Carboniferous, correlation, WILLIAMS, H. S.

DEWSNAP, S. G. The coal measures of Washington.
Engineering and Mining Jour., vol. 52, pp. 245, 246, 357, p. 36.
Thickness of beds and character of the coal, with incidental reference to geologic relations.

DILLER, J. S. A late volcanic eruption in northern California and its peculiar lava.
Description of the "Cinder cone" region, its lavas, ash field, and ancient lake bed, with discussion of the age of the eruption, an account of the petrographic character of its quartz-basalt, and a brief review of the occurrence of quartz-basalts elsewhere.
— Report, Cascade division.
Includes references to observations on the structure of the Crazy mountains in Montana; on Amella beds lying on metamorphics in Cow creek valley, Oregon; on a lava stream of Mount Shasta in the canyon of the Sacramento; on tuff deposits and Cretaceous beds in the northern Sacramento valley; and on porphyritic eruptions along Clear creek, Shasta county, California.

[D relations of the Cretaceous formations in northern California].
In discussion of paper by G. F. Bocker, "Notes on the early Cretaceous of California and Oregon."

Includes a general account of the mineral resources of Texas, pp. xxx-xxxii, and a discussion of the artesian water conditions of the state, pp. lxvi-lxxxviii.
— A general description of the iron ore district of east Texas.
Includes a general account of the iron ore district of east Texas.
DUMBLE, E. T.—Continued.
Description of stratigraphy and economic resources.

— [Iron ore district of east Texas]
Houston county.
Notes on stratigraphy and economic resources and analyses of soils.

— Important results of the Texas survey.

DUMBLE, E. T.—Continued.
Includes account of the relations of the Triassic to Carboniferous in north Texas as determined by Cummins, and of new light on Cretaceous stratigraphy in western Texas due to Streeruwitz.

DUNNINGTON, F. P. Distribution of titanite oxide upon the surface of the earth.
Gives analyses of soils from Virginia, West Virginia, Maryland, North Carolina, South Carolina, Indiana, Tennessee, Alabama, Mississippi, Arkansas, Missouri, Montana, Nevada, California, and from Europe, Asia, and Oceania.

E.

BAKINS, L. G. Five Cherokee limestones. [Analyses].
From the lead-zinc region of southwestern Missouri.

East Indies. Permian, Triassic, and Jurassic of Timor and Rotti, ROTH-PLETZ.

Includes notes on the localities and discussion of the stratigraphic distribution of the forms. In a supplemental note considers the age of the "Great Basin" deposits.

ELDRIDGE, G. H. The Florence oil fields, Colorado.
Engineering and Mining Jour., vol. 52, p. 422, 1/2 vol., 4th.
Abstract of paper read to Am. Inst. of Mining Engineers, October, 1891.
Reference to stratigraphic position and depths of the oil-bearing strata.

ELLS, R. W. Report on the mineral resources of the Province of Quebec.
A brief sketch of geology in opening chapter and incidental geologic notes for some of the localities.

— Asbestus; its history, mode of occurrence, and uses.
Ottawa Naturalist, vol. 4, pp. 201-225.
Includes references to geologic conditions under which it occurs.

[—] [Summary report on survey of region lying south of the Grand Trunk Railway between Acton and Richmond to the Vermont boundary.]

ELLS, T. W.—Continued.
Includes a brief reference to the relations and age of the pre-Cambrian and Cambrian or later slates of the region.

EMERSON, Benjamin K. On the Triassic of Massachusetts.
Points out the character of the members, refers briefly to structural relations, and discusses the currents and conditions of deposition indicated by the deposits. Accompanied by a geologic map of the Massachusetts area.

— [Arkose beds in the Newark formation and relations of the rocks, in the Douglas region in central Massachusetts.]
In discussion of paper by W. M. Davis: "The relation of secular rock disintegration to certain transitional crystalline schists."

— [Stratigraphic position of fossil-bearing beds in the Newark formation in Massachusetts.]
In discussion of paper by W. M. Davis: "Two belts of fossiliferous black shales in the Triassic formation of Connecticut."

EMMONS, S. F. Report, Rocky Mountain division.
Includes references to observations on the Algonkian beds, and stratigraphy in the San Juan region, the discovery of Silurian fossils at Canyon City, and the discovery by W. Cross of an Algonkian series near Salida.

EUROPE.
Cambrian of North America, WAL-COTT.
### Europe—Continued.

- Causes of spread of Cambrian faunas, **Matthew**.
- Fauna of lower Cambrian, **Walcott**.
- Genesis of iron ores, **Kimball**.
- Phosphatic chalk at Taplow, England, **Davidson**.

### Europe—Continued.

- Quaternary changes of level in Scandinavia, **Geer**.
- Relation of strength of marble to its structure, **Perry**.
- Review of Quaternary era, **Upham**.
- Titanic oxide in soils, **Dunnington**.

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**F.**

#### Florida—Continued.

- Phosphates of America, **Wyatt**.
- Record of deep well at Lake Worth, **Darton**.
- Stones for building, **Merrill, G. P.**

**Foerste, Aug. F.** On the Clinton oolitic iron ores.

- Account of the structure of the grains and the nature of their replacement, with a comment on the conditions of deposition and location of the shores during Clinton times.

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**Fontaine, W. M.** [Report of the work done during 1888 to 1889.]

- Includes reference to occurrence of Potomac formation at Haywood, North Carolina and to the flora of the Tuscaloosa formation of Alabama.

