

THE STATE OF WYOMING GEOLOGIST'S OFFICE

BULLETIN 17

BIBLIOGRAPHY AND INDEX OF WYOMING GEOLOGY

1823-1916

By GLADYS G. BOVEE

L. W. TRUMBULL, STATE GEOLOGIST
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CONTENTS

Introduction	317
Abbreviations of titles of serials	319
Bibliography	321
Authors' index.....	395
Cross index	413

BIBLIOGRAPHY AND INDEX OF WYOMING GEOLOGY

INTRODUCTION

The bibliography of Wyoming geology, including paleontology, petrology, and mineralogy, is believed to be fairly complete for the years 1823 to 1916, inclusive. The bibliographies of American geology, published by the U. S. Geological Survey from year to year, have been used *in toto* in so far as they apply to Wyoming.

The Bibliography is arranged by years, under which appear titles, names of authors, publication references and short explanations. The Authors' Index and Cross Index refer by number to the title as listed and numbered in the Bibliography. The cross references are thought to be sufficiently complete to assure the finding of an article when the index is entered in any of several different ways.

ABBREVIATIONS OF TITLES OF SERIALS

- Am. Assoc. Adv. Sci., Proc.—American Association for Advancement of Science, Proceedings.
- Am. Geologist—American Geologist.
- Am. Inst. Min. Eng.—American Institute of Mining Engineers.
- Am. Jour. Sci.—American Journal of Science.
- Am. Min. Cong.—American Mining Congress.
- Am. Mus. Nat. Hist.—American Museum of Natural History.
- Am. Naturalist—American Naturalist.
- Am. Paleontology—American Paleontology.
- Am. Philos. Soc.—American Philosophical Society.
- Annales de Géographie—Annales de Geographie.
- Annales des Mines—Annales des Mines.
- Boston Soc. Nat. Hist.—Boston Society of Natural History.
- Bot. Gazette—Botanical Gazette.
- British Assoc. Adv. Sci.—British Association for the Advancement of Science.
- California Acad. Sci.—California Academy of Sciences.
- Canadian Min. Jour.—Canadian Mining Journal.
- Canadian Min. Inst.—Canadian Mining Institute.
- Canadian Naturalist—Canadian Naturalist.
- Carnegie Inst. Washington—Carnegie Institution of Washington.
- Carnegie Mus.—Carnegie Museum.
- Cincinnati Quart. Jour. Sci.—Cincinnati Quarterly Journal of Science.
- Cincinnati Soc. Nat. Hist.—Cincinnati Society of Natural History.
- Columbia Univ. Geol. Dept.—Columbia University, Geological Department.
- Coal Age—Coal Age.
- Colorado School of Mines—Colorado School of Mines.
- Colorado Sci. Soc.—Colorado Scientific Society.
- Eng. and Min. Jour.—Engineering and Mining Journal.
- Geol. Mag.—Geological Magazine.
- Geol. Soc. America—Geological Society of America.
- Geol. Soc. Quart. Jour.—Geological Society Quarterly Journal.
- Harvard College Mus. Comp. Zool.—Harvard College, Museum of Comparative Geology.
- Internat. Cong. Geol.—International Congress of Geologists.
- Jour. Geology—Journal of Geology.
- Kansas Acad. Sci.—Kansas Academy of Sciences.
- Kansas City Rev.—Kansas City Review.
- Kansas Univ. Quart.—Kansas University Quarterly.
- London Geol. Soc.—London Geological Society.
- MacMillan's Mag.—MacMillan's Magazine.
- Min. and Eng. World—Mining and Engineering World.

ABBREVIATIONS OF TITLES OF SERIALS—*Continued*

- Min. Industry—Mining Industry.
Mines and Methods—Mines and Methods.
Mines and Minerals—Mines and Minerals.
Mineral Industry—Mineral Industry.
Min. Sci.—Mining Science.
Min. and Sci. Press—Mining and Scientific Press.
Min. World—Mining World.
Nature—Nature.
Nat. Geog. Mag.—National Geographic Magazine.
New York Acad. Sci.—New York Academy Science.
Ottawa Nat.—Ottawa Naturalist.
Petermann's Mitt.—Petermann's Mitteilungen.
Philadelphia Acad. Sci.—Philadelphia Academy of Natural Science.
Plant World—Plant World.
Pop. Sci. Monthly—Popular Science Monthly.
Salt Lake Min. Rev.—Salt Lake Mining Review.
School of Mines Quart.—School of Mines Quarterly.
Science—Science.
Sci. Am. Suppl.—Scientific American Supplement.
Scottish Geog. Mag.—Scottish Geographical Magazine.
Smithsonian Inst. Coll.—Smithsonian Institute, Miscellaneous Collections.
Soc. Geol. de France—Societe geologique de France.
S. Dakota Geol. Survey—South Dakota Geological Survey.
Terr. Geologist, Ann. Rept.—Territorial Geologist, Annual Report.
Torreya—Torreya.
Torrey Bot. Club—Torrey Botanical Club.
U. S. Army, Chief of Engineers—United States Army, Chief of Engineers.
U. S. Geol. Survey—United States Geological Survey.
U. S. Nat. Museum—United States National Museum.
Washington Acad. Sci.—Washington Academy of Sciences.
Washington Geol. Soc.—Washington Geological Society.
Washington Philos. Soc.—Washington Philosophical Society.
Western Eng.—Western Engineering.
Wyoming Hist. and Geol. Soc.—Wyoming Historical and Geological Society.
Wyoming, Geologist's Office.—Wyoming, Geologist's Office.
Wyoming Univ., Expr. Sta.—Wyoming University, Experiment Station.
Wyoming Univ. School of Mines.—Wyoming University School of Mines.
Zeitschr. F. prakt. Geol. Jahrg.—Zeitschur F. prakt Geologie, Jahrg.

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215. Record of North American geology for 1891, N. H. Darton.—U. S. Geol. Survey, Bull. 99, 73 pp.

216. Bear River formation, Charles A. White.—Am. Jour. Sci., 3d ser., vol. xliii, pp. 191-197; (abstract), Am. Geologist, vol. ix, pp. 266-267.

Reviews the publications of other writers regarding the age of the Bear River formation. His examinations made in company with Mr. T. W. Stanton, whose articles on the stratigraphic position of this formation immediately follow, led them to believe that this formation hitherto known as the Bear River Laramie is much older than it had hitherto been considered, and that it underlies the equivalent of the Fort Benton Cretaceous.

217. The stratigraphic position of the Bear River formation, Timothy W. Stanton.—Am. Jour. Sci., 3d ser., vol. xliii, pp. 98-115; (abstract), Am. Geologist, Vol. IX, pp. 266-267.

Gives detailed description of the geologic sections at Bear River City and vicinity, in western Wyoming, and shows that this formation, formerly considered to be of Laramie or later age, is intermediate between the Jurassic and Colorado Cretaceous and probably above the Dakota. Of its thirty species of molluscan remains none have been found in the true Laramie. Accompanied by map and four sections.

218. Restoration of the Claosaurus and Ceratosaurus, Othniel C. Marsh.—Am. Jour. Sci., 3d ser., vol. xliv, Appendix, pp. 343-349.

219. Fossil mammals of Wasatch and Wind River beds, Henry F. Osborn and J. L. Wortman.—Am. Mus. Nat. Hist., Bull., vol. iv, pp. 81-147; (abstract), Am. Jour. Sci., 3d ser., vol. xlv, pp. 159-160.

Includes the following special articles: Homologies and nomenclature of the mammalian molar cusps; the classification of the Perissodactyls; the ancestry of Felidae; taxonomy and morphology of the primates, credonts, and ungulates. 1, Wasatch, 2, Wind River; geological and geographical sketch of the Bighorn Basin; and narrative of the expedition of 1891.

220. The eruptive rock of Electric Peak and Sepulchre Mountain, Yellowstone National Park, Joseph P. Iddings.—U. S. Geol. Survey, Twelfth Ann. Rept., pt. 1, pp. 577-664, pls. xlvi-lxxii; (abstract), Am. Jour. Sci., 3d ser., vol. xliv, p. 429 ($\frac{1}{2}$ p.); Am. Geologist, vol. xiv, pp. 117-118, 1894.

Gives a geologic sketch of the region. Describes the diorite, porphyrite, and dyke rocks of Electric Peak and the andesite, dacite, and tuff of Sepulchre Mountain, and discusses their correlation and classification as igneous rocks.

221. The fossil forests of the Yellowstone, Walter H. Weed.—School of Mines Quart., vol. xiii, pp. 230-236.

Describes the geologic structure of the region and states that the fossil trees are found in a series of breccias and tuffs and have been

exposed by weathering of the rocks. These forests grew upon the flanks of a volcano and were covered and preserved by the debris of its eruptions.

1893.

222. Notes on the mineral resources of the State, W. C. Knight.—Wyoming, Exper. Sta., Bull. 14, pp. 103-212.
Gives the geology of the experiment farms and discusses the minerals found in each county.
223. The Ceratops beds of Converse County, John B. Hatcher.—Am. Jour. Sci., 3d ser., vol. xlv, pp. 135-144.
Describes the geographic distribution of the Ceratops beds in this region, the lithologic character of the strata and their stratigraphic position. Discusses the age of the Ceratops beds as indicated by the fossils, and the probable conditions attending their deposition.
224. Description of a new fossil species of Chara, Frank Hall Knowlton.—Bot. Gazette, vol. xviii, pp. 141-142.
Describes *Chara stantoni* n. sp. from the Bear River Cretaceous formation of Wyoming.
225. The skull and brain of Claosaurus, Othniel C. Marsh.—Am. Jour. Sci., 3d ser., vol. xlv, Appendix, pp. 83-86.
Describes the skull of *Claosaurus* found in Ceratops beds in Wyoming.
226. Revision of species of Coryphodon, Charles Earle.—Am. Mus. Nat. Hist., Bull., vol. iv, pp. 149-166, 1892; (abstract), Am. Jour. Sci., 3d ser., vol. xlv, p. 160 ($\frac{1}{3}$ p.).
Compares the *Coryphodon* material recently procured from the Wasatch formation in Wyoming with that contained in other collections.
227. Fossil Ostracoda from southeast Wyoming and from Utah, T. Rupert Jones.—Geol. Mag., Dec. III, vol. x, pp. 383-391.
Describes some species from the Cretaceous of Wyoming and Utah.
228. Ancestors of the tapir from the lower Miocene of Dakota, J. L. Wortman and C. Earle.—Am. Mus. Nat. Hist., Bull., vol. v, pp. 159-180; (abstract), Am. Naturalist, Vol. XXVIII, p. 416 ($\frac{1}{2}$ p.), 1894.
Discusses the origin of the tapir in America, describes species obtained from the Miocene of South Dakota, and reviews the evidence of the relationship between American and European species of *Protapirus*.

229. The Titanotherium beds, John B. Hatcher.—Am. Naturalist, vol. xxvii, pp. 204-221.

Describes the geographic distribution of these beds, their lithologic composition and stratigraphic position, and discusses the character of the fauna by which they have been divided into lower, middle, and upper beds.

230. Notes on some little known American fossil tortoises, G. Baur.—Philadelphia Acad. Sci., Proc., 1893, pt. iii, pp. 411-430.

Reviews previous descriptions and classifications of some Cretaceous species of Wyoming and Colorado.

231. A dissected volcano of Crandall Basin, Wyoming, Joseph P. Iddings.—Jour. Geology, vol. i, pp. 606-611; (abstract), Am. Naturalist, vol. xxviii, p. 603 ($\frac{1}{3}$ p.), 1894.

Describes the general geologic structure of the region and the petrographic character of the volcanic rocks, with remarks on the degrees of crystallization shown in rocks which occurred at approximately the same depth beneath the volcano, viz., 10,000 feet or more.

232. The formation of the hot springs deposits, Walter H. Weed.—Internat. Cong. Geol., Compte Rendu., 5th sess., pp. 360-363.

Describes the formation of hot spring deposits in the Yellowstone National Park.

233. Yellowstone Park, Arnold Hague.—Internat. Cong. Geol., Compte Rendu, 5th sess., pp. 336-359.

Describes the geologic history of the Park and the physical and geologic features of the route through the Park traversed by the excursion.

234. The Yellowstone region and its geysers, Henry M. Cadell.—Scottish Geog. Mag., vol. viii, pp. 233-248.

Describes the topographic and geologic features of the region and the thermal springs and their deposits. Illustrated by a colored geologic sketch map and reproductions of photographs of the Mammoth Hot Springs and the Giant Geyser.

1894.

235. A geological reconnaissance in northwest Wyoming, George H. Eldridge.—U. S. Geol. Survey, Bull. 119, 72 pp., pls. i-iv, fig. 1.

Describes the topography of the Bighorn Mountain region, the general character of the Archean, Cambrian, Silurian, Carboniferous, Trias, Jura, Cretaceous, and Tertiary formations, the structure of the mountain ranges and the occurrence of coal, petroleum, building materials, and gold.

236. Restoration of *Campitosaurus*, Othniel C. Marsh.—Am. Jour. Sci., 3d ser., vol. xlvii, Appendix, pp. 245-246, pl. vi; Geol. Mag., Dec. IV, vol. i, pp. 193-195, pl. vi; Sci. Am. Suppl., vol. xxxvii, pp. 15209-15210.

This restoration is based on a type specimen of *Campitosaurus dispar* from the *Atlantosaurus* beds of Wyoming.

237. Formation du tuf calcaire ou travertin et des dépôts siliceux par la végétation des sources d'eau chaude, Ed. Jardin.—Soc. Acad., de Brest, 2d ser., vol. xix, pp. 33-75.

Reviews the paper by W. H. Weed on the travertine deposits of the Yellowstone National Park and mentions the occurrence of hot spring waters in Virginia, Arkansas, and California.

1895.

238. Coals and coal measures of Wyoming, W. C. Knight.—U. S. Geol. Survey, Sixteenth Ann. Rept., pt. iv, pp. 208-215.

Gives notes on the occurrence of coal in the Cretaceous strata of Wyoming in a paper, by E. W. Parker, on the "Production of coal in 1894".

239. The Douglas Creek placers, Albany, Wyoming, E. P. Snow.—Eng. and Min. Jour., vol. lx, pp. 539-541, map.

Describes the occurrence of this placer in the Medicine Bow Range.

240. The Fourmile placer fields of Colorado and Wyoming, E. P. Snow.—Eng. and Min. Jour., vol. lx, pp. 102-104.

Describes the occurrence of the gold placers in Routt County, Colorado, and Carbon County, Wyoming.

