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

WASHINGTON, D. C., *December, 1893.*

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UNITED STATES GEOLOGICAL SURVEY

J. W. POWELL, DIRECTOR.

RECORD

OF

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BY

NELSON HORATIO DARTON

WASHINGTON
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1892

RECORD OF NORTH AMERICAN GEOLOGY FOR 1891.

By Nelson Horatio Darton.

INTRODUCTORY.

This work is the continuation of the record for 1890,[1] 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: ⅛ 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.

[1] Bulletin U. S. Geological Survey, No. 91. Washington, 1891.

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.
Virginias.
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.

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

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American opinion on the older rocks, WINCHELL, A.

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Discussion of their identity and stratigraphic relations in the Kansas-Texas region.

CRAMER, Frank. On the rock-fractures at the Combined Locks Mill, Appleton, Wisconsin.

Am. Jour. Sci., 3d series, vol. 41, pp. 432–434.

Description of the fracture at the mill and of other similar fractures in the same region, and discussion of their cause.

CRAWFORD, J. Recent earthquakes in Nicaragua.

CRAWFORD, J.—Continued.

Am. Geologist, vol. 7, pp. 77–86, pl. 2.
Includes a brief account of the geology of the Granada region.

—— Neolithic man in Nicaragua.
Am. Geologist, vol. 8, pp. 160–166.
Describes the relations and characters of the stratum containing footprints, and discusses its age and history.

—— Viejo range of Nicaragua.
Am. Geologist, vol. 8, p. 190, ½ p.
Calls attention to extensive recent deposits of carbonate of lime from springs at the base of the Viejo range.

—— Evidences of a glacial epoch in Nicaragua.
Am. Geologist, vol. 8, pp. 306–314.
Account of striated surfaces and bowlder deposits and discussion of evidence of post-Pliocene elevation and subsidence of the region.

—— Human footprints in recent volcanic mud in Nicaragua.
British Assoc. Adv. Science, Report of 60th meeting, p. 812, ½ p.
Account of relations, and history of the formation in which the footprints are contained.

—— On the geology of Nicaragua.
British Assoc. Adv. Science, Report of 60th meeting, pp. 812–813, ½ p.
An enumeration of the general geologic features.

CRESSON, Hilborne T. A fallen forest and peat layer underlying aqueous deposits in Delaware.
Geol. Soc. Am., Bull., vol. 2, pp. 640–642.
Sketch of the geology of the lower Delaware valley, and an account of relations of the forest and peat layer, and discussion of their age.

Cretaceous. *Atlantic Coast Region.* Cretaceous formations of North America, WHITE, C. A.
Date of origin of topographic forms, DAVIS.
Physical geography of southern New England, DAVIS.
Report, Atlantic Coast division, U. S. Geol. Survey [Cape Cod], SHALER.
Lost volcanoes of Connecticut, DAVIS.
Triassic of Connecticut valley, DAVIS.
Artesian wells of New Jersey, SMOCK.
Fire clay, Staten island, HOLLICK.
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Geology of Washington region, DARTON. MCGEE.
Eastern Virginia and Maryland, DARTON.

Cretaceous—Continued.
Expedition into southern Maryland, CLARK, W. B.
Stratigraphy in Alabama, WHITE, C. A.
Cretaceous and Eocene of Maryland, UHLER.
Variations in Alabama, LANGDON.
Cahaba coal field region map, MCCALLEY. SQUIRE. SMITH.
Potomac formations of North Carolina and flora of Tuscaloosa formation, FONTAINE.
Section along Chattahoochee river, LANGDON.
Georgia Geological Survey report, SPENCER.
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Structure of the Selkirk range, DAWSON, G. M.
Later physiographic geology of Rocky mountain region, DAWSON, G. M.
Northern extension of earlier Cretaceous, DAWSON, G. M.
Country north of Lesser Slave lake, MCCONNELL.
Foraminifera and radiolaria from Manitoba, TYRRELL.
Lake Winnipegosis and Porcupine mountains, TYRRELL.
Cretaceous formations of North America, WHITE, C. A.
Glacial Lake Agassiz, UPHAM.
Illinois. Drift deposits, WORTHEN.
Kentucky. Map. PROCTOR.
Mexico. Cretaceous deposits of Mexico, HILPRIN.
Cretaceous formations of North America, WHITE, C. A.
Mississippi river to Rocky mountains. Comanche series of Texas-Arkansas region, HILL.
Extension of Cretaceous over Central basin of Texas, WALCOTT. HILL.
Southern interior of North America, WHITE, C. A.
Trans-Pecos Texas, STREERUWITZ.
Cretaceous [of Trans-Pecos Texas], TAFF.
Cretaceous formations of North America, WHITE, C. A.
Igneous rocks of Arkansas, WILLIAMS, J. F.
Western Arkansas, WINSLOW.