**Foote, A. E.** Geological features of the meteoric iron locality in Arizona.

- Remarks on nature and origin of the depression.

**Ford, H. C.** Specimens of coniferous wood saturated with bitumen.

- Account of the beds in which they occur at Carpenteria, California.

**Foshay, P. Max, and Hice, Richard R.** Glacial grooves at the southern margin of the drift [in western Pennsylvania].

  - Description of the topography of the Beaver valley and its various glacial phenomena, and discussion of their significance.

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**Fairbanks, Harold W.** Geology of the Mother lode region.

- California, 10th Report of Mineralogist, pp. 23-90, map in accompanying pocket, 1890.
- Description of the rocks and their relations, and discussion of their age. Accompanied by a folded, colored, geologic map.

**Faribault, E. R.** [Summary report on observations in gold-bearing series in Colchester and Halifax counties, Nova Scotia.]

- Includes a note regarding the distribution of Carboniferous rocks and their relations to the lower Cambrian slates.

**Farish, John B.** Interesting vein-phenomena in Boulder county, Colorado.

- Includes a brief reference to associated rocks and to the age of the veins.

**Fletcher, Hugh.** [Summary report on part of Pictou and Colchester counties, Nova Scotia.]

- Includes notes on the Triassic, Permian, Carboniferous, Devonian, and Silurian rocks and the structure of Cobequid Hill.

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**Florida.**

- Age of Peace creek beds, **Dall**.
- Elevation of America in Cenozoic periods, **Dall**.
- Floriditie, **Cox**.
- Fresh water swamps, **Shaler**.
- Geology of phosphates, **Darton**.
- Origin of Florida phosphates, **Davidson**.
- Pebble and nodular phosphate of lime, **Cox**.
- Phosphatic chalk at Taplow, England, **Davidson**.
- Phosphate fields, **Millar**.

Bull. 99—3
FRAZER, Persifor. The Warrior coal field of northern Alabama. 
Notes on coal bed stratigraphy and structure and analyses of coals. Includes a detailed stratigraphic column of the coal measures in Jefferson county, by McCalley.

FULLER, Homer T. Preservation of glaciated rocks. [Abstract.]
Points out favorable conditions by which certain glacial grooving in central Massachusetts is preserved.

GANONG, W. F. Southern invertebrates on the shores of Acadia.
Includes reference to evidences of subsidence.

GEER, Gerard de. On the Quaternary changes of level in Scandinavia.
Abstract of paper read to Geol. Soc. of America, 1891.


Geologic Philosophy—Continued.
Petrology. Spherulitic crystallization.
Am. Geologist. IDDINGS. CROSS. Late volcanic eruption in California, DILLER. Granites from British Columbia, ADAMS. Alunite and diaspor, Rosita hills, Colorado, CROSS. Crystalline rocks of Missouri, HAZARDS. Petrographic differentiation in dikes, in Rainy lake region, LAWSON. Silicified glass breccia, Sudbury district, Canada, WILLIAMS, G. H. Metamorphism in conglomerate schist, WOLFF. Igneous rocks of Arkansas, WILLIAMS, J. F. Penokee iron series, IRVING and VAN HISE.

Glaciology. So-called sand dunes, Long Island, BRYSON. Phenomena at Hingham, Massachusetts, BOUVÉ. Muir glacier, Alaska, CUSHING. Evidence of glacial epoch in Nicaragua, CRAWFORD. Composition of till, CROSBY. Changes of Atlantic and Pacific coasts, [etc.], LE CONTE. Are there glacial records in the Newark system? RUSSELL, I. C. Antiquity of last glacial period, SHALE. Cause of the glacial period, UPHAM. Glacial lakes in Canada, UPHAM. Criteria of englacial and subglacial drift, UPHAM. Lakes enclosed by modified drift, UPHAM.

Phytogeographic geology.
Dates of origin of certain forms on Atlantic slope, DAVIS.
Geologic Philosophy—Continued.

Physiographic geology—Continued.

Physiographic geology of western Arkansas, Winslow.
Postglacial history of Hudson valley, Merrill, F. J. H.
Physical geology of Tennessee, Hall.
Age of overtrusts in southern Appalachians, Davis.
Fossiliferous shales in Triassic of Connecticut, Davis.
Geography of southern New England, Davis.
An old lake bottom, Hicks.
Gravel accumulation in arid regions of the west, Gilbert.
Relations of secular rock disintegration to certain transitional schists, Pumpeley.
Geological work of mosses and algae, Weed.

Ore deposits.

Nickel and copper of Sudbury, Canada, Bell.
Florida phosphate, Cox.
Vein phenomena in Boulder county, Colorado, Farish.
Mother Lode region, California, Fairbanks.
Redonda phosphates, Hitchcock.
Genesis of iron ores, Kimball.
Manganese deposits, Penrose.
Eruptive iron ores, Nason.
Origin of manganese ores, Penrose.
Mount Morgan mine, Queensland, Rickard.
Manganese deposits, New Brunswick, Whittle.
Asphaltum, California, Hilgard.
Literature of ore deposits, Kemp.
Genesis of ore deposits, Strickerwitz.
Petroleum, etc., western Kentucky, Orton.

Miscellaneous.

The Cretaceous hypothesis, Am. Geologist.
Contraction of molten rock, Barus.
Contrast in color of soils of high and low latitudes, Crosby.
Geological work of mosses and algae, Weed.
Continents and deep seas, Claypole.
Coefficients of thermal expansion of certain rocks, Hallock.
Cycles of sedimentation, Williams, J. L.