241. The Hartville iron ore deposits in Wyoming, E. P. Snow.—Eng. and Min. Jour., vol. lx, pp. 320-321.

Describes the character and geologic relations of the ore body.

242. Precious stones, George F. Kunz.—U. S. Geol. Survey, Sixteenth Ann. Rept., pt. iv, pp. 595-605.

Notes on the occurrence of diamonds in Wisconsin and California, rubies in North Carolina, sapphires in Montana, beryl in Maine, quartz gems in Pennsylvania, North Carolina, California, Wyoming and Arizona, utahlite, opal and hyalite from Utah, and emeralds in the Carolinas.

243. The public lands and their water supply, Frederick Haynes Newell.—U. S. Geol. Survey, Sixteenth Ann. Rept., pt. ii, pp. 457-533, pls. xxxv-xxxix, figs. 48-57.

Describes the character of the public lands of the western states and their water supply.

244. The reptilia of the Baptonodon beds, Othniel C. Marsh.—
Am. Jour. Sci., 4th ser., vol. 1, pp. 405-406.

Describes the occurrence of species of Baptonodon in Utah, Oregon and Wyoming.

245. Absarokite-shoshonite-banakite series, Joseph P. Iddings.—
Jour. Geology, vol. iii, pp. 935-959.

Describes the petrographic characters and gives chemical analyses of absarokite, shoshonite, and banakite from the Yellowstone Park and of similar rocks in neighboring regions.

1896.

246. Catalogue and index to North American geology, 1732 to 1891, N. H. Darton.—U. S. Geol. Survey, Bull. 127, 1045 pp.

Contains an authors' list of titles of papers arranged chronologically under each author and a subject index.

247. Bibliography and index of North American geology, paleontology, petrology, and mineralogy for 1892 and 1893, F. B. Weeks.—U. S. Geol. Survey, Bull. 130, 210 pp.

Contains an author's list of titles of papers and a subject index.

248. Bibliography and index of North American geology, paleontology, petrology, and mineralogy for the year 1894, F. B. Weeks.—U. S. Geol. Survey, Bull. 135, 141 pp.

249. Bibliography and index of North American geology, paleontology, petrology, and mineralogy for the year 1895, F. B. Weeks.—U. S. Geol. Survey, Bull. 146, 130 pp.

250. The analysis of the Salt Creek petroleum, Wyoming, E. E. Slosson.—Wyoming Univ. School of Mines, pet. ser., Bull. 1, pp. 23-47.

Describes the chemical character and composition of the petroleum.

251. The geology and technology of the Salt Creek oil field, Wyoming, W. C. Knight.—Wyoming Univ., School of Mines, pet. ser., Bull. 1, 22 pp.

Describes character and occurrence of the oil in the Cretaceous strata.

252. The Salt Creek oil field, W. C. Knight.—Eng. and Min. Jour., vol. lxi, pp. 87-88.

Describes briefly the Cretaceous strata in which the oil occurs.

253. Silurian strata in the Bighorn Mountains, Wyoming, and the Black Hills, South Dakota, Charles E. Beecher.—Am. Geologist, vol. xviii, pp. 31-33.

- Discusses the occurrence of fossils of the Niagara and Trenton facies and remarks on the necessity of a knowledge of the complete faunas for purposes of correlation.
254. A new species of *Dinictis* from the White River Miocene of Wyoming, Elmer S. Riggs.—*Kansas Univ. Quart.*, vol. iv, pp. 237-241, fig. 1.
Describes and figures the skull of *Dinictis paucidens* and compares it with other species of *Dinictis*.
255. Species of *Hyracotherium* and allied perissodactyls from the Wasatch and Wind River beds of North America, J. L. Wortman.—*Am. Mus. Nat. Hist., Bull.*, vol. viii, pp. 81-110, pl. ii, figs. 1-18.
Describes the perissodactyls from the horizons named in Wyoming and New Mexico.
256. Some localities for Laramie mammals and horned dinosaurs, John B. Hatcher.—*Am. Naturalist*, vol. xxx, pp. 112-120, with map of a part of Wyoming.
Describes the localities in Wyoming where these fossils have been found, with remarks on the occurrence and fauna of the Laramie and Ceratops beds.
257. Yellowstone National Park folio, Arnold Hague.—*U. S. Geol. Survey, Atlas Yellowstone National Park folio* (no. 30) figs 1-11.
Describes the physiography and general geologic features and history of the region. Includes topographic and geologic maps.
258. Extrusive and intrusive igneous rocks as products of magmatic differentiation, Joseph P. Iddings.—*London Geol. Soc. Quart. Jour.*, vol. lii, pp. 606-617.
Describes the relations of the eruptive rocks of Electric Peak and Sepulchre Mountain to the whole series of eruptions occupying Tertiary time, and which spread out over large areas in Montana, Wyoming, and Idaho. Presents a map showing the extent of the volcanic area.
259. Igneous rocks, Yellowstone National Park, Joseph P. Iddings.—*U. S. Geol. Survey, Geol. Atlas, Yellowstone National Park folio* (no. 30).
Describes the character and distribution of the extrusive and intrusive rocks.
260. The age of the igneous rocks of the Yellowstone Park, Arnold Hague.—*Am. Jour. Sci.*, 4th ser., vol. i, pp. 445-457.
Reviews the geologic history of the Park, mentions the fossil plant and invertebrate remains found in the Tertiary strata, and discusses the bearing of the data on the age of the igneous rock and the character of the post-Laramie movement.

261. Sedimentary rocks, Yellowstone National Park, Walter H. Weed.—U. S. Geol. Survey, Geol. Atlas, Yellowstone National Park folio (no. 30).

Describes the character and distribution of the Algonkian, Cambrian, Silurian, Devonian, Carboniferous, Juratrias, Cretaceous, Tertiary, and Pleistocene formations and the hot spring deposits.

262. The Tertiary flora of the Yellowstone National Park, Frank Hall Knowlton.—Am. Jour. Sci., 4th ser., vol. ii, pp. 51-58.

Gives a brief account of the geology of the Park, names the fossil plants found in the Tertiary beds, and discusses the relations of the present and the Tertiary floras.

263. On the nature of igneous intrusions, Israel Cook Russell.—Jour. Geology, vol. iv, pp. 177-194.

Describes the different forms of igneous intrusions as shown by intruded sheets, laccolites, plutonic plugs, and great dome-shaped uplifts, and discusses their origin.

264. Igneous intrusions in the neighborhood of the Black Hills of Dakota, Israel Cook Russell.—Jour. Geology, vol. iv, pp. 23-43, pls. i-iii.

Describes the occurrence of igneous intrusions in sedimentary rocks, differing in form from either laccolites or volcanic rocks. Gives a detailed description of the several igneous masses.

1897.

265. Bibliography and index of North American geology, paleontology, petrology, and mineralogy for 1896, F. B. Weeks.—U. S. Geol. Survey, Bull. 149, 152 pp.

Contains a list of titles of papers arranged alphabetically by authors' names and a subject index.

266. Map of the Black Hills of South Dakota and Wyoming, with full description of mineral resources, etc., Samuel Scott.—40 pp., geologic map, Custer City, South Dakota.

Gives brief notes on the geologic formations and igneous rocks and the occurrence of minerals in the Black Hills. Presents a geologic map of the region.

267. The petroleum fields of Wyoming, W. C. Knight.—Mineral Industry for 1896, pp. 442-450.

Describes the geologic features of the region and the occurrence of the oil.

268. Analysis of Popo Agie, Lander, and Shoshone petroleum, E. E. Slosson.—Wyoming Univ., School of Mines, pet. ser., Bull. 2, pp. 21-34.

Describes the chemical character and composition of the oils.

269. The geology of the Popo Agie, Lander, and Shoshone oil fields, W. C. Knight.—Wyoming Univ., School of Mines, pet. ser., Bull. 2, 20 pp.
Describes the general geology of the region.
270. The Leucite Hills of Wyoming, James Furman Kemp.—Geol. Soc. America, Bull., vol. viii, pp. 169-182, pl. 14.
Describes the geology of the hills and the petrographic and chemical characters of the rocks.
271. Stratigraphy and paleontology of the Laramie and related formations in Wyoming, Timothy W. Stanton and Frank Hall Knowlton.—Geol. Soc. America, Bull., vol. viii, pp. 127-156; (review by A. Hollick), Torrey Bot. Club, Bull., vol. xxiv, p. 26 ($\frac{1}{2}$ p.).
Describes the stratigraphic and paleontologic features of the various beds.
272. The Stylinodonta, a suborder of Eocene edentates, Othniel C. Marsh.—Am. Jour. Sci., 4th ser., vol. iii, pp. 137-146, 9 figs.
Describes and figures *Stylinodon mirus* and discusses the origin of the edentates.
273. Some geologic causes of the scenery of the Yellowstone National Park, Alja Robinson Crook.—Am. Geologist, vol. xx, pp. 159-167.
Describes the general physiographic features and geologic history of the Park.
274. Igneous rocks of the Leucite Hills and Pilot Butte, Whitman Cross.—(abstract), Science, new ser., vol. v, p. 361.
Describes the occurrence and petrographic and chemical characters of wyomingite, orendite, and madupite. Discusses the classification and nomenclature, and describes the inclusions in the Leucite Hills rocks.

1898.

275. Bibliography and index of North American geology, paleontology, petrology, and mineralogy for 1897, F. B. Weeks.—U. S. Geol. Survey, Bull. 156, 130 pp.
Contains a list of titles of papers arranged alphabetically by authors' names and a subject index.
276. The building stones and clays of Wyoming, W. C. Knight.—Eng. and Min. Jour., vol. lxvi, pp. 546-547 ($\frac{1}{2}$ p.).
Includes brief notes on their occurrence.

277. The Wyoming copper region, J. C. Kennedy.—Eng. and Min. Jour., vol. lxvi, pp. 640-641, 1 fig.
Describes the general geology of the locality in southern Wyoming and the occurrence of the copper.
278. The Wyoming oil fields, Arthur Lakes.—Mines and Minerals, vol. xix, p. 80, 1 fig.
Describes the occurrence of oil in the Salt Creek field.
279. Petroleum, F. H. Oliphant.—U. S. Geol. Survey.—Nineteenth Ann. Rept., Pt. VI (continued), pp. 1-166.
Includes statistics of production, notes on occurrence in Indiana, by W. S. Blatchley, and notes on occurrence in California, Texas, and Wyoming, by W. C. Knight.
280. The natural soda deposits of Wyoming, W. C. Knight.—Mineral Industry for 1897, pp. 612-616, 2 figs.
Describes the occurrence and character of the soda deposits.
281. New species of Ceratopsia, Othniel C. Marsh.—Am. Jour. Sci., 4th ser., vol. vi, p. 92.
Describes two new species from the Ceratops beds.
282. A complete skeleton of *Coryphodon radians*, Henry F. Osborn.—Am. Mus. Nat. Hist., Bull., vol. x, pp. 81-91, pl. x, 2 figs.; Science, new ser., vol. vii, pp. 585-588, 1 fig.
Notes upon the location of the animal. Describes new material from the Wasatch and Wind River beds, and reviews the literature of the genus.
283. Some new Jurassic vertebrates from Wyoming, (first paper), W. C. Knight.—Am. Jour. Sci., 4th ser., vol. v, p. 186, 2 figs.
Describes the two new species of Ceratodus.
284. Some new Jurassic vertebrates from Wyoming, second paper, W. C. Knight.—Am. Jour. Sci., 4th ser., vol. v, pp. 378-381, 3 figs.
Describes a new genus and species, *Megalneusaurus rex*. Suggests the name Como group for the beds in which the fossil occurs.
285. The sacrum of *Morosaurus*, S. W. Williston.—Kansas Univ. Quart., vol. vii, pp. 173-175, 2 figs.
Describes material from Converse County, Wyoming.
286. The standing fossil forests of Yellowstone Park, Frank Hall Knowlton.—Plant World, vol. i, pp. 53-55, pl. 1.
Describes the general features of the fossil forests.

287. Some conditions affecting geyser eruptions, Thomas Augustus Jagger, jr.—Am. Jour. Sci., 4th ser., vol. v, pp. 323-333, 1 fig.; (abstract), Nature, vol. lviii, pp. 261-263.

Describes geyser phenomena of the Yellowstone National Park and the results of certain experiments. Discusses their bearing on the question of the cause of the various phases of geyser activity.

1899.

288. Bibliography and index of North American geology, paleontology, petrology, and mineralogy for 1898, F. B. Weeks.—U. S. Geol. Survey, Bull. 162, 163 pp.

Contains a list of titles of papers arranged alphabetically by authors' names and a subject index.

289. Oil fields of Crook and Uinta counties, W. C. Knight and E. E. Slosson.—Wyoming Univ., School of Mines, pet. ser., Bull. 3, 31 pp., maps.

290. Absaroka folio, Wyoming, Arnold Hague.—U. S. Geol. Survey, Geol. Atlas, Absaroka folio (no. 52).

Describes the topographic features, the character and occurrence of the Archean, Cambrian, Silurian, Devonian, Carboniferous, Cretaceous, and volcanic rocks of the Crandall and Ishawooa quadrangles. Includes topographic and geologic maps and columnar sections.

291. A reconnaissance in Jackson Basin, F. B. Weeks.—(abstract), Science, new ser., vol. ix, p. 454 ($\frac{1}{3}$ p.).

292. The fossil fields expedition to Wyoming, Charles Schuchert.—Science, new ser., vol. x, pp. 725-728.

Gives an account of the expedition and the results obtained.

293. Notes on the Lower Cretaceous plants from the Hay Creek coal field, William Morris Fontaine.—U. S. Geol. Survey, Nineteenth Ann. Rept., Pt. II, pp. 645-702, pls. clx-clxix.

Describes the section of the coal beds and the fossils collected.

294. Early Tertiary volcanoes of the Absaroka Range, Arnold Hague.—Washington Geol. Soc., Presidential Address, pp. 25, pls. i-iii; Science, new ser., vol. ix, pp. 425-443.

Describes the character and occurrence of the volcanics.

295. The igneous rocks of the Absaroka Range and Two Ocean Plateau and of outlying portions of the Yellowstone National Park, Joseph P. Iddings.—U. S. Geol. Survey, Mon. XXXII, Pt. II, pp. 269-325, pl. xxxv.

Describes the petrographic character of the breccias, flows, and dike rocks.