Cretaceous—Continued.
Notes on geology of New Mexico and southwestern Texas, HILL.
Geology of the Southwest, HILL.
Report of State Geologist of Texas, DUMBLE.
Report on northwestern Texas, CUMMINS.
Reconnaissance in Indian Territory, HILL.
Report on central mineral region, COMSTOCK.
Concho county, Texas, LERCH.
Texas Permian and its Mesozoic type of fossils, WHITE, C. A.
Salt, Kansas, HAY.
Northwest Kansas, HAY.
Iron ores of Minnesota, WINCHELL, N. H. and H. V.
Megalonyx beds in Kansas, UDDEN.
Kansas salt marshes, HAY.
Fuel resources of Colorado, LAKES.
Black Hills and Big Horn country, CHANCE.
Cheyenne sandstone of Kansas, CRAGIN.
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Interesting occurrence of gold [Colorado], HAUSMANN.
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Pacific Coast region. Faunas of the Shasta group, WHITE, C. A.
Early Cretaceous of California and Oregon, BECKER.
Coal measures of Washington, DEWSNAP.
Orange County, California, BOWERS.
Report, Cascade division, U. S. Geol. Survey, DILLER.
[Counties in California], GOODYEAR.
Nevada and Placer counties, California, HOBSON.
Geology of Mount Diablo, California, TURNER.
Chemistry of Mount Diablo rocks, MELVILLE.
Coal mining in Oregon, NORTON.
Lassen and Los Angeles counties, California, PRESTON.
Cretaceous formations of North America, WHITE, C. A.

Cretaceous—Continued.
Gold ores in California, HAMMOND.
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Nomenclature. Cretaceous formations of North America, Correlation, WHITE, C. A.
Northern extension of earlier Cretaceous in western British America, DAWSON, G. M.
Classification in southern interior of North America, WHITE, C. A.

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

Boston Soc. Nat. Hist., Proc., vol. 25, pp. 115–140.

Abstract, **Am. Jour. Sci.**, 3d series, vol. 42, p. 259, ½ p.

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. 8, pp. 72–82.

Technology Quart., vol. 4, pp. 36–45.

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.

Washington, Phil. Soc., Bull., vol. 11, pp. 411–443, pls. 5, 6.

Review by Anon., **Am. Geologist**, vol. 8, pp. 387–392.

Description of spherulites from Colorado, discussion of mineralogic constituents of spherulites, and historical review of spherulite literature.

—— On alunite and diaspore from the Rosita hills, Colorado.

Am. Jour. Sci., 3d series, vol. 41, pp. 466–475.

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.

Texas, Geol. Survey, Second Annual Report, pp. 357–552, map.

Abstract **Am. Jour, Sci.**, 3d series, vol. 42, p. 430, ⅔ p.

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. [Relations of Paleozoic and pre-Paleozoic rocks in the Central basin of Texas.]

Geol. Soc. Am., Bull. vol. 2, pp. 527-528.

CURTICE, Cooper—Continued.

In discussion of "the Comanche series of the Texas-Arkansas region," by R. T. Hill.

CUSHING, H. P. Notes on the Muir glacial region, Alaska, and its geology.

Am. Geologist, vol. 8, pp. 207-230, pls. 3, 4.

Description of the glaciers and their deposits, and discussion of the glacial history of the region and the erosive power of the Muir glacier.

D.

Dakotas, Area and duration of Lake Agassiz, UPHAM.

Cambrian of North America, WALCOTT.

Conditions controlling artesian well-boring, HALL, C. W.

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

Glacial Lake Agassiz in Manitoba, UPHAM.

New fishes from South Dakota, COPE.