Geologic Philosophy—Continued.

Miscellaneous—Continued.

Beach phenomena, New Brunswick, Whittle.
Fresh water morasses, Shaler.
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Georgia. Age of overtrusts in southern Appalachians, Davis.
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Origin of certain topographic forms, Davis.
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Section along Chattahoochee river, Langdon.
Stones for building, Merrill, G. P.

Gibson, A. M. [Report on the coal measures of Blount county.]


Notes on stratigraphy of the coal measures.

Gilbert, G. K. Postglacial anticlinal ridges near Ripley and Caledonia, New York.


[Mode of gravel accumulation in the arid regions of the West.]

In discussion of paper by E. Pumpeley "The relation of secular rock disintegration to certain transitional crystalline schists."

[Status of terms "Algonkian" and "Algonquin."]


Gilpin, E. The Devonian of Cape Breton.

Distribution, characters in various districts, dikes, relations to carboniferous, and economic minerals.
GILPIN, E., jr. The evidence of a Nova Scotia Carboniferous conglomerate.
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Discussion of the nature of the basal beds of the Carboniferous formations in various parts of the region.

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Description of its nature and mode of occurrence.

GOLDSTONE, L. P. Fresno county.
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Account of coal and lignites, limestones, freestone, granite, petroleum and mineral deposits, with incidental geologic notes.

— Tuolumne county.
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Notes on general geology, and descriptions of mines with incidental geologic references.

GOODYEAR, W. A. Alameda county.
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Statements regarding coal mines and coal beds.

— Colusa county.
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Geologic notes.

— Contra Costa county.
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Includes brief account or basal area near Concord.

— Lake county.
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Geologic notes.

GOODYEAR, W. A.—Continued.

— Marin County.
California, 10th Report of Mineralogist, p. 299.
Geologic notes at various localities.

— Mendocino county.
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Incidental geologic notes along certain lines of travel.

— Napa county.
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Includes incidental geologic notes in various districts.

— Solano county.
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Notes on region about Goodyear's station, Suisun marble quarries, and the onyx quarry.

— Sonoma county.
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— Yolo county.
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Notes on volcanic materials near Winters.

GRESLEY, W. S. North American geological notes.
Describes relations of clay streaks in coal beds in Illinois, and bowlders and tree trunks in anthracite coal beds in Pennsylvania.

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Stratigraphy, nature and origin, age, and structure.

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Describes and figures the structure of the deposits and associated formations.

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HAUSMANN, A. Interesting occurrence of gold.
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Reference of geologic relations at locality in Summit county, Colorado, and on Cerros island on the coast of lower California.

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Description of well sections and discussion of the stratigraphy and structure of the region.

The Fayetteville-Huntsville section.
Description of the stratigraphy of the several Carboniferous members.

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Recent eruptions of Kilauea, BRIGHAM.

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Missouri, Geol. Survey, Bull., No. 5, pp. 11-42.
Descriptions of their character and relations and discussion of their age and origin.

HAY, Robert. Northwest Kansas. Its topography, geology, climate, and resources.
Kansas, Board of Agriculture, 6th Report, pp. 92-116, pl. 1889.
Includes description of the characteristics and distribution of the Triassic, Cretaceous, Tertiary, and Pleistocene formations and economic geology. Accompanied by a folded cross section.

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Notes on some Kansas salt marshes.
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HEILPRIN, Angelo. The Eocene molusca of the State of Texas.
With brief prefatory remarks on their stratigraphic bearing.

The geology and paleontology of the Cretaceous deposits of Mexico.
Notes on the character, distribution, relations, equivalency, and paleontology of the Cretaceous formations of Mexico, mainly in the south central region, and descriptions of some fossils from near Orizaba.

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HERNDON, J. H. [Iron ore districts of east Texas.] Smith county.
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Account of economic resources.

HERRICK, C. L. The Cuyahoga shale and the problems of the Ohio Waverly.
Resumed of the general stratigraphy, discussion of stratigraphic relations, list of fauna and description, with plate, of some new or little-known Waverly fossils.

HESSE, Conrad E. The paint-ore mines at Lehigh Gap.
Includes an account of geologic relations of the ore bed.

HICE, Richard R., FOSHEY, P. Max, and. Glacial grooves at the southern margin of the drift [in western Pennsylvania].
Description of the physiography of the Beaver valley and its various glacial phenomena, and discussion of their significance.
HICKS, L. E. An old lake bottom.
Description of certain peculiarities of topography
in Chester county, Nebraska, and discussion of
their nature and origin.

HILGARD, E. W. Orange sand, La-
grange and Appomattox.
A history of the names and discussion of their
status. With an appended note of concurrence
by J. M. Stafford.

[Mode of deposition of the Lafayette
formation in the Mississippi valley.]
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geological position and origin of veins. Illus-
trated by topographic map and geologic cross
section.

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of the Texas-Arkansas region.
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527.
Description of its members and discussion of its
age, stratigraphic value and original extent. Dis-
cussed by G. A. White, C. D. Walcott, and O. Cur-
tice, pp. 525-528.

Notes on a reconnaissance of the
Ouachita mountain system in Indian
Territory.
Description of salient features of stratigraphy
and structure of the southern half of Indian Ter-
ritory and resumed history recorded in the
Ouachita system.

Contributions to the geology of the
Southwest.
Calls attention to a Silurian area in the Chick-
eseau nation country; a new source of arsentic
water in Texas in the Dakota sands; the exist-
ence of Cretaceous Inliers in the Eocene area of
Arkansas and Texas, and the extent and rela-
tions of the Dakota sandstone in Arkansas. Also
discusses the age of the Comanche series.