296. Absarokite-shoshonite-banakite series, Yellowstone National Park, Joseph P. Iddings.—U. S. Geol. Survey, Mon. XXXII, Pt. II, pp. 326-355, pls. xxxvi-xxxviii.
Describes the petrographic and chemical characters.
297. Recent basalts, Yellowstone National Park, Joseph P. Iddings.—U. S. Geol. Survey, Mon. XXXII, Pt. II, pp. 433-440, pls. lvii-lix.
Describes their distribution and petrographic characters.
298. Cambrian fossils from the Yellowstone National Park, Charles D. Walcott.—U. S. Geol. Survey, Mon. XXXII, Pt. II, pp. 440-478, pls. lx-lxv.
Gives a summary of the faunas and descriptions of the Cambrian fossils collected.
299. The dissected volcano of Crandall Basin, Joseph P. Iddings.—U. S. Geol. Survey, Mon. XXXII, Pt. II, pp. 215-268, pls. xxvii-xxxiv.
Describes the general geology of the region, the occurrence and character of the breccias, the intrusive rocks, and the granular core and dikes. Includes chemical analyses.
300. Devonian and Carboniferous fossils from Yellowstone National Park, George H. Girty.—U. S. Geol. Survey, Mon. XXXII, Pt. II, pp. 479-599, pls. lxiv-lxxi.
Discusses the relations of the faunas and describes the fossils collected.
301. The igneous rocks of Electric Peak and Sepulchre Mountain, Yellowstone National Park, Joseph P. Iddings.—U. S. Geol. Survey, Mon. XXXII, Pt. II, pp. 89-148, pls. xiii-xxii, figs. 1-3.
Describes geologic features of region and character of the intrusive and volcanic rocks.
302. Fossil flora, Yellowstone National Park, Frank Hall Knowlton.—U. S. Geol. Survey, Mon. XXXII, Pt. II, pp. 651-882, pls. lxxvii-cxxi.
Describes the fossil flora collected in the region and their relations, and the character and occurrence of the fossil forests.
303. Descriptive geology of the Gallatin Mountains, Yellowstone National Park, Joseph P. Iddings and Walter H. Weed.—U. S. Geol. Survey, Mon. XXXII, Pt. II, pp. 1-59, pls. i-x.
Describes the character and occurrence of the Cambrian, Silurian, Devonian, Carboniferous, Juratrias, and Cretaceous strata and igneous rocks of the region.

304. The intrusive rocks of Gallatin Mountain, Bunsen Peak, and Mount Evarts, Yellowstone National Park, Joseph P. Iddings.—U. S. Geol. Survey, Mon. XXXII, Pt. II, pp. 60-88, pls. xi-xii.
Describes the petrographic and chemical characters of the rocks.
305. Descriptive geology of Huckleberry Mountain and Big Game Ridge, Yellowstone National Park, Arnold Hague.—U. S. Geol. Survey, Mon. XXXII, Pt. II, pp. 165-202, pls. xxiv-xxv.
Describes the general geographic and geologic features of the region.
306. Mesozoic fossils from Yellowstone National Park, Timothy W. Stanton.—U. S. Geol. Survey, Mon. XXXII, Pt. II, pp. 600-650, pls. lxxii-lxxvi.
Describes the relations of the faunas of the several horizons and characters of the fossils collected.
307. The rhyolites in Yellowstone National Park, Joseph P. Iddings.—U. S. Geol. Survey, Mon. XXXII, Pt. II, pp. 356-432, pls. xxxix-lvii, fig. 4.
Describes the megascopic and microscopic characters of the rhyolites and their distribution in the Park.
308. Geology of the southern end of the Snowy Range, Yellowstone National Park, Walter H. Weed.—U. S. Geol. Survey, Mon. XXXII, Pt. II, pp. 203-214, pl. xxvi.
Describes the general physiographic and geologic features of the region.
309. Descriptive geology of the northern end of the Teton Range, Yellowstone National Park, Joseph P. Iddings.—U. S. Geol. Survey, Mon. XXXII, Pt. II, pp. 149-164, pl. xxiii.
Describes the structure and the character and occurrence of the Cambrian, Silurian, Devonian, Carboniferous, Juratrias, and Cretaceous rocks of the region.
310. The piracy of the Yellowstone, John Paul Goode.—Jour. Geology, vol. vii, pp. 261-271, 5 figs.
Describes the postglacial history and drainage of the upper Yellowstone Valley.
311. Notes on a set of rocks from Wyoming, collected by Prof. W. C. Knight, of the University of Wyoming, Benjamin F. Hill.—School of Mines Quart., vol. xx, pp. 357-364, 5 figs.
Describes the petrographic character of the rocks collected.

1900.

312. Bibliography and index of North American geology, paleontology, and mineralogy for the year 1899, F. B. Weeks.—U. S. Geol. Survey, Bull. 172, pp. 1-41.
Contains a list of titles of papers arranged alphabetically by authors' names and a subject index.
313. A preliminary report on the artesian basins of Wyoming, W. C. Knight.—Wyoming Univ. Expr. Sta., Bull. 45, pp. 1-251, pls. i-xiv, sections i-xv, geologic map.
314. The Laramie cement plaster, E. E. Slosson and R. B. Moudy.—Wyoming Univ., Agr. Coll., Tenth Ann. Rept., 18 pp., 1 pl.
Describes the occurrence of gypsum beds and the composition and manufacture of cement plaster.
315. Glacial sculpture of the Bighorn Mountains, Francois E. Matthes.—U. S. Geol. Survey, Twenty-first Ann. Rept., pt. ii, pp. 167-190, pl. xxiii, figs. 1-4; (abstract by F. E. Matthes), Science, new ser., vol. xi, p. 507, 1900.
Describes the glacial phenomena of the region and discusses their origin.
316. Jurassic rocks of southeastern Wyoming, W. C. Knight.—Geol. Soc. America, Bull., vol. xi, pp. 377-388, pl. 23; (abstract), Science, new ser., vol. xi, pp. 142-143 ($\frac{1}{2}$ p.).
Refers to previous investigation in this region, describes the character and distribution of the Jurassic strata. Includes sections of important localities and lists of fossils characterizing the Como and Shirley stages.
317. Description of a new species of *Araucarioxylon* from the cycad beds of the Freezeout Hills, Carbon County, Frank Hall Knowlton.—U. S. Geol. Survey, Twentieth Ann. Rept., pt. ii, pp. 418-419.
Describes *Araucarioxylon ? obscurum* Knowlton, n. sp.
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- Describes the collections and the strata from which they were obtained and includes description of new genera and species.
320. The vertebral formula in *Diplodocus* (Marsh), W. J. Holland.—*Science*, new ser., vol. xi, pp. 816-818.
Describes material found in the fossil beds of Wyoming.
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Describes *Gallinuloides wyomingensis*, n. gen. et sp., and *Lepidosteus atrox* Leidy, and discusses their relationships.
323. The Wyoming fossil fields expedition of July, 1889, W. C. Knight.—*Nat. Geog. Mag.*, vol. xi, pp. 449-465, 8 pls.
Describes character of expedition and general features of region traversed.
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Describes the character and occurrence of Carboniferous and Cretaceous strata, and the genera and species collected in the region.
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Discusses the flora from this formation from Utah, Wyoming

and Montana; describes many genera and species. Includes notes by T. W. Stanton on certain plant-bearing strata along the Missouri River.

330. Floating sands and stones, Edmund Otis Hovey.—*Science*, new ser., vol. xi, pp. 912-913.

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331. Geology and water resources of the southern half of the Black Hills, N. H. Darton.—U. S. Geol. Survey, Twenty-first Ann. Rept., pt. 4, pp. 497-599, 55 pls., 28 figs.; (abstract), *Jour. Geology*, vol. 9, pp. 732-734.

Describes the character and occurrence of the Cambrian, Carboniferous, Juratrias, Cretaceous, Tertiary, and Pleistocene strata, the water and mineral resources and the soils of the region.

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333. The Sweetwater mining district, Fremont County, W. C. Knight.—Wyoming Univ., School of Mines, 35 pp., 1 map.

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335. Geology of the oil fields, W. C. Knight.—Wyoming Univ., School of Mines, pet. ser., Bull. 4, pp. 1-13.

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336. The petroleum fields of Wyoming, W. C. Knight.—Eng. and Min. Jour., vol. 72, pp. 358-359, 628-630, 4 figs., map.

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340. Jurassic stratigraphy in southeastern Wyoming, Frederic B. Loomis.—Am. Mus. Nat. Hist., Bull., vol. 14, pp. 189-197, 2 pls.
Describes the geologic structure of the region and the character of the Jurassic and Cretaceous sediment of the region.
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343. Index to North American geology, paleontology, petrology, and mineralogy for the years 1892 to 1900, inclusive, F. B. Weeks.—U. S. Geol. Survey, Bull. 189, 337 pp.
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345. Geology of the Patrick and Goshen Hole quadrangles in eastern Wyoming and western Nebraska, George I. Adams.—U. S. Geol. Survey, Water Supply and Irrigation Paper no. 70, 50 pp., 11 pls., 4 figs.
Describes the geologic structure and physiographic features.
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Describes and figures material from South Dakota and Wyoming. Notes their stratigraphic range.
347. The Rocky Mountain coal fields, L. S. Storrs.—U. S. Geol. Survey, Twenty-second Ann. Rept., pt. 3, pp. 415-471, 2 pls., 1 fig.

- Describes location, extent, geologic relations and development of coal areas in the Rocky Mountain region, the occurrence, thickness, and extent of coal beds, and the character, composition, and utilization of the coal and lignite.
348. Prospecting for oil in Wyoming, Arthur Lakes.—Mines and Minerals, vol. 23, pp. 99-100, 2 figs.
A description of the prospects in the country around Medicine Butte, and Red Mountain, Uinta County. Describes the Cretaceous and Tertiary strata of the region.
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350. The petroleum fields of Wyoming, III. The fields of Uinta County, W. C. Knight.—Eng. and Min. Jour., vol. 73, pp. 720-722, 4 figs.
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352. A new occurrence of sperrylite, H. L. Wells and S. L. Penfield.—Am. Jour. Sci., 4th ser., vol. 13, pp. 95-96.
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353. Die Lagerstaetten titanhaltigen Eisenerzes im Laramie Range, Wyoming, Ver. Staaten, James Furman Kemp.—Zeitschr. F. prak. Geol., Jahrg. 13, pp. 71-80, 7 figs.
Describes the occurrence, character, and geologic relations of titaniferous magnetite deposits in Wyoming.
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Discusses age of Laramie deposits of Converse County, Wyoming, and gives notes on the fossils found in them.
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357. The Laramie Plains Red Beds and their age, W. C. Knight.—*Jour. Geology*, vol. 10, pp. 412-422.

Reviews the literature of the subject, gives a detailed section in Red Mountain, and discusses the age of the Red Beds and their associated strata.

358. Notes on the Triassic and Jurassic strata of the Black Hills of South Dakota and Wyoming, Edmund Otis Hovey; (abstract), *New York Acad. Sci., Annals*, vol. 14, p. 152.

359. Description of a new species of *Baena* (*B. Hatcheri* from the Laramie beds of Wyoming), Oliver Perry Hay.—*Carnegie Mus., Annals*, vol. 1, no. 2, pp. 325-326, pl. xv.

360. Discovery of teeth in *Baptanodon*, an Ichthyosaurian from the Jurassic of Wyoming, Charles W. Gilmore.—*Science*, new ser., vol. 16, pp. 913-914.

361. Structure of the fore limb and manus of *Brontosaurus*, John B. Hatcher.—*Carnegie Mus., Annals*, vol. 1, no. 3, pp. 356-376, 14 figs., 2 pls., xix-xx.

362. The great Jurassic dinosaur, L. P. Gratacap.—*Sci. Am.*, vol. 86, p. 5, 3 figs.

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Describes briefly the Cretaceous strata of the region and gives chemical analyses of the coal.
368. Mineral resources of the Encampment region, Arthur C. Spencer.—U. S. Geol. Survey, Bull. 213, pp. 158-162.
Gives an account of the general geology of this region and the character and occurrence of the copper ores.
369. The geologic features of the gold production of North America, Waldemar Lindgren.—Am. Inst. Min. Eng., Trans., vol. 33, pp. 790-845.
Discusses the occurrence and geologic relations of gold-bearing veins and deposits and production of gold in general and in the several gold-producing states, Alaska, Canada, and Mexico.
370. South Pass gold district, Fremont County, Henry C. Beeler.—Wyoming, Geologist's Office, 12 pp.
Includes a brief account of the geology of the region.
371. The Bonanza, Cottonwood, and Douglas oil fields, W. C. Knight and E. E. Slosson.—Wyoming Univ., School of Mines, pet. ser., Bull. 6, 30 pp.
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372. Preliminary note upon the rare metals in the ore from the Rambler mine, Wyoming, Thomas Thornton Read.—Am. Jour. Sci., 4th ser., vol. 16, p. 268.
373. Platinum in copper ores in Wyoming, Samuel F. Emmons.—U. S. Geol. Survey, Bull. 213, pp. 94-97.
Gives a brief account of the topography and geology of the Medicine Bow Range in Wyoming and the occurrence of platinum in the copper ores of the New Rambler mine.
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375. Leucite Hills of Wyoming, J. F. Kemp and W. C. Knight.—Geol. Soc. America, Bull., vol. 14, pp. 305-336, 10 pls.; Columbia Univ., Contr. from Geol. Dept., vol. 11, no. 94.
Reviews previous work, describes the geographic situation and general character of the region, the general geology, and in detail the twenty-two leucite hills with special reference to physiographic features and petrographic character.
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Describes distribution of glaciers in the region, and character and occurrence and age of the glacial deposits.

377. Age of the Lance Creek (Ceratops) beds of Converse County, Wyoming, John B. Hatcher.—Am. Geologist, vol. 31, pp. 369-375.
378. Discovery of the remains of Astrodon (Pleurocoelus) in the Atlantosaurus beds of Wyoming, John B. Hatcher.—Carnegie Mus., Annals, vol. 2, pp. 9-14, 6 figs.

Includes with the description a discussion of the synonymy and the age of the beds in which it occurs.