DALE, T. Nelson. The Greylock synclinorium.

Am. Geologist, vol. 8, pp. 1-7.

Abstract, **Am. Jour. Sci.,** 3d series, vol. 42 p. 347, ½ p.

A condensed description of the structure and stratigraphy of the Greylock region and a postulation of certain structural principles which are therein illustrated.

DALL, W. M. Elevation of America in the Cenozoic periods.

Geological Magazine, 3d decade, vol. 8 pp. 287-288.

American Naturalist, vol. 25, pp. 735-736.

Points out the bearing of evidence in the Panama and Florida regions in review of W. Upham.

—— On the age of the Peace creek beds, Florida.

Philadelphia, Acad. Sci., Proc., 1891, p. 120, ⅓ p.

Abstract, **Am. Geologist,** vol. 7, p. 382, 4 lines.

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.

Am. Jour. Sci., 3d series, vol. 42, pp. 79-110, pls. 2, 7.

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.

Am. Jour. Sci., 3d series, vol. 42, pp. 439-447, pl. 16.

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.

Am. Jour. Sci., 3d series, vol. 42, pp. 70-72.

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

Not seen.

DARTON, N. H. Mesozoic and Cenozoic formations of eastern Virginia and and Maryland.

Geol. Soc. Am., Bull., vol. 2, pp. 431-450, pl. 16.

Abstracts, **Am. Geologist,** vol. 8, p. 185, ½ p.; **Am. Naturalist,** vol. 25, p. 658, 4 lines.

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.

—— Geology of sedimentary rocks. Washington sheet, Maryland, District of Columbia, Virginia. U. S. Geological Survey.

Guide to Washington, prepared for the International Congress of Geologists, Fifth Session, Washington. In back. Folded, colored geologic map, with geology of crystalline rocks, by G. H. Williams.

—— Clastic formations of Washington.

Guide to Washington prepared for the International Congress of Geologists, Fifth Session, Washington, pp. 59-62.

Description of the general structure and of the Cretaceous, Tertiary, and Pleistocene formations.

DARTON, N. H.—Continued.

—— Record of North American geology for 1887 to 1889, inclusive.

U. S. Geol. Survey, Bulletin No. 75, 173 pages. Washington.

List of papers with descriptive notes and index references.

—— Record of North American geology for 1890.

U. S. Geol. Survey, Bulletin No. 91, 88 pages. Washington.

List of papers with descriptive notes and index references.

—— Notes on the geology of the Florida phosphates.

Am. Jour. Sci., 3d series, vol. 41, pp. 102–105.

Abstract, **Engineering and Mining Jour.**, vol. 51, p. 210, 1½ col. 4°.

Descriptions of the several classes of deposits, and discussion of their geologic relations and history.

—— Record of a deep well at Lake Worth, southern Florida.

Am. Jour. Sci., 3d series, vol. 41, pp. 105–106.

Brief notes on materials penetrated in a 1212-foot well, and statements in regard to the age and limits of the beds.

—— The relations of the traps of the Newark system in [the] New Jersey [region].

Am. Naturalist, vol. 25, p. 910, ½ p.

Abstract of paper described in Record for 1890.

—— On a jointed earth-auger for geological explorations in soft deposits.

Am. Geologist, vol 7, pp. 117–119.

Engineering and Mining Jour., vol. 51, p. 401, ½ col. 4°.

Abstract, **Geol Soc. Am., Bull.**, vol. 2, p. 638, 8 lines.

Instructions for its construction and use.

DAVIDSON, Walter B. M. Suggestions as to the origin and deposition of Florida phosphates.

Engineering and Mining Jour., vol. 51, pp. 628–629, 4°.

—— A phosphatic chalk at Taplow, England.

Engineering and Mining Jour., vol. 52, p. 502, ⅔ col. 4°.

Extracts from a paper with this title by M. A. Strahan, who holds that the phosphoric acid in the deposits was mainly derived from fishes. Suggests that the Florida phosphates were similarly derived.

DAVIS, William M. The geological dates of origin of certain topographic forms on the Atlantic slope of the United States.

Geol. Soc. Am., Bull., vol. 2, pp. 541–542, 545–586.

Abstract, **Am. Geologist**, vol. 8, p. 260, ¼ p.

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.