Notes on the geology of the South-
west.
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bearing district in Indian Territory.

HILL, Robert T.—Continued.
A 2,000-foot well in the upper Cretaceous of
central Texas; foraminiferal beds of Texas;
structure of the Tertiary basin of the Lower Rio
Grande; age of the strata at Marble Falls and
Shinbone Ridge; and eolian deposits of Eddy
county, New Mexico.

Preliminary notes on the topography
and geology of northern New Mexico
and southwest Texas and New Mexico.
Analysis of the topographic characteristics of
the region, and notes on the structure, Cretaceous
formations, a great "valley conglomerate," and
the volcanic areas.

HITCHCOCK, C. H. The Redonda
phosphate.
p. 332, 3 p. 1890.
Account of characteristics, composition and
geologic relations of the deposit, and discussion of
its genesis.

[Remarks on the structure of the
Blue ridge in Virginia.]
In discussion of paper by H. R. Geiger and A.
Keith "The Structure of the Blue Ridge near
Harper's Ferry." Refers to the evidence in the
Balcony Falls and Christiansburg regions.

[Evidence of subsidence in later
 glacial times in the northern New Eng-
l and to St. Lawrence region.]
Discussion of paper by W. J. McGee, "Neocene
and Pleistocene continent movements," read to

HOBSON, J. B. Nevada county.
California, 10th Report of Mineralogist, pp.
364-398, map, plate.
Description of mining districts with notes on
geology. Accompanied by a colored geologic map
of the county.

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410-424, map, plate.
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the geology. Accompanied by a colored geologic
map of the county, and plates of sections.

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bara county].
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trated by geologic map and cross section. Also
section of Point Sal gypsum mines.

Siskiyou county.
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Note on general geology.

HOFFMANN, G. C. On a peculiar form
of metallic iron found in Huronian
quartzite, on the south shore of St.
Joseph island, Lake Huron, Ontario.
Hoffmann, G. C.—Continued.
Account of its mode of occurrence in the rock.
— Chemical contributions of the geology of Canada.
Includes analyses of coals, ores, limestone, dolomite, clay, and mineral waters.
[Hollick, Arthur.] [Minerals from fire clay beds at Green Ridge, Staten island.]
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Incidentally refers to the Cretaceous age of the clays.
Holmes, J. A. Mineralogical, geological, and agricultural surveys of South Carolina.
Historical.
Honeyman, D. Glacial geology of Cape Breton.
Notes on drift deposits and glacial markings.

I.

Idaho.
Cambrian of North America, Walcott.
Stones for building, Merrill, G. P.
The Nampa image, Wright.
Man and the glacial period, Wright.
Innings, Joseph Paxton. Spherulitic crystallization.
A discussion of characteristics of specimens from Yellowstone Park and of the conditions of spherulitic development.
Includes a prefatory description of the containing rock.
Illinois. Age of orange sands, Salisbury.
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Illinois—Continued.
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- Ancient river beds of Forest Hill divide, California, Browne.
- Orange county, California, Bowes.
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SELWYN, Alfred R. C.—Continued.

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[Age of the rocks at Quebec.]


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SMITH, Eugene A. Geological structure and description of the valley regions adjacent to the Cahaba coal field.


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New York State Mus., Bull., No. 10 (vol. 2) 396 pages, plate, map, 1890.

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Report.


Includes brief reference to discoveries by F. L. Nason of fossils in the blue limestones of Sussex county and of the relations of the white limestones of the region, and to observations by C. W. Coman on terraces along the Atlantic coast region and on the Trenton gravels.

Artesian and other bored wells.


Records of wells at various points in New Jersey and at New York city, Philadelphia, and Easton; list of bored wells in the state, with references to the annual reports of the survey in which they are described, and remarks on the conditions controlling artesian water supply in southern New Jersey.
SMYTHE, Henry Lloyd. Structural geology of Steep Rock lake, Ontario.


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South America. Geology of South America, STEINMANN.

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Geology of Haile mine, THIES and MEZGER.

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Surveys of South Carolina, HOLMES.

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Deformation of the Algonquin beach and birth of Lake Huron.


Statements regarding elevations, course and character of the beaches, and discussion of the history of the Algonquin waters.

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Lists of elevations and map, and discussion of the amount of warping.

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—Professor W. M. Davis on the Iroquois beach.


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*Am. Geologist,* vol. 8, p. 233, 4 lines.


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With brief prefatory remarks on the stratigraphy of the beds.


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Chemistry of Mount Diablo rocks, MELVILLE.
Mohawk lake beds, TURNER.
Lassen and Los Angeles counties, California, PRESTON.
Geology of Mount Diablo, California, TURNER.
Nampa image, WRIGHT.

Tennessee. Artesian wells of Memphis, SAFFORD.

General and Nomenclature. Orangesand, Lagrange and Appomattox, HILGARD.
Origin and age of Lafayette formation, UPHAM.

Texas.
Cambrian in North America, WALCOTT.
Classification of Cretaceous, WHITE, C. A.
Cheyenne sandstone and Neocomian shales, CRAGIN.
Concho county, LERCH.
Cretaceous formations of North America; WHITE, C. A.
TURNER, Henry W.—Continued.

ternary formations, and metamorphic and volcanic rocks, and discussion of structure and history.