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381. Catalogue and index of the publications of Hayden, King, Powell, and Wheeler surveys, Lawrence F. Schmeckebier.—U. S. Geol. Survey, Bull. 222, 208 pp.
- Geological and geographical survey of the Territories, Geological exploration of the Fortieth Parallel, Geological and geographical surveys of the Rocky Mountain region, Geographical and geological surveys west of the One Hundredth Meridian.
382. Newcastle folio, Wyoming-South Dakota, N. H. Darton.—U. S. Geol. Survey, Geol. Atlas, Newcastle folio (no. 107).
Describes physiographic features, the geologic history and structure, the occurrence, character, and stratigraphic relations of Carboniferous, Triassic, Jurassic, and Cretaceous strata and Quaternary deposits, and the economic resources, artesian water, coal, petroleum, gypsum, etc.
383. Alkali deposits of Wyoming, Thomas Thornton Read.—Am. Geologist, vol. 34, pp. 164-169.
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384. Coal of the Bighorn Basin, in northwest Wyoming, Cassius A. Fisher.—U. S. Geol. Survey, Bull. 225, pp. 345-362.
Describes the geologic structure of the field, the character and occurrence of the coals and the mining operations.
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386. Grand Encampment copper district, Arthur Lakes.—Mines and Minerals, vol. 25, pp. 200-201, 2 figs.

Some notes on the geology, and a description of some of the development work.

387. Copper mining in Encampment, Wyoming, and Pearl, Colorado, districts, Thomas Thornton Read.—Mg. Rep., vol. 50, pp. 462-463.

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388. The North Laramie Peak copper district, in Converse, Albany, and Laramie counties, Henry C. Beeler.—Wyoming, Geologist's Office, 16 pp., July 1.

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390. Gypsum deposits of Wyoming, W. C. Knight.—U. S. Geol. Survey, Bull. 223, pp. 79-85, 1 pl., 2 figs.

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392. Comparison of the stratigraphy of the Black Hills, Bighorn Mountains, and Rocky Mountain Front Range, N. H. Darton.—Geol. Soc. America, Bull., vol. 15, pp. 379-448, 14 pls.

Describes in detail the occurrence, character, etc., of geologic formations of Cambrian, Ordovician, Carboniferous, Triassic, Jurassic, and Cretaceous age, and discusses their relations and correlations.

393. An armadillo from the middle Eocene (Bridger) of North America, Henry F. Osborn.—Am. Mus. Nat. Hist., Bull., vol. 20, pp. 163-165.

394. The Atlantosaur and Titanotherium beds of Wyoming, Frederick B. Peck.—Wyoming Hist. and Geol. Soc., Proc. and Coll., vol. 8, pp. 25-41, 5 pls.
Describes a geologic excursion in this region. Includes observations on the geology and paleontology of Jurassic and Cretaceous strata.
395. The dinosaur Trachodon annexens, Frederic A. Lucas.—Smithsonian Misc. Coll. vol. 45, (Quart. Issue, vol. 1, pts. 3 and 4), pp. 317-320, 2 pls., 4 figs.
Describes the occurrence and characters of fossil remains and restorations.
396. Notice of some new reptiles from the upper Trias of Wyoming, W. C. Williston.—Jour. Geology, vol. 12, pp. 688-697, 6 figs.

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399. Geology and underground water resources of the central Great Plains, N. H. Darton.—U. S. Geol. Survey, Prof. Paper no. 32, 433 pp., 72 pls., 18 figs.
Describes the occurrence, character, and relations of Archean, Algongian, Cambrian, Ordovician, Carboniferous, Triassic, Jurassic, Cretaceous strata and Tertiary deposits, the geologic history of the central Great Plains region, and their underground waters, and other economic resources of the area.
400. Sundance folio, Wyoming-South Dakota, N. H. Darton.—U. S. Geol. Survey, Geol. Atlas, Sundance folio (no. 127).
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401. Geology and mineral resources of Wyoming, Henry C. Beeler.—Am. Min. Cong., Seventh Ann. Sess., Rept. of Proc., pp. 113-118.

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402. The bentonite deposits of Wyoming, Cassius A. Fisher.—U. S. Geol. Survey, Bull. 260, pp. 559-563, 1 fig.
Describes the physical properties, occurrence, and geologic relations of bentonite, a variety of clay.
403. Cement materials and industries of the United States, Edwin C. Eckel.—U. S. Geol. Survey, Bull. 243, 395 pp., 15 pls., 1 fig.
Describes the character and general occurrence of cement materials and their preparation, and in detail the occurrence, geologic relations, and character of limestones, shales and marls in the various States.
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Describes the occurrence and character of certain strata which have been modified by the burning of underlying lignite seams.
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415. Hyopsodidae of the Wasatch and Wind River basins, Frederick B. Loomis.—Am. Jour. Sci., 4th ser., vol. 19, pp. 416-424, 8 figs.
416. Status of Mesozoic floras of the United States (second paper), Lester F. Ward.—U. S. Geol. Survey, Mon., vol. 48, pt. 1, text, 616 pp.; pt. 2, plates, 119 pls.
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419. The fossil turtles of the Bridger Basin, Oliver Perry Hay.—Am. Geologist, vol. 35, pp. 327-342, 1 fig.
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Describes the physiographic features, the occurrence, character, and relations of pre-Cambrian igneous rocks, and of Cambrian, Ordovician, Carboniferous, Triassic (?), Jurassic, Cretaceous, Tertiary, and Quaternary formations, the geologic structure and history, and the economic geology.

425. Geology and water resources of Bighorn Basin, Cassius A. Fisher.—U. S. Geol. Survey, Prof. Paper 53, 72 pp., 16 pls., 1 fig.

Describes the topography and drainage, the occurrence, character and relations of pre-Cambrian, Cambrian, Ordovician, Carboniferous, Triassic, Jurassic, Cretaceous, and Tertiary strata and Quaternary deposits, the geologic structure and history, and the water and mineral resources.

426. Mineral resources of the Bighorn Basin, Cassius A. Fisher.—U. S. Geol. Survey, Bull. 285, pp. 311-315.

Describes the occurrence of coal, bentonite, gypsum, and other mineral deposits in this part of Wyoming.

427. Geology of the Bighorn Mountains, N. H. Darton.—U. S. Geol. Survey, Prof. Paper 51, 129 pp., 47 pls., 14 figs.

Describes the topographic features, the occurrence, character relations, and fauna of pre-Cambrian, Cambrian, Ordovician, Carboniferous, Triassic, Jurassic, Cretaceous, Tertiary, and Quaternary formations, the glaciation, the geologic structure and history, and the economic resources.

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429. Description of Cloud Peak and Fort McKinney quadrangles, N. H. Darton.—U. S. Geol. Survey, Geol. Atlas,

Cloud Peak-Fort McKinney folio (no. 142), 16 pp., 6 figs., 7 maps, 1 columnar section sheet, 2 illus. sheets.

Describes the physiographic features, the occurrence, character, and relation of pre-Cambrian igneous rocks, and of Cambrian, Ordovician, Carboniferous, Triassic (?), Jurassic, Cretaceous, Tertiary, and Quaternary formations, the geologic structure and history, and the economic geology.

430. Geology of the Owl Creek Mountains, N. H. Darton.—59th Cong., 1st sess., S. Doc. 219, 1906, 48 pp., 19 pls., 1 fig.

Describes the topographic features, the character, occurrence, and relation of pre-Cambrian, Cambrian, Ordovician, Carboniferous, Triassic, Jurassic, Cretaceous, and Tertiary rocks, the geologic structure and history, and the mineral and water resources of the area.

Also notes on resources of adjoining region in the ceded portion of the Shoshone Indian Reservation.

431. Bentonite of the Laramie Basin, Claude E. Siebenthal.—U. S. Geol. Survey, Bull. 285, pp. 445-447.

Describes the physical characters, composition and uses of the clay and the geologic occurrences and the distribution of the deposits.

432. Les basins lignitifères et houillers des Montagnes Rocheuses, Etienne A. Ritter.—Annales des Mines, 10e ser., t. 10, livr. 7, pp. 5-84.

An account of the coal beds of the Rocky Mountains.

433. Coal and oil in southern Uinta County, Arthur C. Veatch.—U. S. Geol. Survey, Bull. 285, pp. 331-353, 3 pls. (maps and sections).

Describes the stratigraphy and structure of the area and the occurrence, character, and geologic relations of coal beds and petroleum.

434. The copper mines of the United States in 1905, Walter H. Weed.—U. S. Geol. Survey, Bull. 285, pp. 93-124, 2 figs.

Describes the general condition of the copper industry in the United States, and the geology, occurrence, and other features of the copper ores of the several states.

435. Gypsum deposits of the Laramie district, Claude E. Siebenthal.—U. S. Geol. Survey, Bull. 285, pp. 404-405.

Describes the occurrence and character of the deposits of gypsum rock and gypsrite.

436. Iron ores of the northwest United States and British Columbia, Charles Kenneth Leith.—U. S. Geol. Survey, Bull. 285, pp. 194-200.

Gives a summarized account of the iron ore deposits of Wyoming, Washington, British Columbia, Colorado, California, and Utah.

437. Petroleum and its products, Boerton Redwood.—
Gives an incomplete analysis of the Shannon oil.
438. Post-Pleistocene drainage modifications in the Black Hills
and the Bighorn Mountains, George Rogers Mansfield.—
Harvard College, Mus. Comp. Zool., Bull., vol. 49, (Geol.
Ser., vol. 8, no. 3), pp. 59-87, 4 pls. (maps), 9 figs.
439. Glacial geology of the Bald Mountain and Dayton quad-
rangles, Rollin D. Salisbury.—U. S. Geol. Survey, Geol.
Atlas, Bald Mountain-Dayton folio (no. 141), pp. 9-12.
440. Glacial geology of the Bighorn Mountains, Rollin D. Salis-
bury.—U. S. Geol. Survey, Prof. Paper 51, pp. 71-90,
11 pls., 9 figs.
441. Glacial geology of Cloud Peak and Fort McKinney quad-
rangles, Rollin D. Salisbury.—U. S. Geol. Survey, Geol.
Atlas, Cloud Peak-Fort McKinney folio (no. 142) pp. 9-12.
442. The Miocene beds of western Nebraska and eastern Wyoming
and their vertebrate faunae, O. A. Peterson.—Carnegie
Mus. Annals, vol. 4, no. 1, pp. 21-72, 11 pls., 20 figs.
Describes the occurrence and relations of the Miocene formations
in western Nebraska and eastern Wyoming and gives lists of the
vertebrate fossils of each and the descriptions of the new forms.
443. Volcanic ash in the Bridger beds of Wyoming, William J.
Sinclair.—Am. Mus. Nat. Hist., Bull., vol. 22, pp. 273-
280, 4 pls.
Describes the general features of the geology, the lithologic and
stratigraphic classification of the Bridger group, and the mode of
accumulation of the Bridger beds.
444. Notes on the osteology of Baptanodon, Charles W. Gilmore.
—Carnegie Mus. Mem., vol. 2, pp. 325-342, 3 pls., 13
figs.
With a description of a new species.
445. American amphicoelian crocodiles, S. W. Williston.—Jour.
Geology, vol. 14, no. 1, pp. 1-17, 12 figs.
Reviews literature relating to American amphicoelian crocodiles,
discusses their characters and relationships and describes *Coelosuchus*
reedii, new genus and species.
446. Age and type localities of the supposed Jurassic fossils col-
lected north of Fort Bridger, Wyoming, by Fremont in
1843, Arthur C. Veatch.—Am. Jour. Sci., 4th ser., vol. 21,
pp. 457-460.

447. Fish remains in Ordovician rocks in Bighorn Mountains, Wyoming, with a résumé of Ordovician geology of the Northwest, N. H. Darton.—Geol. Soc. America, Bull., vol. 17, pp. 541-566, 7 pls., 6 figs.

Describes the general geology of the Bighorn uplift and more particularly the occurrence, character, relations, and faunal content of the Ordovician deposits of Wyoming, Montana, and Colorado.

448. The osteology of *Sinopa*, a credont mammal of the middle Eocene, William Diller Matthew.—U. S. Nat. Mus., Proc., vol. 30, pp. 203-233, 1 pl., 20 figs.

449. A fossil bird from the Wasatch, Frederic B. Loomis.—Am. Jour. Sci., 4th ser., vol. 22, pp. 481-482, 3 figs., December.

450. Hot Springs at Thermopolis, N. H. Darton.—Jour. Geology, vol. 14, no. 3, pp. 194-200, 4 figs.

Describes the geologic structure and hot springs deposits at this place, and the character and source of the water and the origin of its heat.

1907.

451. Description of the Devil's Tower quadrangle, N. H. Darton and C. C. O'Hara.—U. S. Geol. Survey, Geol. Atlas, Devil's Tower folio (no. 150), 9 pp., 3 maps, columnar section, structure sheets.

Describes the geography, the occurrence, character, and relations of Triassic, Jurassic, Cretaceous, and Tertiary strata, and igneous rocks. the geologic structure and history, the mineral resources and water supply.

452. Geology of a portion of southwestern Wyoming, Arthur C. Veatch.—U. S. Geol. Survey, Prof. Paper 56, 178 pp., figs., pls., maps, bibliography.

453. Mineral resources of the State of Wyoming.—141 pp. (Mineral Resources, pp. 57-88), 7 pls., Wyoming.

A book of reliable information published by authority of the Ninth Legislature.

454. Cement plaster industry in Wyoming, L. W. Trumbull.—Min. World, vol. 26, p. 387, 4 figs., March 23.

455. Portland cement materials in eastern Wyoming, Sydney H. Ball.—U. S. Geol. Survey, Bull. 315, pp. 232-244, 2 figs.

456. Coal fields of east-central Carbon County, Arthur C. Veatch.—U. S. Geol. Survey, Bull. 316, pp. 244-260, 1 pl.

457. Lander coal field, E. G. Woodruff.—U. S. Geol. Survey, Bull. 316, pp. 242-243.
458. Coal of the Laramie Basin, Claude E. Siebenthal.—U. S. Geol. Survey, Bull. 316, pp. 261-263.
459. Coal fields in a portion of central Uinta County, Alfred R. Schultz.—U. S. Geol. Survey, Bull. 316, pp. 212-241, 1 pl.
460. The coal mining situation in northern Wyoming, Floyd W. Parsons.—Eng. and Min. Jour., vol. 84, pp. 930-935, 5 figs., Nov. 16.

Includes notes on the occurrence and character of the coals.

461. Lignite of northeastern Wyoming, Stewart Kennedy.—Mines and Minerals, vol. 27, no. 7, pp. 294-297, 6 figs., February.
462. Copper deposits of the Hartville Uplift, Sydney H. Ball.—U. S. Geol. Survey, Bull. 315, pp. 93-107.
463. Gold development in central Uinta County and other points along the Snake River, Alfred R. Schultz.—U. S. Geol. Survey, Bull. 315, pp. 71-88, 2 pls.
464. Graphite in the Haystack Hills, Sydney H. Ball.—U. S. Geol. Survey, Bull. 315, pp. 426-428.
465. Titaniferous iron ore in Iron Mountain, Wyoming, Sydney H. Ball.—U. S. Geol. Survey, Bull. 315, pp. 206-212.
466. The Hartville iron ore range, S. H. Ball.—U. S. Geol. Survey, Bull. 315, pp. 190-205, 1 fig.