—— Introductory statement. Two belts of fossiliferous black shale in the Triassic formation in Connecticut.

Geol. Soc. Am., Bull., vol. 2, pp. 415–424, 430.

Abstracts, **Am. Geologist**, vol. 8, p. 118, ⅔ p.

Am. Jour. Sci., 3d series, vol. 42, pp. 72–73.

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 overthrusts in the southern Appalachians.]

Geol. Soc. Am., Bull., vol. 2, pp. 153–154, ½ p.

Abstract, **Am. Geologist**, vol. 7, p. 262, ⅛ p.

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

—— The physical geography of southern New England.

Johns Hopkins Univ., Circulars, vol. 10, No. 87, pp. 78–79, $\frac{8}{10}$ 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, ½ 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.

Popular Science Monthly, vol. 40, pp. 221–235.

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?

Am. Geologist, vol. 7, pp. 139–140.

Reviewed by J. W. Spencer, ibid., pp. 266–267, ⅔ p.

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, ¼ 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.

cial 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.

Canada, Geol. Survey, Reports, vol. 4, new series, report B, 66 pages, map, plates, 1890.

Abstracts, ibid. report A, pp. 7-12; **Am. Geologist,** vol. 8, pp. 392-394.

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.

Geol. Soc. Am., Bull., vol. 2, pp. 165-176.

Abstracts, **Am. Geologist,** vol. 7, pp. 262-263, ½ p. **Am. Naturalist,** vol. 25, p. 658, 3 lines.

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, ¼ p.

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

Geol. Soc. Am., Bull., vol. 2, p. 207, ¼ p.

In discussion of paper by G. F. Becker: "Notes on the early Cretaceous of California and Oregon." Refers to an occurrence of *aucella*-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.]

Geol. Soc. Am., Bull., vol. 2, pp. 275-276.

Abstract, **Am. Geologist,** vol. 7, p. 143, 5 lines.

Discussion of paper by W. Upham, "Glacial Lakes of Canada."

DAWSON, J. William. Carboniferous fossils from Newfoundland.

Geol. Soc. Am., Bull., vol. 2, pp. 529-540, pls. 21, 22.

Abstract, **Am., Geologist,** vol. 8, pp. 259-260, ¼ p.

Includes brief introductory note on the geology of the region and concluding remarks on the stratigraphy of the coal formation of 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.]

Am. Geologist, vol. 7, p. 363, ⅜ p.

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. 534-539, 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.

Am. Jour. Sci., 3d series, vol. 41, pp. 308-311.

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.

Am. Jour. Sci., 3d series, vol. 41, pp. 311-321.

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

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

Am. Assoc. Adv. Science, Proc., vol. 39, p. 263, ¼ p.

Notices of their nature and associates.

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

Am. Assoc. Adv. Science, Proc., vol. 39, p. 263, 4 lines.

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'INVILLIERS.
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, SPENCER.
Physical geology of Tennessee, HULL.
Plateau region of Alabama, McCALLEY. SMITH.
Cahaba coal field, McCALLEY. SMITH.
Appalachians to Mississippi river. Rocks at St. Paul, Indiana, BEACHLER.
Age of Cincinnati anticlinal, FOERSTE.
Cuyahoga shale and Waverly problem, HERRICK.
Notes on southwestern New York, HARRIS.
Map of Kentucky, PROCTER.
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, TYRRELL.
Nova Scotia, FLETCHER.
Cape Breton, GILPIN.
West Kootanie district, DAWSON, G.M.
Yukon and Mackenzie basins, McCONNELL.
West of the Mississippi river. Devonian rocks of Buchanan county, Iowa, CALVIN.
Washington county, Arkansas, SIMONDS.
Introduction [Washington county, Arkansas], BRANNER.
Contributions to geology of the Southwest, HILL.
Report, Montana division, U. S. Geol. Survey, PEALE.

Devonian—Continued.
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Central mineral region of Texas, COMSTOCK.
General and nomenclature. Age of Catskill flora, DAWSON, J. W.
Geological position of the Catskill group, PROSSER.
Devonian and Carboniferous, correlation, WILLIAMS, H. S.