— Mohawk Lake beds.
Describes Pleistocene and earlier lake beds in Mohawk Valley, California, and discusses their relation to glacial moraines, and the relations of a fault in the lake beds to the structure of the Sierra Nevada.

TYRRELL, J. B. Pleistocene of the Winnipeg basin.
An account of striation, moraines, shore lines, and the several deposits, and review of the Pleistocene history of the region.

TYRRELL, J. B. Continued.

— Foraminifera and radiolaria from the Cretaceous of Manitoba.
Account of the characters, occurrences and geologic relations of the containing deposits, and of the distribution of the remains.

— [Summary report of surveys about Lake Winnipegos and in the Porcupine mountains.]
Includes itinerary notes on Archean, Silurian, Devonian, Cretaceous, and Pleistocene formations

UDDEN, J. A. Megalonyx beds in Kansas.
Describes the geologic relations of a Pleistocene trough and its contents in McPherson county, and discussion of its history.

UHLER, P. R. Notes and illustrations to "Observations on the Cretaceous and Eocene formations of Maryland."
Maryland Acad. Sci., Trans., vol. 1, pp. 97-104, pl. A.
Description of a section (plate A) along the Severn river, and notes on exposures in the Fort Washington vicinity, and near Upper Marlborough.

UPHAM, Warren. A review of the Quaternary era, with special reference to the deposits of flooded rivers.
Summary of evidence in the various regions, especially of fluvial deposits, and a table of "succession of epochs, glacial and fluvial deposits and changes in altitude and climate during the Quaternary era" in the eastern Provinces and New England, Middle and Southern Atlantic states, Mississippi basin and northward, Cordilleran region and Europe and Asia.

— Report of exploration of the glacial Lake Agassiz in Manitoba.
Descriptions of the various beaches, deltas, and other features of the basin and the drift formations of Manitoba; notes on changes of level of the beaches and records of wells; sketch of history of Lake Agassiz, and tables of course of glacial stream, and of altitudes.

Bull. 99—5

UPHAM, Warren—Continued.

— Glacial lakes in Canada.
Descriptions of the principal glacial lakes, and discussion of the evidence of glacial lakes and of the extent and thickness of the ice sheet.

— Geographic limits of species of plants in the basin of the Red river of the North.
With remarks on the influence of climate in geologic times.

— Walden, Cochituate, and other lakes enclosed by modified drift.
Description of these lakes and of others in Massachusetts, Maine, New Hampshire, Rhode Island, and Minnesota, and discussion of their history and bearing on the origina of the oars and kames.

— Elevation and subsidence during the glacial period.
On the bearing of the submergence of the Isthmus of Panama on the cause of the glacial period.

— Correlation of Quaternary changes of level in North America and the Caribbean region.
Résumé of evidence in the various regions and discussion of its bearing on conditions during the glacial period.

— Area and duration of Lake Agassiz.
Review of Tyrrell on the extent of the lake in Canada.

— [The altitude of the eastern and central portions of the United States during the glacial period.]
V.

UPHAM, Warren—Continued.


— [The cause of the glacial period.]

_Am. Geologist_, vol. 8, p. 238.

Discussion of paper by T. C. Chamberlin, "The present standing of the several hypotheses of the cause of the glacial period," read to Geol. Soc. America, 1891.

— Origin and age of the Lafayette and Columbia formations.

_Am. Geologist_, vol. 8, p. 239, 246 p.


— Inequality of distribution of the englacial drift.


Abstract of paper read to Geol. Soc. America, 1891.

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_Am. Geologist_, vol. 8, pp. 376-385.

Résumé of the characters of the material and discussion of their relations and differentiation.

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A general review of stratigraphy, structure, and correlation.

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Lake Superior stratigraphy.


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Report, Lake Superior division.


Includes references to results of studies by E. Haworth on the nature and relations of crystalline rocks of Missouri, and by W. S. Boyley on the rocks and contact phenomena of Pigeon Point, Minnesota.

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IRVING, Roland D. and. The Penokee iron-bearing series of Michigan and Wisconsin.


Chapters on geological exploration and literature by Irving; on the cherty limestone member, the quartz slate member, and the iron-bearing member, by Irving and Van Hise, and on the southern complex, the upper slate member, eruptives, the eastern area, and general geology (structure and correlation) by Van Hise. Illustrated by colored geologic maps and petrographic plates.

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UPHAM, Warren—Continued.

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_Applaudia_, vol. 6, pp. 191-207.

Describes the structural features and history of instances of each of the classes proposed and briefly reviews the conditions and nature of mountain making in the several districts.

Utah.

Cambrian of North America, WAlcOTT.

Classification of mountain ranges, UPHAM.

Cretaceous of North America, WHITE, C. A.

Devonian and Carboniferous, correlation, WILLIAMS, H. S.

Fauna of lower Cambrian, WAlcOTT.

Notes on asphaltum, STONE.

Stones for building, MERRILL, G. P.

Vermont.

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Chazy formation in the Champlain valley, BRAINERD.

American opinion on the older rocks, WInCHELL, A.

Fauna of lower Cambrian, WOLCOTT.

Identity of lower Cambrian in Rutland region, JAMES.

Lower Cambrian age of Stockbridge limestone, WOLFF.

Manganese deposits, PENROSE.

Metamorphism in conglomerate schist, WOLPF.

Overthrust faults, WAlcOTT.

Relation of strength of marble to its structure, PERRY.

Stones for building, MERRILL, G. P.

Virginia.

Artesian wells, WOOLMAN.

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Composition of certain Mesozoic igneous rocks, CAMPBELL and BROWN.