Describes the stratigraphy and geologic structure of the area, and the occurrence and the origin of the iron ores.

467. The iron ores and system of mining at Sunrise, Wyoming, B. W. Vallat.—Colorado Sci. Soc., Proc., vol. 8, pp. 315-322, 6 pls.
468. Mica in the Hartville Uplift, Sydney H. Ball.—U. S. Geol. Survey, Bull. 315, pp. 423-425.
469. Phosphate deposits in western United States, F. B. Weeks and W. F. Ferrier.—U. S. Geol. Survey, Bull. 315, pp. 449-462, 1 pl. 3 figs.; (abstract), Science, new ser., vol. 25, pp. 620-621, April 19.
470. Phosphate rock in Utah, Wyoming and Idaho, Charles Colcock Jones.—Eng. and Min. Jour., vol. 83, pp. 953-955, 6 figs., May 18.

471. Sulphur mining and refining in Wyoming, L. W. Trumbull.—Mines and Minerals, vol. 27, no. 7, pp. 314-316, 5 figs., February.
Includes notes on the origin and the occurrence of the sulphur.
472. Bighorn Mountains, N. H. Darton.—Nat. Geog. Mag., vol. 18, no. 6, pp. 355-364, 8 figs., June.
473. Origin and definition of the geologic term "Laramie", Arthur C. Veatch.—Jour. Geology, vol. 15, no. 6, pp. 526-549; (abstract), Am. Jour. Sci., 4th ser., vol. 24, pp. 18-22, July.
474. Red Beds in the Laramie Mountain region, N. H. Darton.—(abstract), Geol. Soc. America, Bull., vol. 17, pp. 724-725.
475. A new species of *Baptanodon* from the Jurassic of Wyoming, Charles W. Gilmore.—Am. Jour. Sci., 4th ser., vol. 23, pp. 193-198, 2 figs., March.
476. The Ceratopsia, John B. Hatcher, Othniel C. Marsh, and Richard Swan Lull.—U. S. Geol. Survey, Mon., vol. 49, 300 pp., 15 pls., 125 figs.
477. The skull of *Paleorhinus*, a Wyoming phytosaur, James H. Lees.—Jour. Geology, vol. 15, no. 2, pp. 121-151, 8 figs.
478. Origin of the Wasatch deposits, Frederic B. Loomis.—Am. Jour. Sci., 4th ser., vol. 23, pp. 356-364, 3 figs., May.
From a study of the character of the fauna and the lithologic characters of the geologic section concludes that the Wasatch beds of Wyoming are of flood-plain origin. Describes two new species of vertebrates from these beds.
479. Wasatch and Wind River rodents, Frederic B. Loomis.—Am. Jour. Sci., 4th ser., vol. 23, pp. 123-130, 7 figs., February.
Characterizes several new species of *Paramys* and one new species of *Sciuravus*.

1908.

480. Progress in Wyoming Mines in 1907, Henry C. Beeler.—Wyoming, Geologist's Office, 46 pp., illus.
481. The Diamondville coal field, A. T. Shurick.—Eng. and Min. Jour., vol. 85, pp. 116-118, 1 fig., January.
Includes notes on local geology.
482. The coals of southern Wyoming, Floyd W. Parsons.—Eng. and Min. Jour., vol. 85, pp. 118-120, 2 figs., January 11.

483. The South Pass gold mining district, Henry C. Beeler.—Min. World, vol. 29, pp. 953-955, December 26.
484. Sunrise iron mine, B. W. Vallat.—Mines and Minerals, vol. 28, no. 9, pp. 439-440, 2 figs., April.
A description of the ores.
485. Method of mining ore at Sunrise, B. W. Vallat.—Eng. and Min. Jour., vol. 85, pp. 399-403, 7 figs., February 22:
Includes notes on occurrence and character of iron ore.
486. Gas fields of the Bighorn Basin, Chester W. Washburne.—U. S. Geol. Survey, Bull. 340, pp. 348-363, 1 pl., 1 fig.
Describes the stratigraphy of the field structure, and the occurrence of natural gas.
487. The LaBarge oil field, Lincoln County, Alfred R. Schultz.—U. S. Geol. Survey, Bull. 340, pp. 364-373, 1 pl.
Describes the stratigraphy and geologic structure of the field, and the occurrence, character, and origin of the oil.
488. Les gisements petrolieres de Wyoming, Soc. ind. min. St. Etienne, Compt. rend. mens., pp. 7-9. De la Condamine.
Notes on the oil deposits of Wyoming.
489. Phosphate deposits in western United States, F. B. Weeks.—U. S. Geol. Survey, Bull. 340, pp. 441-447.
490. Sulphur deposits at Cody, Elmer Grant Woodruff.—U. S. Geol. Survey, Bull. 340, pp. 451-456, 1 pl.
Describes the location and extent, the geologic relations, and the character and the genesis of the deposit.
491. Disruption of rock by lightning on one of the leucite hills in Wyoming, V. H. Barnett.—Jour. Geology, vol. 16, no. 6, pp. 568-571, 1 fig.
492. The fauna and stratigraphy of the Jefferson limestone in the northern Rocky Mountain region, E. M. Kindle.—Bulletins of Am. Paleontology, vol. 4, no. 20, 39 pp., 4 pls., June 5.
493. Paleozoic and Mesozoic of central Wyoming, N. H. Darton.—Geol. Soc. America, Bull. 19, pp. 403-470, 10 pls.
494. Pre-Cambrian rocks in southeastern Wyoming, Eliot Blackwelder.—Science, new ser., vol. 27, pp. 787-788, May 15.
495. Allosaurus, a carnivorous dinosaur, and its prey, William Diller Matthew.—Am. Mus. Jour., vol. 8, no. 1, pp. 3-5, 1 pl., January.
Describes the history of a skeleton and its mounting.

496. Untersuchungun fossiler Hoelzer aus dem Westen der Vereinigten Staaten von Nordamerika, Paul Platen.—Naturf. Gesellsch. Leipzig, Sitzungsb, Jg. 34, pp. 1-164, 3 pls.

Describes investigations upon fossil woods from the western states.

497. Description of Tertiary insects, T. D. A. Cockerell.—Am. Jour. Sci., 4th ser., vol. 25, pp. 51-52, 3 figs., January; pp. 227-232, 5 figs., March; pp. 309-312, 1 fig., April; vol. 26, pp. 69-75, 4 figs., July.

1909.

498. Bibliography of North American geology for 1906 and 1907, with subject index, F. B. Weeks and John M. Nickles.—U. S. Geol. Survey, Bull. 372, 317 pp., 1909.

499. Bibliography of North American geology for 1908, with subject index, John M. Nickles.—U. S. Geol. Survey, Bull. 409, 148 pp.

500. Geology and mineral resources of the Laramie Basin, N. H. Darton and Claude E. Siebenthal.—U. S. Geol. Survey, Bull. 364, 81 pp., 8 pls., 1 fig.

Describes the geography and general geology, the occurrence, character, and relations of Carboniferous, Triassic, Jurassic, Cretaceous, and Tertiary formations, the geologic structure, the mineral resources, including coal, gypsum, bentonite, and others, and the underground waters.

501. The Wyoming asbestos deposits and mills, Arthur Lakes.—Min. Sci., vol. 60, pp. 388-391, 1 fig., October 28.

502. Coal fields in the southwest side of the Bighorn Basin, Elmer Grant Woodruff.—U. S. Geol. Survey, Bull. 341, pp. 200-219, 1 pl. (map).

Describes the stratigraphy and structure of the field and the occurrence, character, and mining of the coals.

503. The Glenrock coal field, E. Wesley Shaw.—U. S. Geol. Survey, Bull. 341, pp. 151-154, 1 pl. (map), 1 fig.

Describes the topography and the stratigraphy of the field, and the occurrence, character, and mining of the coals.

504. The eastern part of the Great Divide coal field, E. Eggleston Smith.—U. S. Geol. Survey, Bull. 341, pp. 220-242, 1 pl. (map).

Describes the general features of the field and the stratigraphy and structure, occurrence and character of the coal beds, and the quality and composition of the coals.

505. The western part of the Little Snake River coal field, Max W Ball.—U. S. Geol. Survey, Bull. 341, pp. 243-255, 1 pl (map).
Describes the geography, stratigraphy and structure of the field and the physical properties and composition of the coals.
506. The northern part of the Rock Springs coal field, Sweetwater County, Alfred R. Schultz.—U. S. Geol. Survey, Bull. 341, pp. 256-282, 2 pls. (maps).
Describes the topographic features, stratigraphy, and geologic structure of the field, the quality and composition of the coals, and the mining developments.
507. Natural gas in Colorado and Wyoming, Arthur Lakes.—Min. Sci., vol. 60, p. 225, 1 fig., September 9.
508. The phosphate deposits of the United States, Frank B. Van Horn.—U. S. Geol. Survey, Bull. 394, pp. 157-171; Rept. Nat. Conservation Comm. (60th Cong., 2d sess., S. Doc. 676), vol. 3, pp. 558-570; (abstract), Min. and Sci. Press, vol. 99, pp. 88-90, 2 figs., July 17; Mineral Resources of U. S., 1908: Phosphate rock.
509. Sulphur deposits at Thermopolis, Wyoming, Elmer Grant Woodruff.—U. S. Geol. Survey, Bull. 380, pp. 373-380, 1 fig.
Describes the location, geologic relations and structure, and the occurrence and origin of the sulphur ore.
510. Geology and water resources of the northern portion of the Black Hills and adjoining portions in South Dakota and Wyoming, N. H. Darton.—U. S. Geol. Survey, Prof. Paper 65, 105 pp., 24 pls., 15 figs.
511. Cenozoic history of the Laramie region, Eliot Blackwelder.—Jour. Geology, vol. 17, no. 5, pp. 429-444, 7 figs.
512. The age and stratigraphic relations of the "Ceratops beds" of Wyoming and Montana, Timothy W. Stanton.—Washington Acad. Sci., Proc., vol. 11, no. 3, pp. 239-293, August 14.
Describes the distribution, relations, and faunal character of "Ceratops beds", and considers them to be of Cretaceous age, while the Fort Union formation, properly restricted, is of early Eocene age.
513. The stratigraphic relations and paleontology of the "Hell Creek beds", "Ceratops beds", and equivalents, and their reference to the Fort Union formation, Frank Hall Knowlton.—Washington Acad. Sci., Proc., vol. 11, no. 3, pp. 179-238.

Concludes that the beds named should be referred to the Fort Union formation and are Eocene in age.

514. Loup Fork beds of eastern Wyoming, Elmer S. Riggs.—(abstract), Science, new ser., vol. 29, p. 196, January 29.
515. The Washakie, a volcanic ash formation, W. J. Sinclair.—Am. Mus. Nat. Hist., Bull., vol. 26, pp. 25-27.
Describes the materials composing the Washakie formation of southern Wyoming and shows that they differ from those of the Bridger formation, and concludes that the two formations are not contemporaneous.
516. Faunal horizons of the Washakie formation of southern Wyoming, Walter Granger.—Am. Mus. Nat. Hist., Bull. vol. 26, pp. 13-23, 5 pls., 2 figs.
Gives an historical review of previous work on the Washakie formation and the views entertained as to its age, relations, and deposition, describes the topography and geology with sections, and indicates the faunal horizons.
517. On a skull of *Apternodus* and a skeleton of a new artiodactyl from the lower Oligocene of Wyoming, William Diller Matthew.—(abstract), Science, new ser., vol. 29, p. 196, January 29.
518. The Carnivora and Insectivora of the Bridger Basin, middle Eocene, W. D. Matthew.—Am. Mus. Nat. Hist., Mem., vol. 9, pt. 6, pp. 289-567, 11 pls., 118 figs.
519. Eocene fossils from Green River, T. D. A. Cockerell.—Am. Jour. Sci., 4th ser., vol. 28, pp. 447-448, 2 figs., November.
Describes a fruit *Firmianites aterrimus* new gen. and sp., and an insect *Syntomostylus? fortis* new sp.
520. The fossil fields of Wyoming along the Union Pacific Railway, Members of the Union Pacific Expedition.—Passenger Dept., U. P. R. R., 61 pp., illus., Omaha, Nebr.
Includes reports bearing on the geology and physiography and vertebrate paleontology of Wyoming, by W. H. Reed, J. A. Yates, J. E. Todd, A. R. Crook, H. L. T. Skinner, G. C. Broadhead, and George L. Collie.
521. The epidermis of an iguanodont, Henry F. Osborn.—Science, new ser., vol. 29, May 14.
Describes a specimen of *Trachodon annectens* from Converse County, Wyoming, preserving part of the epidermal covering..
522. The new American Jurassic crinoid, Frank Springer.—U. S. Nat. Mus., Proc., vol. 36, pp. 179-190, 1 pl.
523. Expedition to the Laramie beds of Converse County, Charles

H. Sternberg.—Kansas Acad. Sci., Trans., vol. 22, pp. 113-116.

Describes the beds and gives notes upon the fossils collected from them.

524. A new trachodon from the Laramie beds of Converse County, Charles H. Sternberg.—(abstract), Science, new ser., vol. 29, pp. 753-754, May 7.

525. A new rhynchocephalian reptile from the Jurassic of Wyoming, with notes on the fauna of "Quarry 9", Charles W. Gilmore.—U. S. Nat. Mus., Proc., vol. 37, pp. 35-42, 1 pt., 3 figs.

Describes *Opisthias rarus* n. gen. and n. sp. from Como Bluff, Albany County, and gives list of vertebrate fossils from the same locality and notes upon the same.

526. Die fossilen Waelder am Amethyst-Mount im Yellowstone National Park und die mikroskopische Untersuchung ihrer Hoelzer, Paul Platen.—Prometheus, Jahrg. 20, pp. 241-246, 6 figs., January 20.

Describes fossil wood from the Yellowstone National Park. Sections illustrating structure.

527. Radioactivity of the thermal waters of Yellowstone National Park, Herman Schlundt and Richard B. Moore.—U. S. Geol. Survey, Bull. 395, 35 pp., 4 pls., 7 figs.

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528. Bibliography of North American geology for 1909, with subject index, John M. Nickles.—U. S. Geol. Survey, Bull. 444, 174 pp.