DEWSNAP, S. G. The coal measures of Washington.
Engineering and Mining Jour., vol. 52, pp. 245, 246, ⅔, p. 4°.
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.
U. S. Geol., Survey, Bull. No. 79, 33 pages, 17 plates. Washington.
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.
U. S. Geol. Survey, 10th Report, J. W. Powell. pp. 144-147. 1890.
Includes references to observations on the structure of the Crazy mountains in Montana; on *Aucella* 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.

—— [Relations of the Cretaceous formations in northern California].
Geol. Soc. Am., Bull., vol. 2, p. 206, ⅔ p.
In discussion of paper by G. F. Becker, "Notes on the early Cretaceous of California and Oregon."

DUMBLE, E. T. Report of the State Geologist for 1890.
Texas, Geol. Survey, Second Annual Report, pp. v-lxxxviii.
Includes a general account of the mineral resources of Texas, pp. xxv-lxviii, and a discussion of the artesian water conditions of the state, pp. lxvii-lxxxviii.

—— A general description of the iron ore district of east Texas.
Texas, Geol. Survey, Second Annual Report, pp. 7-31.
Abstract, **Am. Naturalist,** vol. 25, pp. 737, 910-911, ¾ p.
Account of topography and stratigraphy of the region and the mode of occurrence of the ores.

—— [Iron ore district of east Texas] Anderson county.

DUMBLE, E. T.—Continued.

Texas, Geol. Survey, Second Annual Report, pp. 303–317.

Description of stratigraphy and economic resources.

—— [Iron ore district of east Texas] Houston county.

Texas, Geol. Survey, Second Annual Report, pp. 318–326.

Notes on stratigraphy and economic resources and analyses of soils.

—— Important results of the Texas survey.

Am. Geologist, vol. 7, pp. 267–269.

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 titanic oxide upon the surface of the earth.

Am. Jour. Sci., 3d series, vol. 42, pp. 491–495.

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 Oceanica.

E.

EAKINS, L. G. Five Cherokee limestones. [Analyses].

U. S. Geol. Survey, Bull. No. 78, p. 125, ½ p.

From the lead-zinc region of southwestern Missouri.

East Indies. Permian, Triassic, and Jurassic of Timor and Rotti, ROTHPLETZ.

EDWARDS, Arthur M. Report of the examination by means of the microscope of specimens of infusorial earths of the Pacific Coast of the United States.

Am. Jour. Sci., 3d series, vol. 42, pp. 369–385.

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, ⅓ col., 4°.

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.

Canada, Geol. Survey, Reports, vol. 4. new series, Report K. 159 pages, 1890.

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.]

Canada, Geol. Survey, Reports, vol. 4, new series, Report A, pp. 33–34, 1890.

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.

Geol. Soc. Am., Bull., vol. 2, pp. 451–456, pl. 17.

Abstracts, **Am. Geologist,** vol. 8, p. 185, ¼ p.

Am. Naturalist, vol. 25, p. 910, ⅓ p.

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.]

Geol. Soc. Am., Bull., vol. 2, p. 223, ¼ p.

In discussion of paper by R. Pumpelly: "The relation of secular rock disintegration to certain transitional crystalline schists."

—— [Stratigraphic position of fossil-bearing beds in the Newark formation in Massachusetts.]

Geol. Soc. Am., Bull., vol. 2, p. 430, 4 lines.

In discussion of paper by W. M. Davis: "Two belts of fossiliferous black shales in the Triassic formation of Connecticut."

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—— Biographical notice of Ebenezer Emmons.

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—— [Fish remains in the Lower Helderberg of New Brunswick.]

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Includes references to observations on the commingling 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.

—— On the biological and geological significance of closely similar fossil forms.

Am. Assoc. Adv. Science, Proc., vol. 39, pp. 239–243.

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—— [On the fauna of the "Shasta group" and of the supposed Trias from the Mineral King district.]

WHITE, C. A.—Continued.

Geol. Soc. Am., Bull., vol. 2, p. 208.

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.]

Geol. Soc. Am., Bull., vol. 2, pp. 525–526.

In discussion of paper by R. T. Hill: "The Comanche series of the Texas-Arkansas region."

—— [Remarks on Cretaceous stratigraphy in Alabama.]

Geol. Soc. Am., Bull., vol. 2, p. 606, ⅓ p.

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.