Contrast in color of soils, CRoSBY.

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Date of origin of certain topographic forms, DAVIS.

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Virginia—Continued.

Excursion across Appalachians, Williams, G. H.

Expedition to southern Maryland, Clark, W. B.

Fauna of lower Cambrian, Walcott.

Fresh water morasses, Shaler.

Genesis of iron ores, Kimball.

Geologic position of Catskill group, Prosser.

Iron ores of Virginia, Pench. Manganese deposits, Penrose.

Manganese districts at Cremora, Hull, C. E.

Map of southwest Virginia, Boyd.


With brief prefatory remarks on the stratigraphy of the beds.

Wadsworth, M. E. The South Trap range of the Keweenawan series.


Notes on relation of traps, sandstones, and crystalline schists, and discussion of their bearing on the general relations of the traps to the eastern sandstones.

—- On the relations of the eastern sandstone of Keweenaw Point to the lower Silurian limestones.


Announcement of the discovery of a contact west of L'Anse exhibiting contact, and comments on the bearing of the relations on the age of the sandstone.

—- A sketch of the geology of the Marquette and Keweenaw districts.

Along the South Shore of Lake Superior, Duluth, South Shore and Atlantic Railway Co., pp. 63-80 [1890]. Also with changes and additions in second edition [1891], pp. 55-59.

Account of character and distribution of the rocks and a discussion of their relations, classification and history, and of the origin of the ores.


WALCOTT, Charles Doolittle—Cont'd.
— [Extension of Cretaceous over the central basin of Texas.]
In discussion of paper by R. T. Hill, "The Comanche series of the Texas-Arkansas region."
— Discussion of the geological structure of the Selkirk range.
Discussion of G. M. Dawson, "Note on the geological structure of the Selkirk range." Regarding the stratigraphic range of the Cambrian members and the age of the Bow river series.

WALKER, Joseph B. [Iron ore district of east Texas,] Panola county.
Notes on stratigraphy, and accounts of economic resources.
— [Iron ore district of east Texas,] Shelby county.
Notes on stratigraphy and economic resources.
— [Iron ore district of east Texas,] Rusk county.
Notes on stratigraphy and economic resources.
— [Iron ore district of east Texas,] Nacogdoches county.
Description of stratigraphy and economic resources.
— [Iron ore district of east Texas,] Cherokee county.
Notes on economic resources and an account of a recent earthquake.

WARD, Lester F. The plant-bearing deposits of the American Trias.
— Principle and methods of geologic correlation by means of fossil plants.

Washington.
Coalmeasures, DEWSNAP. Cretaceous of North America, WHITE, C. A.
Infusorial earths, EDWARDS.
Stones for building, MERRILL, G. P.

WATTS, W. L. Merced county.
California, 10th Report of Mineralogist, pp. 383-392, 1890.
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WATTS, W. L.—Continued.
— Sacramento county.
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Includes well records and notes on economic geology.
— San Joaquin county.
California, 10th Report of Mineralogist, pp. 548-566, 1890.
Includes account of deep borings at various localities.
— San Mateo county.
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Includes well records.
— Santa Clara county.
California, 10th Report of Mineralogist, pp. 605-619, 1890.
Includes a series of well records and notes on water-bearing strata.
— Santa Cruz county.
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Notes on general geology, economic minerals, and artesian wells.
— Stanislaus county.
California, 10th Report of Mineralogist, pp. 680-690, 1890.
Notes on economic geology, well records, and irrigation.
— Yolo county.
California, 10th Report of Mineralogist, pp. 773-783, 1890.
Notes on well borings and economic minerals.

WEED, Walter Harvey. The Cinnabar and Bozeman coal fields of Montana.
Description of their stratigraphy, general geology, and structure, and consideration of the age of the coal measures.
— A gold-bearing hot spring deposit.
Account of specimens from Morgan mine, Queensland, Australia, with notes on the geologic relations.
— Notes on the coal fields of Montana.
Account of the stratigraphy and general geologic relations of the coal beds.
— The geological works of mosses and algae.
Enumeration of some of the chemico-organic agencies which produce geologic deposits.
— Formation of travertine and siliceous sinter by the vegetation of hot springs.
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WENDT, Arthur F. The Potosi, Bolivia, silver district.
Includes an account of the Paleozoic, Mesozoic, and Tertiary formations, volcanic rocks, old lake deposits, evidence of glacial action, vein structure, and age of the veins. Accompanied by a folded colored geological map.

West Indies. Phosphate deposits of Navassa, D'INVILLIERS.

West Virginia, see Virginias.

WHEELAN, P. H. The gas well at Summerland [Santa Barbara county,] California, 10th Report of Mineralogist, pp. 631-653, 1890.
Includes the record of a 104-foot boring.

A summary of the present knowledge of the North American Cretaceous and discussion of the classification and correlation of its formations. Includes a review of the principles of classification and an annotated list of the principal literature of the Cretaceous.

A description of the species, preceded by a general description of the Texas Permian and a discussion of its faunal characteristics.

— Report, Mesozoic division of invertebrate paleontology.
Includes references to observations on the mingling of Permian and Mesozoic faunas in the Texas Permian, and on the relations of the Cretaceous formations of the Gulf coast to those of the interior region.

Includes reference to classification of certain similar forms and general remarks on their distribution.

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In discussion of paper by G. F. Becker: "Notes on the early Cretaceous of California and Oregon."