529. Laramie and Sherman quadrangles, N. H. Darton and E. Blackwelder and C. E. Siebenthal.—U. S. Geol. Survey, Geol. Atlas, Laramie-Sherman folio (no. 173), Library ed., 17 pp., 8 pls. (maps and illus. sheets), 3 figs.; field ed., 128 pp., 8 folded maps, 8 pls., 3 figs.

Describes the geography, the occurrence, character and relations of the pre-Cambrian, Carboniferous, Triassic, Jurassic, Cretaceous, Tertiary, and Quaternary sediments, the structure and geologic history, the mineral resources and the underground waters.

530. Asbestos in Wyoming, Henry C. Beeler.—Eng. and Min. Jour., vol. 90, p. 955, 1 fig., November 12.

Describes the occurrence and character of asbestos near Casper, Natrona County.

531. The asbestos industry in central Wyoming, F. H. Barrow.—Eng. and Min. Jour., vol. 90, p. 559, 1 fig., September 17.
532. Coal fields of the Bighorn Basin, Wyoming, and of Bridger, Montana, Chester W. Washburne.—U. S. Geol. Survey, Bull. 341, pp. 165-169, 1 pl. (map).
Describes the general features of the fields, the stratigraphy of the coal beds, and the distribution, relations, and character of the coals.
533. The coal field in the southeastern part of the Bighorn Basin, Elmer Grant Woodruff.—U. S. Geol. Survey, Bull. 381, pp. 170-185, 1 pl. (map).
Describes the general features of the field, the stratigraphy and structure, and the occurrence, development, and character of the coal.
534. Buffalo coal field, Hoyt S. Gale and Carroll H. Wegemann.—U. S. Geol. Survey, Bull. 381, pp. 137-169, 3 pls. (maps and sections).
Describes the topography, stratigraphy, and rock structure, the occurrence and character of the coal beds, and the quality and physical properties of the coal.
535. Weathering of coal in the arid region of Green River Basin, Sweetwater County, Alfred R. Schultz.—U. S. Geol. Survey, Bull. 381, pp. 282-296; (abstract by A. R. Schultz), Science, new ser., vol. 31, pp. 759-760, May 13.
536. The eastern part of the Little Snake River coal field, Max W. Ball and Eugene Stebinger.—U. S. Geol. Survey, Bull. 381, pp. 186-213, 1 pl. (map).
Describes the general features of the area, the geologic structure and stratigraphy, the occurrence, character, and development of the coal fields, and the composition of the coal.
537. The Powder River coal field, adjacent to the Burlington Railroad, Ralph W. Stone and Charles T. Lupton.—U. S. Geol. Survey, Bull. 381, pp. 115-136, 1 pl. (map).
Describes the general features of the field, the general geology, the occurrence, character, and relations of the coal beds, and the properties and utilization of the coal.
538. The southern part of the Rock Springs coal field, Sweetwater County, Alfred R. Schultz.—U. S. Geol. Survey, Bull. 381, pp. 214-281, 2 pls. (maps).
Describes the topographic features, the geologic structure, the geologic history, the occurrence, character and relations of Cretaceous and Tertiary formations, the coal beds, the physical and chemical properties of the coal and the economic developments.

539. The Sheridan coal field, Joseph A. Taff.—U. S. Geol. Survey, Bull. 341, pp. 123-150, 1 pl. (map), 1 fig.
Describes briefly the general features of the field, and the stratigraphy of the coal-bearing rocks, and in more detail, the occurrence, character, and mining of the coals.
540. Preliminary report on the phosphate deposits in southeastern Idaho and adjacent parts of Wyoming and Utah, Hoyt S. Gale and Ralph W. Richards.—U. S. Geol. Survey, Bull. 430, pp. 457-535, 10 pls., 3 figs.
Describes the nature, origin, and composition of the phosphate rock, the general geology of the region, the character, occurrence, and relations of Carboniferous, Triassic, Jurassic, Cretaceous, and Tertiary formations, and the geologic structure, and gives a detailed account of the local geology, distribution, area, tonnage, etc., of phosphate deposits.
541. A review of the phosphate fields of Utah, Idaho, and Wyoming, with special reference to the thickness and quality of the deposits, W. H. Wagaman.—U. S. Dept. Agr., Bur. Soils, Bull. 69, 48 pp., 1 map.
542. Western phosphate mines, Morse S. Duffield.—Mines and Methods, vol. 2, no. 1, pp. 9-13, 6 figs., September.
Includes notes on the geology of the phosphate area in Utah, Wyoming, and Idaho.
543. The salt resources of the Wyoming border, with notes on the geology, Carpel L. Breger.—U. S. Geol. Survey, Bull. 430, pp. 555-569, 1 fig.
544. Deposits of sodium salts in Wyoming, Alfred R. Schultz.—U. S. Geol. Survey, Bull. 430, pp. 570-589, 2 figs.
Describes the origin, distribution, utilization, etc., of alkali deposits.
545. The physiography of the Bishop conglomerate, southwestern Wyoming, John Lyon Rich.—Jour. Geology, vol. 18, no. 7, pp. 601-632, 10 figs.
546. Fox Hills sandstone and Lance formation ("Ceratops beds") in South Dakota and eastern Wyoming, Timothy W. Stanton.—Am. Jour. Sci., 4th ser., vol. 30, pp. 172-188, September; (abstract by T. W. Stanton), Science, new ser., vol. 32, pp. 63-64, July 8.
Discusses the stratigraphic horizons and relations of these formations.
547. On the skull of *Apternodus* and the skeleton of a new artiodactyl, William Diller Matthew.—Am. Mus. Nat. Hist., Bull., vol. 28, pp. 33-42, 1 pl., 5 figs.

Describes a skull of *Apternodus* and an artiodactyl *Eotylopus reedii* n. gen. and n. sp. from Oligocene beds of Wyoming.

548. Two new araucarias from the western Cretaceous, George R. Wieland.—South Dakota Geol. Survey, Bull. 4, (Rept., State Geologist, 1908), pp. 77-81, 2 figs.

Describes *Araucaria hespera* n. sp., from the Cretaceous of South Dakota and *Araucaria hatcheri* n. sp. from the Laramie Cretaceous of Converse County, Wyoming.

549. Description of a collection of fossil fishes from the bituminous shales at Riacho Doce, State of Algoas, Brazil, David Starr Jordan.—Carnegie Mus. Annals, vol. 7, no. 1, pp. 23-44, 9 pls., November.

Includes figures of *Diplomystus dentatus* Cope from the Eocene (Green River shales) at Fossil Station, Wyoming.

550. *Leidyosuchus sternbergii*, a new species of crocodile from the Ceratops beds of Wyoming, Charles W. Gilmore.—U. S. Nat. Mus., Proc., vol. 38, pp. 485-502, 7 pls., 2 figs.

551. Description of fossil plants from the Mesozoic and Cenozoic of North America. I. 1. Two new fossil chain-ferns (*Woodwardia*), from Oregon and Wyoming. 2. A new name for *Kavallia tenuisolia* Swartz, as identified by Dawson, and *Asplenium tenerum* Lesquereux; Frank Hall Knowlton.—Smithsonian Misc. Coll., vol. 52 (Quart. Issue, vol. 5, pt. 4), pp. 489-495, 2 pls.

552. The fauna of the phosphate beds of the Park City formation in Idaho, Wyoming, and Utah, George H. Girty.—U. S. Geol. Survey, Bull. 436, 82 pp., 7 pls.

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Describes *Pediomyrus ferus* n. gen. and n. sp. from the upper Harrison beds of Converse County.

554. Tertiary faunal horizons in the Wind River Basin, with description of new Eocene mammals, Walter Granger.—Am. Mus. Nat. Hist., Bull., vol. 28, pp. 235-251, 5 pls., 5 figs.

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555. Bibliography of North American geology for 1910, John M. Nickles.—U. S. Geol. Survey, Bull. 495, 179 pp.

556. Mineral resources of Wyoming, C. E. Jamison.—Wyoming, Geologist's Office, Ser. B, Bull. 1, pp. 1-40.

557. Asbestos deposits of Casper Mountain, Wyoming, Henry C. Beeler.—Colorado School of Mines Mag., vol. 1, no. 10, pp. 5-9; no. 11, pp. 5-9, 4 figs., July and August.
558. The types, modes of occurrence and important deposits of asbestos in the United States, Joseph Silas Diller.—U. S. Geol. Survey, Bull. 470, pp. 505-524, 2 figs. (maps).
559. The types and modes of occurrence of asbestos in the United States, Joseph Silas Diller.—Canadian Min. Inst., Quart. Bull., no. 13, pp. 45-58, February.
560. A new synthesis and new occurrences of covellite, Austin F. Rogers.—School of Mines Quart., vol. 32, no. 4, pp. 298-304, 3 figs., July.
Describes the character of covellite from Kansas, Wyoming (Rambler mine), Nevada, Colorado, and California localities, and describes its occurrence and origin.
561. Sunlight mining district, J. H. East, jr.—Eng. and Min. Jour., vol. 91, pp. 1155-1156, June 10.
Describes the local geology and the character and occurrence of the ores containing copper, silver, and gold.
562. Natural gas in the Western States, Arthur Lakes.—Min. Sci., vol. 63, pp. 61-62, 2 figs., January 19.
563. The oil fields of Byron, Wyoming, H. E. Havenor.—Salt Lake Min. Rev., vol. 12, no. 19, pp. 15-16, 4 figs., January 15.
564. Geology and mineral resources of a portion of Fremont County, C. E. Jamison.—Wyoming, Geologist's Office, Ser. B, Bull. 2, 90 pp., 14 pls., map.
565. The Lander oil field, Elmer Grant Woodruff.—U. S. Geol. Survey, Bull. 452, pp. 7-36, 6 pls., 1 fig.
Describes the stratigraphy and geologic structure of the field, the occurrence and character of the oil, and the economic developments.
566. Origin of the Lander oil and western phosphate, Carpel L. Breger.—Min. and Eng. World, vol. 35, pp. 631-633, 1 fig., September 30.
567. The Salt Creek oil field, Carroll H. Wegemann.—U. S. Geol. Survey, Bull. 452, pp. 37-83, 6 pls.
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568. The geology of the Wyoming petroleum deposits, Arthur Lakes.—Min. Sci., vol. 63, pp. 414-416, 3 figs., April 20.
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570. Further data on the stratigraphic position of the Lance ("Ceratops beds"), Frank Hall Knowlton.—Jour. Geology, vol. 19, no. 4, pp. 358-376, 3 figs.; Washington Acad. Sci., Jour., vol. 1, no. 10, pp. 294-296, December 19.
571. Tertiary formations of northwestern Wyoming, William J. Sinclair.—(abstract), Science, new ser., vol. 33, p. 905, June 9.
572. Eocene and Oligocene of the Wind River and Bighorn basins, W. J. Sinclair and Walter Granger.—Am. Mus. Nat. Hist., Bull., vol. 30, pp. 83-117, 6 pls., 4 figs. (maps and sections); (abstract), Geol. Soc. America, Bull., vol. 22, no. 4, pp. 722-723, December 15.
Describes the stratigraphy and geologic history of the region and the characters, relations, source of materials, and mode of deposition of the formations.
573. The camels of the Harrison bed, with three new species, Frederic B. Loomis.—Am. Jour. Sci., 4th ser., vol. 31, pp. 65-70, 3 figs., January.
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Gives notes on the occurrence and character of vertebrate and other fossils.
575. Description of two new fossil figs from Wyoming and Montana, Frank Hall Knowlton.—Torrey Bot. Club, Bull., vol. 38, pp. 389-392, 4 figs., August.
Describes *Ficus ceratops* n. sp. from the Lance formation of Converse County, Wyoming, and *Ficus russelli* n. sp. from the Lance formation of Forsyth, Montana.
576. A new specimen of the four-toed horse; earliest known ancestor of the modern horse, a small four-toed Eohippus, discovered in the bad lands of Wyoming, Walter Granger.—Am. Mus. Jour., vol. 11, no. 3, pp. 85-88, 5 figs., March.
577. Origin of the thermal waters in the Yellowstone National Park, Arnold Hague.—Geol. Soc. America, Bull., vol. 22,

no. 1, pp. 103-122, March; *Science*, new ser., vol. 33, pp. 553-568, April 14.

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579. Coal near the Black Hills, Wyoming-South Dakota, Ralph W. Stone.—U. S. Geol. Survey, Bull. 449, 66 pp., 7 pls., 8 figs.; (abstract), *Washington Acad. Sci., Jour.*, vol. 2, no. 15, pp. 389-390, September 19.
580. The Cambria coal field in Wyoming, Jesse Simmons.—*Coal Age*, vol. 1, pp. 766-768, 2 figs., March 23.
581. The Little Powder River coal field, Campbell County, John A. Davis.—U. S. Geol. Survey, Bull. 471, pp. 423-440, 4 pls. (maps and sections).
582. The Lost Spring coal field, Converse County, Dean E. Winchester.—U. S. Geol. Survey, Bull. 471, pp. 472-515, 5 pls. (maps and sections).
583. The Sheridan coal field, Jesse Simmons.—*Coal Age*, vol. 1, pp. 866-868, 4 figs., April 13.
584. The Sussex coal field, Johnson, Natrona, and Converse Counties, Carroll H. Wegemann.—U. S. Geol. Survey, Bull. 471, pp. 441-471, 9 pls. (map and sections).
585. Coals of the Wind River region, Fremont and Natrona counties, E. G. Woodruff and Dean E. Winchester.—U. S. Geol. Survey, Bull. 471, pp. 516-564, 9 pls. (maps and sections), 2 figs.
586. A new chlorite from northern Wyoming, John E. Wolff.—*Am. Jour. Sci.*, 4th ser., vol. 34, pp. 475-476, November.
587. Lorandite from the Rambler mine, Austin F. Rogers.—*Am. Jour. Sci.*, 4th ser., vol. 33, pp. 105-106, 2 figs., February.
588. Nitrate deposits, Hoyt S. Gale.—U. S. Geol. Survey, Bull. 523, 36 pp., 2 pls., 2 figs.
A general review of the occurrence and origin of nitrate deposits.
589. The Douglas oil field, Converse County, C. E. Jamison.—Wyoming, Geologist's Office, Ser. B, Bull. 3, 30 pp., 8 pls. (incl. maps and sections).
590. Muddy Creek oil field, C. E. Jamison.—Wyoming, Geologist's Office, Ser. B, Bull. 3, 50 pp., 8 pls.