U. S. National Mus. Proc., vol. 13, pp. 13–14, pls. 2, 3.

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Includes a brief reference to the beds in which they occur.

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Am. Geologist, vol. 7, pp. 183–187.

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.

Boston Soc. Nat. Hist., Proc., vol. 25, pp. 253–258.

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WILLIAMS, George Huntington. The petrography and structure of the Piedmont plateau in Maryland.

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Abstracts, **Am. Geologist**, vol. 8, pp. 330–331, ½ p.; **Am. Naturalist**, vol. 25, pp. 909–910, ⅓ p.

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.

Geol. Soc. Am., Bull., vol. 2, pp. 138–140.

Abstracts, **Am. Geologist**, vol. 7, p. 261, 3 lines; **Am. Naturalist**, vol. 25, pp. 1005–1006, ¼ p.

Petrographic description and discussion of its nature.

—— [On transition of crystalline and semi-crystalline rocks in eastern Maryland.]

Geol. Soc. Am., Bull., vol. 2, p. 223, ¼ p.

In discussion of paper by R. Pumpelly: "The relation of secular rock disintegration to certain transitional crystalline schists."

—— [Fossils in the Newark formation of Frederick county, Maryland.]

Geol. Soc. Am., Bull., vol. 2, p. 318, ⅙ p.

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.

—— Geology of crystalline rocks. Washington sheet. Maryland, District of Columbia, Virginia. U. S. Geological Survey.

Guide to Washington, prepared for the International Congress of Geologists, Fifth Session, Washington. In back.

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

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Abstract, Ib., pp. 31–32.

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WILLIAMS, Geo. Huntington—Cont'd.

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Johns Hopkins Univ., Circulars, vol. 11., pp. 25–27, No. 94, 4°.

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.

Am. Naturalist, vol. 25, pp. 572–574.

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WILLIAMS, Henry Shaler. Correlation papers. Devonian and Carboniferous, U. S. Geological Survey, Bull. No. 80, 279 pages. Washington.

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.]

Geol. Soc. Am., Bull., vol. 2, pp. 16–20.

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.

Arkansas, Geol. Survey, Report for 1891, vol. 2, pp. 1–391, 429–457, 22 plates, 8 maps.

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.

Arkansas, Geol. Survey, Report for 1891, vol. 2, "**Igneous rocks of Arkansas**," by **J. F. Williams**, pp. 407–427.

Table in which locality, strike, dip, wall rock, and petrographic peculiarities are listed.

WILLIAMS, J. Lawton. On cycles of sedimentation.

Am. Geologist, vol. 8, pp. 315–324.

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.

Geol. Soc. Am., Bull., vol. 2, pp. 177–188, pl. 6.

School of Mines Quart., vol. 12, pp. 319–333.

WILLIS, Bailey—Continued.

—— Report, Appalachian division.

U. S. Geol. Survey, 10th Report, J. W. Powell, pp. 119-122, 1890.

Includes some general statements rgarding 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.]

Geol. Soc. Am., Bull., vol. 2., p. 154, ¼ p.

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.

Kansas Acad. Sci., Trans., vol. 12, p. 100, ⅔ p., 1890.

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

WINCHELL, Alexander. A last word with the Huronian.

Geol. Soc. Am., Bull., vol. 2, pp. 85-124.

Abstracts, **Am. Naturalist**, vol. 25, pp. 651-652; **Am. Geologist**, vol. 7, p. 261, ½ p.

Review of the original application of the name, discussion of the structual 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.

Minnesota, Geol. Survey, 18th Report, pp. 65-219 [date?].

Review of writings of E. Emmons, D. Houghton, E. Hitchcock, H. D. Rogers, J. Hall, W. E. Logan, J. D. Whitney, T. S. Hunt, G. F. Matthew, C. H. Hitchcock, T. B. Brooks, W. H. Winchell, C. Rominger, R. D. Irving, A. C. Lawson, with citations from some others, on Archean, Algonkian, and Cambrian of North America.

—— Recent observations on some Canadian rocks.

Am. Naturalist, vol. 25, pp. 365-366, ¼ p.

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

Am. Jour. Sci., 3d series, vol. 41, pp. 386-390.

Discussion of its relations to surrounding rocks, the significance of the occurrence of an included band of chalcedonic 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.