— [Remarks on classification of Cretaceous members in southern interior North America.]
In discussion of paper by R. T. Hill: "The Comanche series of the Texas-Arkansas region."

— [Remarks on Cretaceous stratigraphy in Alabama.]
In discussion of paper by D. W. Langdon: "Variations in the Cretaceous and Tertiary strata of Alabama."

— On certain Mesozoic fossils from the islands of St. Paul's and St. Peter's, in the Straits of Magellen.
Has a prefatory note regarding their age.

Descriptions of the thickness, character, and extent of the various formations, the structure of the region, and the distribution of the coal beds. Discusses the age and correlation of some of the formations.

WHITEAVES, J. F. Descriptions of four new species of fossils from the Silurian rocks of the southeastern portion of the district of the Saskatchewan.
Canadian Record of Science, vol. 4, pp. 293-303, pl. 3.
Includes a brief reference to the beds in which they occur.

WHITTLE, Charles Livy. The Beach phenomena at Quaco, New Brunswick.
Description of the two bars in the harbor and an elevated beach, with comments on their history, and notes on the relations of the Newark and Carboniferous formations of the vicinity.

— Genesis of the manganese deposits of Quaco, New Brunswick.
Includes an account of their geologic relations.

WILLIAMS, George Huntington. The petrography and structure of the Piedmont plateau in Maryland.
WILLIAMS, Geo. Huntington—Cont'd.
Descriptions of the rocks and discussion of their relations and history and of the structure of the region. Illustrated by a geologic map.

— The silicified glass-breccia of Vermillion river, Sudbury district.
Abstracts, Am. Geologist, vol. 7, p. 261, 3 lines;
Petrographic description and discussion of its nature.

— [On transition of crystalline and semi-crystalline rocks in eastern Maryland.]
In discussion of paper by B. Pumppelly: "The relation of secular rock disintegration to certain transitional crystalline schists."

— [Fossils in the Newark formation of Frederick county, Maryland.]
Statement of localities and of the general nature of the fossils.

— Anglesite, cerussite and sulphur from the Mountain View lead mine, near Union Bridge, Carroll county, Maryland.
Johns Hopkins Univ., Circulars, vol. 10, pp. 73-75, No. 87, 4°.
Includes a brief prefatory account of the geology of the vicinity.

Folded colored geologic map, with geology of sedimentary rocks, by N. H. Darton.

— The rocks and their relations [Piedmont plateau].
General account of the geology of the rocks of the central Piedmont plateau.

— Crystalline rocks of Washington.
Description of the general features and leading rock types.

— The work on the crystalline rocks of Maryland.
Abstract, Ib., pp. 31-32.
Account of scope of the work and statement of results.

WILLIAMS, Geo. Huntington—Cont'd.

— The geological excursion by university students across the Appalachians in May, 1891.
Geologic notes from Baltimore via Washington to the Cumberland plateau, including Harper's Ferry, Hancock, Cumberland, and the coal mines at Lonaconing.

— The greenstone schist areas of the Menominee and Marquette regions of Michigan.
Abstract of paper described in Record for 1890.

Review of the literature and general discussion of nomenclature, classification, correlation, and stratigraphy of the North American Devonian and Carboniferous formations, with an introductory chapter on geologic classification and nomenclature in general.

— What is the Carboniferous system? [Abstract.]
Gives the early history of the application of the name, and a summary of the characteristics and relations of the formation in the Pennine range— its type locality. Discusses the status of the name and correlation of the American Carboniferous with the Pennine Carboniferous.

WILLIAMS, J. Francis. The igneous rocks of Arkansas.
Descriptions of the relations and petrography of the igneous and associated rocks in the several districts. Accompanied by folded, colored geologic maps.

— Kemp, J. F., and. Tabulation of the dikes of igneous rocks of Arkansas.
Table in which locality, strike, dip, wall rock, and petrographic peculiarities are listed.

WILLIAMS, J. Lawton. On cycles of sedimentation.
A discussion of the nature of the conditions to which they are due, especially their relation to earth-crust movements.

WILLIS, Bailey. Graphic field notes for areal geology.
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WILLIS, Bailey—Continued.

— Report, Appalachian division.
Includes some general statements regarding Appalachian stratigraphy and the mechanism of faults.

[On the relations existing between faulting and the arrangement of strata in the vertical column, in the Appalachian region.]


In discussion of paper by C. W. Hayes: “The overthrust faults of the Southern Appalachians.” Points out certain relations which determine the nature and distribution of faults in the Appalachians.

WILLISTON, S. W. On the structure of the Kansas chalk.

Brief statement of the nature and size of its component organisms.

WINCHELL, Alexander. A last word with the Huronian.

Review of the original application of the name, discussion of the structural and lithological discordance between the two systems which it comprised in the various regions, account of personal observation in the Echo Lake region and conclusions regarding the restriction of the term “Huronian.”

— American opinion on the older rocks.


Recent observations on some Canadian rocks.

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WINCHELL, Horace V. Geological age of the Saganaga granite.

Discussion of its relations to surrounding rocks, the significance of the occurrence of an included band of chaledonic silica and the bearing of the age of the granite on the equivalency and history of certain other rocks in northern Minnesota.

— WINCHELL, N. H., and. The iron ores of Minnesota, their geology, discovery, development, qualities and origin, and comparison with those of other iron districts.

Minnesota, Geol. Survey, Bull. No. 6, 430 pages, 44 plates, including three folded maps, Minneapolis.