591. The Powder River oil field, Carroll H. Wegemann.—U. S. Geol. Survey, Bull. 471, pp. 56-75, 1 pl. (map), 1 fig.
592. The Salt Creek oil field, Natrona County, C. E. Jamison.—Wyoming, Geologist's Office, Ser. B, Bull. 4, 75 pp., 16 pls., 1 map.
593. The Spring Valley oil field in southwestern Wyoming, F. J. H. Merrill.—Min. and Sci. Press, vol. 104, pp. 163-165, 2 figs., January 27.
594. Potash-bearing rocks of the Leucite Hills, Sweetwater County, Alfred R. Schultz and Whitman Cross.—U. S. Geol. Survey, Bull. 512, 39 pp., 1 pl., 9 figs.; (abstract), Washington Acad. Sci., Jour., vol. 2, no. 6, p. 159, March 19.
Describes the character, composition, occurrence, and geologic relations of the rocks, and in detail the different exposures.
595. The Gros Ventre slide, an active earth flow, Eliot Blackwelder.—Geol. Soc. America, Bull., vol. 23, no. 4, pp. 487-492, 5 pls., 2 figs., October 21; (abstract), Geol. Soc. America, Bull., vol. 23, no. 4, p. 739, December 17.
Describes a landslide in western Wyoming south of Yellowstone National Park characterized by continuous slow motion for several years.
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598. Some glacial deposits east of Cody and their relations to the Pleistocene erosional history of the Rocky Mountain region, William J. Sinclair.—(abstract with discussion by W. W. Atwood), Geol. Soc. America, Bull., vol. 23, no. 4, p. 731, December 17.
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600. Some small natural bridges in eastern Wyoming, V. H. Barnett.—Jour. Geology, vol. 20, no. 5, pp. 438-441, 3 figs., July-August.

601. Notes on the Tertiary deposits on the Bighorn Basin, William J. Sinclair and Walter Granger.—Am. Mus. Nat. Hist., Bull., vol. 31, pp. 57-67, 2 pls., 1 fig., 1 map.
602. Integument of the Iguanodont dinosaur Trachodon, Henry F. Osborn.—Am. Mus. Nat. Hist., Mem., new ser., vol. 1, pt. 2, pp. 31-54, 6 pls., 13 figs., June.
603. An American Jurassic frog, Roy L. Moodie.—Am. Jour. Sci., 4th ser., vol. 34, pp. 286-288, September.
604. *Muraenosaurus?* *reedii* sp. nov. and *Tricleidus?* *laramiensis* Knight, American Jurassic plesiosaurs, Maurice G. Mehl.—Jour. Geology, vol. 20, no. 4, pp. 344-352, 3 figs., May-June.
605. Geysers, Walter H. Weed.—U. S. Dept. Interior, 29 pp., 22 figs.
606. Silica and lime deposition, N. H. Darton.—Geologische Charakterbilder (H. Stille), Heft 12, 6 pls. and explanatory text.
Gives reproduction of photographs taken in Yellowstone National Park, Mono Lake, California, and Cataract Canyon, Ariz., illustrating sinter deposits.
607. Geological history of the Yellowstone National Park, Arnold Hague.—U. S. Dept. Interior, 24 pp., 9 figs.

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609. Mining laws, Federal and State, L. W. Trumbull.—Wyoming, Geologist's Office, Bull. 6, 44 pp.
610. The Barber coal field, Johnson County, Carroll H. Wegemann.—U. S. Geol. Survey, Bull. 531, pp. 262-284, 3 pls. (maps and sections).
611. The Byron oil field, A. P. Rogers.—Eng. and Min. Jour., vol. 96, p. 869, November 8.
612. An occurrence of petroleum near Cody, D. F. Hewett.—(abstract), Washington Acad. Sci., Jour., vol. 3, no. 2, pp. 51-52, January.
613. Report on school sections, Oregon Basin, Dr. Cesare Porro.—Casper, November 10.

614. Prospective oil fields at Upton, Weston County, Buck Creek, Niobrara County, Rattlesnake Mountains, Natrona County, LaBarge, Lincoln County, L. W. Trumbull.—Wyoming, Geologist's Office, Ser. B, Bull. 5, 15 pp., 4 sketch maps.
615. The discovery and opening of a new phosphate field in the United States, Charles Colcock Jones.—Am. Inst. Min. Eng., Bull. 82, pp. 2411-2435, 13 figs., October.
Describes the phosphate deposits in northeastern Utah, southeastern Idaho, and western Wyoming.
616. Sulphur deposits of Sunlight Basin, D. F. Hewett.—U. S. Geol. Survey, Bull. 530, pp. 350-362, 1 pl. (sketch map), 1 fig. (index map).
617. The later Cenozoic history of the Wind River Mountains, Lewis G. Westgate and E. B. Branson.—Jour. Geology, vol. 21, no. 2, pp. 142-159, 9 figs., February-March.
618. Expeditions to the Miocene of Wyoming and the chalk beds of Kansas, Charles H. Sternberg.—Kansas Acad. Sci., Trans., vol. 25, pp. 45-49, 1 fig., 1913.
619. Origin of the Bighorn dolomite of Wyoming, Eliot Blackwelder,—Geol. Soc. America, Bull., vol. 24, no. 4, pp. 607-624, 8 pls., 1 fig., December 22.
620. Angistorhinus, a new genus of Phytosaur from the Trias of Wyoming, Maurice G. Mehl.—Jour. Geology, vol. 21, no. 2, pp. 186-191, 1 fig., February-March.
621. The skull of Bathyopsis, Wind River uintathere, Henry F. Osborn,—Am. Mus. Nat. Hist., Bull., vol. 32, pp. 417-420, 3 pls., 4 figs.
622. Coralline algae in an Ordovician dolomite, Eliot Blackwelder.—(abstract), Geol. Soc. America, Bull., vol. 24, no. 1, pp. 115, March 24.
623. A new dinosaur from the Lance formation of Wyoming, Charles W. Gilmore.—Smithsonian Misc. Coll., vol. 61, no. 5, 5 pp., 5 figs., May 24.
Describes *Thescelosaurus neglectus* n. gen. and n. sp.
624. Eomoropus, an American Eocene chalicotheres, Henry F. Osborn.—Am. Mus. Nat. Hist., Bull., vol. 32, pp. 261-274, 11 figs.
625. Fossil feathers and some heretofore undescribed fossil birds, Robert Wilson Shufeldt.—Jour. Geology, vol. 21, no. 7, pp. 628-652, 12 figs., October-November.

626. Description of a new fossil fern of the genus *Gleichenia* from the upper Cretaceous of Wyoming, Frank Hall Knowlton.—U. S. Nat. Mus., Proc., vol. 45, pp. 555-558, 1 pl.
627. New or little known Paleozoic faunas from Wyoming and Idaho, Eliot Blackwelder.—Am. Jour. Sci., 4th ser., vol. 36, pp. 174-179, August.
628. Lower Eocene titanotheres, genera *Lambdortherium*, *Eotitanops*, Henry F. Osborn.—Am. Mus. Nat. Hist., Bull., vol. 32, pp. 407-415, 9 figs.
629. Description of a new species of *Testudo*, and of a remarkable specimen of *Stylemys nebrascensis*, from the Oligocene of Wyoming, Lawrence M. Lambe.—Ottawa Naturalist, vol. 37, pp. 57-63, 4 pls., 1 fig., August-September.
630. The Yellowstone National Park, N. M. Fenneman.—Jour. Geology, vol. 11, pp. 314-320, 2 figs., June.
631. Le Parc National du Yellowstone; étude morphologique, Emm. de Martonne.—Annales de Géographie, Ann. 22, pp. 134-148, 2 pls., 5 figs., March 15.

Describes physiographic features of Yellowstone National Park.

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633. Useful minerals of the United States, Samuel Sanford and Ralph W. Stone.—U. S. Geol. Survey, Bull. 585, 250 pp.
Gives a brief description of the minerals and their occurrences.
634. Placer law as applied to petroleum, Max W. Ball.—Am. Inst. Min. Eng., 20 pp., New York Meeting, February.
635. Geology and geography of a portion of Lincoln County, Alfred R. Schultz.—U. S. Geol. Survey, Bull. 543, 141 pp., 11 pls., 8 figs.; (abstract), Washington Acad. Sci., Jour., vol. 4, no. 13, p. 370, July 19.
636. Atlantic City gold mining district, Fremont County, L. W. Trumbull.—Wyoming, Geologist's Office, Bull. 7, pp. 69-97, 2 maps, 3 pls.; Min. Sci., vol. 69, pp. 45-49, June.
637. Gold placers on Wind and Bighorn rivers, Frank G. Schrader.—U. S. Geol. Survey, Bull. 580, pp. 127-145, 1 pl. (map), 1 fig.

638. Possibilities of oil in the Big Muddy dome, Converse and Natrona counties, V. H. Barnett.—U. S. Geol. Survey, Bull. 581, pp. 105-117, 1 pl. (map).
639. Douglas oil and gas field, Converse County, V. H. Barnett.—U. S. Geol. Survey, Bull. 541, pp. 49-88, 2 figs., map.
640. The Moorcroft oil field, Crook County, V. H. Barnett.—U. S. Geol. Survey, Bull. 581, pp. 83-104, 1 pl., 1 fig., (maps).
641. The Salt Creek oil field, L. W. Trumbull.—Wyoming, Geologist's Office, Ser. B, Bull. 8, pp. 103-148, 3 maps.
642. The Shoshone River section, D. F. Hewett.—U. S. Geol. Survey, Bull. 541, pp. 89-113, 1 pl.
643. The ore deposits of Kirwin, Wyoming, D. F. Hewett.—U. S. Geol. Survey, Bull. 540, pp. 121-132, 3 figs.
644. Sulphur deposits in Park County, D. F. Hewett.—U. S. Geol. Survey, Bull. 540, pp. 477-480.
645. Results of spirit leveling in Wyoming, 1896-1912, R. B. Marshall.—U. S. Geol. Survey, Bull. 558, 148 pp.
646. Post-Cretaceous history of the mountains of central western Wyoming, Eliot Blackwelder.—Washington Acad. Sci., Jour., vol. 4, no. 15, pp. 445-446, September 19.
647. On the names of lower Eocene faunal horizons, of Wyoming and New Mexico, Walter Granger.—Am. Mus. Nat. Hist., Bull., vol. 33, pp. 201-207.
648. Osteology of the armored Dinosauria in the United States National Museum, with special reference to the genus Stegosaurus, Charles W. Gilmore.—U. S. Nat. Mus., Bull., 89, 136 pp., 37 pls., 73 figs.
649. Tertiary Mollusca from New Mexico and Wyoming, T. D. A. Cockerell.—Am. Mus. Nat. Hist., Bull., vol. 33, pp. 101-107, 3 pls.
650. Land shells from the Tertiary of Wyoming, T. D. A. Cockerell.—Am. Mus. Nat. Hist., Bull., vol. 33, pp. 323-325, 5 figs.
651. Two new plants from the Tertiary rocks of the West, T. D. A. Cockerell.—Torreya, vol. 14, no. 8, pp. 135-137, 2 figs., August.
652. Petrographic analysis of the Bridger, Washakie, and other Eocene formations of the Rocky Mountains, with introduc-

tory note by D. W. Matthew, Albert Johannsen.—Am. Mus. Nat. Hist., Bull., vol. 33, pp. 209-222, 2 figs.

653. Fossil forests of the Yellowstone National Park, Frank Hall Knowlton.—U. S. Dept. of Interior, Office of Sec., 31 pp., 15 figs., map.

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654. Bibliography of North American geology for 1914, with subject index, John M. Nickles.—U. S. Geol. Survey, Bull. 617, 167 pp.
655. Biennial report, 1913-1914, L. W. Trumbull.—Wyoming Geologist's Office, Ser. B, Bull. 9, pp. 149-168.
656. Guidebook of the western United States, the Overland Route, Willis T. Lee, Ralph W. Stone, Hoyt S. Gale, and others.—U. S. Geol. Survey, Bull. 612, 244 pp., 28 maps, 50 pls., 20 figs.; (abstract by F. L. Ransome), Washington Acad. Sci., Jour., vol. 5, no. 16, p. 580, October 4.
With a side trip to Yellowstone Park.
657. Gold, silver, copper, and lead in South Dakota and Wyoming in 1914, Charles W. Henderson.—U. S. Geol. Survey, Mineral Resources, 1914, pt. 1, pp. 239-254.
658. Origin of thick gypsum and salt deposits, E. B. Branson.—Geol. Soc. America, Bull., vol. 26, no. 2, pp. 231-242, 2 figs., June 28; (abstract and discussion), no. 1, pp. 103-104, March 31.
659. The accumulation of petroleum near the outcrop of oil sands, Leon J. Pepperberg.—Western Eng., vol. 5, no. 11, pp. 463-465, May.
660. The Basin and Greybull oil and gas fields, F. F. Hintze, jr.—Wyoming, Geologist's Office, Bull. 10, 62 pp., map.
661. Map of the Big Muddy and Douglas oil fields, L. W. Trumbull.—Wyoming, Geologist's Office, 10 by 25 inches. Scale: 1 inch = 1 mile.
Compiled from U. S. Geol. Survey reports.
662. The Grass Creek oil and gas field, F. F. Hintze, jr.—Wyoming, Geologist's Office, Bull. 11, pt. 2, pp. 91-120, 1 map, 1 illus., 1 pl., 1915.
663. The Little Buffalo Basin oil and gas field, F. F. Hintze, jr.—Wyoming, Geologist's Office, Bull. 11, pt. 1, pp. 67-90, 6 pls. (incl. maps).
664. Map of the Rock Springs uplift, Dry Lake dome, Sweetwater

County, L. W. Trumbull.—Wyoming, Geologist's Office, 12 by 19 inches. Scale: 1 inch = 2 miles.

Compiled from U. S. Geological Survey coal reports and data of detailed survey.