Abstracts, **Engineering and Mining Jour.**, vol. 52, p. 3, ⅔ p. 4°; **Am. Geologist**, vol. 7, pp. 370-374.

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 Keewatkin 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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Minnesota, Geol. Survey Bull. No. 6, pp. 400-410.

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Mesabi iron range; about Tower; at Ely; Pokegama Falls and eastward; gold in the Keewatin in northern part of the state; crystalline rocks of Minnesota valley; at Duluth; on relations and age of the gabbro of the typical Huronian, and on the rocks about Sudbury, Ontario.

—— The eastern equivalents of the Minnesota iron ores.

Minnesota, Geol. Survey, Bull. No. 6, pp. 411-419

Read to Minnesota Academy of Science, Oct. 7, 1890.

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.]

Am. Assoc. Adv. Science, Proc., vol. 39, pp. 246-247, ⅛ p.

—— 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.

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WINSLOW, Arthur. The geotectonic and physiographic geology of western Arkansas.

Geol. Soc. Am., Bull., vol. 2, pp. 225–242, pl. 8.

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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. Reade, Am. Geologist, vol. 8, pp. 275–287.

—— Geological survey of Missouri. Biennial Report of the State Geologist transmitted by the Bureau of Geology and Mines to the General Assembly, 53 pages, 2 plates.

Contains a history of geologic exploration in the state.

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

Am. Assoc. Adv. Science, Proc., vol. 39, pp. 252–255.

Wisconsin.

A last word with the Huronian, WINCHELL, A.

Wisconsin—Continued.

American opinion on the older rocks, WINCHELL, A.

Altitude of United States during glaical period, CHAMBERLIN.

Cambrian of North America, WALCOTT.

Conditions controlling artesian wells, HALL, C. W.

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Lake Superior stratigraphy, LAWSON. VAN HISE.

Northern extension of pre-Pleistocene gravels, SALISBURY.

Penokee iron series, IRVING and VAN HISE.

Rock feature at Appleton, CRAMER.

Stones for building, MERRILL, G. P.

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

Geol. Soc. Am., Bull., vol. 2, pp. 331–337.

Abstracts, **Am. Geologist,** vol. 8, p. 117, ½ p.; **Am. Jour., Sci.,** 3d series, vol. 41, p. 435, ¼ p.

Description of the relations in the vicinity of Rutland, Vermont, announcement of the discovery of Cambrian fossils in the limestone 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.

Harvard Coll., Mus. Comp. Zool., Bull., vol. 17, pp. 173–184, 2 pls.

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 ottrelite and ilmenite schist in New England.

Am. Naturalist, vol. 25, p. 1005, ⅓ p.

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."]

New Jersey, Geol. Survey, Report for 1890, pp. 269–276.

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 Paleontology, vol. 8, plate at end.

Black and white map, scale 32 miles to the inch.

—— Drift deposits of Illinois.

Illinois, Geol. Survey, Geology and Paleontology, vol. 8, pp. 1-24, 1890.

Abstract, **Geol. Magazine**, 3d decade, vol. 8, p. 322, ⅓ p.

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.

Illinois, Geol. Survey, Geology and Paleontology, vol. 8, pp. 25-67, 1890.

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.

Am. Geologist, vol. 8, pp. 330-331.

Discusses the conditions under which forests were buried on the west side of the inlet.

—— Additional notes concerning the Nampa image.

Boston Soc. Nat. Hist., Proc., vol. 25, pp. 242-246.

Includes a discussion of the age of the beds and the source and relations of the lava beds of the region.

—— Additional notes concerning the Nampa image.

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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.

Popular Science Monthly, vol. 39, pp. 314-319.

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.

Science, vol. 17, pp. 358-359, ⅛ p.

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Includes brief reference to the character of the grooves and to the conditions of glaciation in the region.

WYATT, Francis. The phosphates of America, 187 pages, New York.

Not seen.

Wyoming. Cambrian of North America, WALCOTT.

Cretaceous of North America, WHITE, C. A.

Geological horizons as determined by vertebrte fossils, MARSH.

Minerals in spherulites from Glade creek, IDDINGS and PENFIELD.

Resources of Black Hills and Big Horn country, CHANCE.

Spherulite crystallization, IDDINGS.

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