Includes an extended description of their characters and geologic relations, a comparison of the ores of Minnesota with those of Michigan, Wisconsin, and the “Taconic” region and a discussion of their age and origin and of the origin of iron ores in general, with a bibliography of the origin of iron ores. Illustrated by a colored geologic map and with plates of microscopic rock sections. In appendices A, B, C, are republished “On a possible chemical origin of the ores of the Keewatin in Minnesota” and “The Taconic iron ores of Minnesota and western New England,” by N. H. and H. V. Winchell, and “The Eastern equivalents of the Minnesota iron ores,” by N. H. Winchell.

— On a possible chemical origin of the iron ores of the Keewatin in Minnesota.

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— The Taconic iron ores of Minnesota and western New England.

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WINCHELL, N. H. Record of field observations.

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The eastern equivalents of the Minnesota iron ores.

Minnesota, Geol. Survey, Bull. No. 6, pp. 411-419
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Comparison of Minnesota ore deposits with the iron deposits of other regions, especially those of New York and western New England, with comments on geologic relations and nomenclature in the “Taconic” region.

— What constitutes the Taconic mountains? [Abstract.]


and WINCHELL, H. V. The iron ores of Minnesota, their geology, discovery, development, qualities, and
WINCHELL, N. H. and H. V.—Cont'd.

origin, and comparison with those of other iron districts.
Minnesota, Geol. Survey, Bull. No. 6, 430 pages, 44 plates, including three folded maps Minneapolis.

Includes an extended description of their characters and geologic relations, a comparison of the ores of Minnesota with those of Michigan, Wisconsin, and the "Taconic" region, and a discussion of their age and origin and of the origin of iron ores in general, with a bibliography of the origin of iron ores. Illustrated by a colored geologic map and with plates of microscopic rock-sections. In appendices A, B, C, are republished "On a possible chemical origin of the ores of the Keewatin in Minnesota" and "The Taconic iron ores of Minnesota and western New England", by N. H. and H. V. Winchell, and "The eastern equivalents of the Minnesota iron ores", by N. H. Winchell.

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Description of physiography and structure, and discussion of the character, age, and cause of the flexing, the genesis of the physiography, and the age of the rocks. Discussed by T. M. Read, Am. Geologist, vol. 8, pp. 275-287.


Contains a history of geologic exploration in the state.

— Remarks on the construction of topographic maps for geologic purposes. [Abstract.]

Wisconsin—Continued.

American opinion on the older rocks, WINCHELL, A.

Altitude of United States during glacial period, CHAMBERLIN.

Cambrian of North America, WALCOTT.

Conditions controlling artesian wells, HALL, C. W.

Iron ores of Minnesota, WINCHELL, N. H. and H. V.

Lake Superior stratigraphy, LAWSON.

Northern extension of pre-Pleistocene gravels, SALISBURY.

Penokee iron series, IRVING and VAN HISE.

Rock feature at Appleton, CHAMER.

Stones for building, MERRILL, G. P.

WOLFF, J. E. On the lower Cambrian age of the Stoeckridge limestone.

Description of the relations in the vicinity of Rutland, Vermont, announcement of the discovery of Cambrian fossils in the limestones and discussion of the structure and age of the formations in that district. Preceded by a review of previous opinions. Discussed by J. F. James, p. 338.

— Metamorphism of clastic feldspar in conglomerate schist.

Description of petrography of specimens from Green Mountain region in New England, with a brief account of the relations of the rocks.

— On some occurrences of ottelite and ilmenite schist in New England.

Abstract of paper described in Record for 1890.

WOOLMAN, Lewis. Artesian wells and water-bearing horizons of southern New Jersey [with a "note on the extension southward of diatomaceous clays and the occurrence there of flowing artesian wells."]

Discussion of the structure and stratigraphy of the water bearing strata in southern New Jersey and references to occurrences of the diatomaceous clays of the series in outcrops and wells at various points in Maryland and Virginia.

WORTHEN, A. H. Approximate geological map of the state of Illinois reduced from the map published in 1875,
WORTHEN, A. H.—Continued.
with volume 6, Geological Survey of Illinois.
Illinois, Geol. Survey, Geology and Palæontology, vol. 8, plate at end.
Black and white map, scale 32 miles to the inch.

Drift deposits of Illinois.
Account of the character and relations of the drifts and the occurrence of pre-Pleistocene fossils, with remarks on the Cretaceous to Pleistocene history.

Economical geology.
Account of deep borings in various parts of the state, mainly in the coal region, with comments on the stratigraphy of the beds penetrated.

WRIGHT, G. Frederick. Mr. Cushing and the Muir glacier.
Discusses the conditions under which forests were buried on the west side of the inlet.

Additional notes concerning the Nampa image.
Includes a discussion of the age of the beds and the source and relations of the lava beds of the region.

WRIGHT, G. Frederick—Continued.
Includes a discussion of the age of the beds and the source and relations of the lava beds of the region.

Man and the glacial period.
From supplementary notes to new edition of “The Ice Age in North America.”
References to discoveries of human implements at Newcomerstown, Ohio; Nampa, Idaho, and Bald mountain, California, with notes on the geological conditions under which they occur.

The glacial grooves on Kelly’s island to be preserved.
Includes brief reference to the character of the grooves and to the conditions of glaciation in the region.

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Wyoming. Cambrian of North America, WALKOTT.
Cretaceous of North America, WHITE, C. A.
Geological horizons as determined by vertebrate fossils, MARSH.
Minerals in spherulites from Glade creek, IDDINGS and PENFIELD.
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Stones for building, MERRILL, G. P.