665. Correlation of some of the Cretaceous and Eocene formations of central Wyoming, C. J. Hares.—(abstract), Washington Acad. Sci., Jour., vol. 5, no. 9, pp. 328-330, May 4.
666. Post-Cretaceous history of the mountains of central Wyoming, Eliot Blackwelder.—Jour. Geology, vol. 23, no. 2, pp. 97-117; no. 3, pp. 193-217; no. 4, pp. 307-340, 2 pls. (maps), 51 figs.
667. The relation of the Upper Cretaceous formations of southern Wyoming and northeastern Colorado, W. B. Heroy.—(abstract), Washington Acad. Sci., Jour., vol. 5, no. 9, pp. 330-331, May 4.
668. Fox Hills formation of Colorado and Wyoming, Timothy W. Stanton.—Washington Acad. Sci., Jour., vol. 5, no. 9, pp. 332-333, May 4.
669. Origin of red beds of western Wyoming, E. B. Branson.—Geol. Soc. Am., Bull., vol. 26, no. 2, pp. 217-230, June 28; (abstract and discussion), no. 1, pp. 61-62, March 31.
670. A fully exposed reef of calcareous algae(?) in the middle Cambrian of the Teton Mountains, Eliot Blackwelder.—Am. Jour. Sci., 4th ser., vol. 39, pp. 646-650, 3 figs., June.
671. A critical study of the fossil bird *Gallinuloides wyomingensis* Eastman, Robert Wilson Shufeldt.—Jour. Geology, vol. 23, no. 7, pp. 619-634, 2 figs., October-November.
672. The mammals and horned dinosaurs of the Lance formation of Niobrara County, Wyoming, Richard Swan Lull.—Am. Jour. Sci., 4th ser., vol. 40, pp. 319-348, 5 figs. (incl. maps), October.
673. Gastropod Mollusca from the Tertiary strata of the West, T. D. A. Cockerell.—Am. Mus. Nat. Hist., Bull., vol. 34, pp. 115-120, 5 figs.
674. A new mosasaur from the Fort Pierre (*Platecarpus brachycephalus*, Wyoming), Frederic B. Loomis.—Am. Jour. Sci., 4th ser., vol. 39, pp. 555-566, 9 figs., May.
675. *Poposaurus gracilis*, a new reptile from the Triassic of Wyoming, Maurice G. Mehl.—Jour. Geology, vol. 23, no. 6, pp. 516-522, 2 figs., September-October.
676. Osteology of *Thescelosaurus*, an orthopodous dinosaur from the Lance formation of Wyoming, Charles W. Gilmore,—

U. S. Nat. Mus., Proc., vol. 49, pp. 591-616, 3 pls., 20 figs., December 23.

677. New species of the *Unio* from the Tertiary rocks of Wyoming, T. D. A. Cockerell.—Am. Mus. Nat. Hist., Bull., vol. 34, pp. 121-126, 4 figs.
678. A revision of the lower Eocene Wasatch and Wind River faunas, William Diller Matthew and Walter Granger.—Am. Mus. Nat. Hist., Bull., vol. 34, pp. 1-103, 311-328, 329-361, 429-483, 1 pl., 167 figs.
679. Guidebook of western United States, The Northern Pacific Route, with a side trip to Yellowstone Park, Marius R. Campbell, et al.—U. S. Geol. Survey, Bull. 611, 212 pp., 27 pls., 38 figs., 27 maps; (abstract, by F. L. Ransome), Washington Acad. Sci., Jour., vol. 5, no. 16, pp. 579-580, October 4.

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680. Bibliography of North American geology for 1915, with subject index, John M. Nickles.—U. S. Geol. Survey, Bull. 645, 144 pp.
681. Principles of oil and gas production, Roswell H. Johnson and L. G. Huntley.—371 pp., 148 figs., New York, John Wiley & Sons.
Concise description of the various oil fields of Wyoming.
682. Petroleum withdrawals and restorations affecting the public domain, Max W. Ball.—U. S. Geol. Survey, Bull. 623, 427 pp., maps.
683. Economic geology of the North Laramie Mountains, Converse and Albany counties, Arthur C. Spencer.—U. S. Geol. Survey, Bull. 626, pp. 47-81, 2 pls. (maps), 4 figs. (maps); (abstract), Washington Acad. Sci., Jour., vol. 6, no. 13, p. 449, July 19.
684. The Atlantic gold district, Fremont County, Arthur C. Spencer.—U. S. Geol. Survey, Bull. 626, pp. 9-45, 3 pls. (maps), 2 figs. (maps).
685. Gold, silver, copper, and lead in South Dakota and Wyoming in 1915, Charles W. Henderson.—U. S. Geol. Survey, Mineral Resources, 1915, pt. 1, pp. 343-356, November 3.
686. Gypsum in the southern part of the Bighorn Mountains, Charles T. Lupton and D. Dale Condit.—U. S. Geol.

- Survey, Bull. 640, pp. 139-157, 3 pls. (incl. map), November 29.
687. Anticlines in central Wyoming, C. J. Hares.—U. S. Geol. Survey, Bull. 641, pp. 233-279, 1 pl. (map), 19 figs., December 16.
688. Oil and gas near Basin, Big Horn County, Charles T. Lupton.—U. S. Geol. Survey, Bull. 621, pp. 157-190, 2 pls. (maps), 1 fig., January 21.
689. Light oil fields of Wyoming, L. W. Trumbull.—Wyoming, Geologist's Office, Bull. 12, pp. 123-130, map; 2d ed., pp. 123-134, 1 pl., 1 map.
690. Oil shale in northwestern Colorado and adjacent areas, Dean E. Winchester.—U. S. Geol. Survey, Bull. 641, pp. 139-198, 10 pls. (incl. maps), 2 figs., December 18.
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AUTHORS' INDEX

(Numbers refer to entries in the Bibliography)

- Adams, George I.**
Patrick and Goshen Hole: 345.
- American Journal Science.**
Coal: 45.
- Anonymous.**
Geyser: 709.
- Ashburner, C. A.**
Coal: 180.
- Aughey, Samuel.**
Geologist's report, 1886: 166.
- Bailey, G. E.**
Map of Wyoming: 179.
- Baker, Charles L.**
Cenozoic history, central Wyoming: 596.
- Ball, John.**
Country west of Rockies: 2.
- Ball, Max W.**
Little Snake River coal field; western part: 505.
Petroleum withdrawals: 682.
Placer law as applied to petroleum: 634.
- Ball, M. W., and Stebinger, E.**
Little Snake River coal field, eastern part: 536.
- Ball, Sydney H.**
Graphite: 464.
Hartville iron district: 466.
Hartville copper region: 462.
Iron Mountain: 465.
Mica: 468.
Portland cement material: 455.
- Bannister, Henry M.**
Age of Laramie: 121.
Reconnaissance along Union Pacific R. R.: 56.
- Barbour, Erwin Hinckley, and Fisher, Cassius A.**
Calcite-sand crystal: 346.
- Barnett, V. H.**
Big Muddy oil and gas field: 638.
Disruption of rock by lightning: 491.
Douglas oil and gas field: 639.
Moorecroft oil field: 640.
Natural bridges, eastern Wyoming: 600.
- Barrow, F. H.**
Asbestos: 531.
- Bastin, E. S.**
Baked clays and natural slags: 404.
- Baur, G.**
American fossil tortoises: 230.
- Beam, W.**
Rock from Yellowstone Park: 138.
- Beecher, Charles E.**
Silurian strata: 253.
- Beeler, Henry C.**
Albany County: 423.
Asbestos: 530, 557.
Grand Encampment, copper: 407.
Laramie Peak, copper: 388.
Mineral resources, Wyoming: 401.
Mines in 1907: 480.

- Beeler, Henry C.**—*Continued*
South Pass, gold: 370, 389, 489.
State Geologist's report: 365.
- Blackburn, Charles F.**
Missouri, Columbia, and Colorado rivers, wilderness at head of: 115.
Wind River district, glacial observations: 181.
- Blackwelder, Eliot.**
Algal reef, Teton Mountains: 670.
Amsden fauna: 646.
Bighorn dolomite: 619.
Coralline algae, Ordovician dolomite: 622.
Gros Ventre slide: 595.
Laramie region: 511.
Paleozoic faunas: 627.
Phosphate: 569.
Post-Cretaceous, central Wyoming: 646, 666.
Pre-Cambrian rock, southeastern Wyoming: 494.
- Blackwelder, E., et al.**
Laramie and Sherman quadrangles: 529.
- Blackwelder, E., and Salisbury, R. D.**
Bighorn Mountains, glaciation: 376.
- Blake, William P.**
Geologic map of United States, by Marcou: 8.
Orography, Western States: 10.
- Blake, W. P., and Hitchcock, C. H.**
Map of United States: 52.
- Bowen, C. F.**
Hanna Basin, stratigraphy and structure: 698.
- Bradley, Frank H.**
Explorations of 1872: 55.
Yellowstone district: 63.
- Bradley, F. H., and Hayden, F. V.**
Snake River, map of sources of: 38.
- Branson, E. B.**
Embar: 704.
Red beds, western Wyoming: 669.
- Branson, E. B., and Westgate, L. G.**
Cenozoic history, Wind River Mountains: 597, 617.
- Breger, Carpel L.**
Lander oil field and western phosphates: 566.
Salt, Wyoming border: 543.
- Brewer, William H.**
Warren's Geography: 195.
- Cadell, Henry M.**
Yellowstone region: 234.
- Campbell, Marius P.**
Coal. United States: 712.
- Campbell, Marius P., et al.**
Northern Pacific Route: 679.
- Carpenter, W. L.**
Bighorn Mountains: 101.
- Chance, H. Martyn.**
Black Hills and Bighorn country: 206.
Iron, Hartville: 334.
- Cockerell, T. D. A.**
Eocene fossils, Green River: 519.
Gastropod, Tertiary: 673.
Tertiary insects: 497.

- Cockerell, T. D. A.—Continued**
Tertiary land shells: 650.
Tertiary Mollusca: 649.
Tertiary plants: 651.
Unio, Tertiary: 677.
- Comstock, Theodore B.**
Geyser basins, Yellowstone: 98.
Geyserite problems, Yellow-
stone: 92.
Hot springs, geysers, etc.: 89.
Northwestern Wyoming: 72.
Supermetamorphism: 174.
Supermetamorphism and volcan-
ism: 170.
Volcanism: 175.
Western Wyoming, geology: 57.
- Condit, D. Dale.**
Embar and Chugwater, central
Wyoming: 697.
- Condit, D. Dale, and Lupton, C. T.**
Gypsum, Bighorn Mountains:
686.
- Cope, Edward D.**
Coal, age of: 43.
Coal, Bitter Creek: 42.
Cretaceous age, lignite of West:
69.
Cretaceous of West: 76.
Cretaceous vertebrata of West:
70.
Dinosaurs in transition beds: 59.
Eocene, extinct vertebrata: 60.
Eocene, vertebrate fauna: 85.
Tertiary, central region: 136.
Tertiary floras, western Terri-
tories: 108.
Vertebrate paleontology: 71.
Vertebrata of Tertiary of West:
153.
- Crook, Alja Robinson.**
Yellowstone National Park: 273.
- Cross, Whitman.**
Igneous rocks, Leucite Hills: 274.
- Cross, W., and Iddings, J. P.**
Allanite as a rock constituent:
165.
- Cross, W., and Schultz, A. R.**
Potash, Leucite Hills: 594.
- Dake, C. L.**
Western Park County: 721.
- Dana, James D.**
Age of lignitic rocks: 78.
- Dana, E. S., and Grinnell, G. B.**
Carroll to Yellowstone Park: 91.
- Darton, N. H.**
Bibliography, North American
geology, 1732-1891: 246.
Bibliography, North American
geology, 1882-1886: 172.
Bibliography, North American
geology, 1887-1889: 204.
Bibliography, North American
geology, 1890: 205.
Bibliography, North American
geology, 1891: 215.
Bald Mountain and Dayton
quadrangles: 424.
Bighorn Mountains, geology:
427.
Bighorn Mountain region: 428,
472.
Black Hills, geology: 331, 510.
Black Hills and Rocky Moun-
tain Front Range: 339, 392.
Central Great Plains, geology
and water resources: 399.
Cloud Peak and Fort McKinney:
429.
Coal, Black Hills: 405.
Hot springs, Thermopolis: 450
Newcastle folio: 382.

- Darton, N. H.—Continued**
Ordovician, Bighorn Mountains: 447.
Owl Creek Mountains: 430.
Paleozoic and Mesozoic, central Wyoming: 493.
Red Beds, Laramie Mountain region: 474.
Silica and lime deposition, Yellowstone: 606.
Sundance folio: 400.
- Darton, N. H., et al.**
Laramie and Sherman quadrangles: 529.
- Darton, N. H., and O'Harra, C. C.**
Aladdin folio: 398.
Devil's Tower quadrangle: 451.
- Darton, N. H., and Siebenthal, C. E.**
Laramie Basin, geology and mineral resources: 500.
- Davis, John A.**
Little Powder River coal field: 581.
- Davis, William Morris.**
Fresh-water Tertiaries, Green River: 379.
- De la Condamine.**
Petroleum: 488.
- Diller, Joseph Silas.**
Asbestos: 558, 559.
- Duffield, Morse S.**
Phosphate: 542.
- Dutton, C. E.**
Permian, North America: 128.
Petrography of rocks, Yellowstone: 150.
- Earle, Charles.**
Coryphodon: 226.
- Earle, C., and Wortman, J. L.**
Ancestors of tapir, lower Miocene: 228.
- East, J. H., jr.**
Sunlight mining district: 561.
- Eastman, Charles R.**
Bird and fish remains, middle Eocene: 322.
Lepidosteids: 328.
- Eccles, James.**
Volcanic rocks, Montana: 135.
- Eckel, Edwin C.**
Cement materials and industries: 403.
- Eldridge, George H.**
Northwestern Wyoming: 235.
- Emmons, Samuel F.**
Geologic sketch of Rocky Mountain division: 156.
Platinum in copper ores: 373.
- Emmons, S. F., and Hague, Arnold.**
Fortieth Parallel: 93.
- Endlich, F. M.**
Sweetwater district: 116.
- Engelmann, H.**
Fort Leavenworth to Bryans Pass: 11.
- Fenneman, N. M.**
Yellowstone National Park: 630.
- Ferrier, W. F., and Weeks, F. B.**
Phosphate, western United States: 469.
- Fisher, Cassius A.**
Bentonite: 402.
Bighorn Basin: 425, 426.
Coal, Bighorn Basin: 384.

- Fisher, C. A., and Barbour, E. H.**
Calcite-sand crystal: 346.
- Fontaine, William Morris.**
Cretaceous plants, Hay Creek coal field: 293.
- Foster, William.**
Colorado building stones: 152.
- Fraas, E.**
Jurassic strata: 356.
- Fremont, J. C.**
Expedition to Rocky Mountains, Oregon, and California: 8.
- Gabb, William M.**
Cretaceous and Tertiary fossils, upper Missouri: 83.
- Gale, Hoyt S.**
Nitrate: 588.
- Gale, Hoyt S., et al.**
The Overland Route: 656.
- Gale, H. S., and Richards, Ralph W.**
Phosphate: 540.
- Gale, H. S., and Wegemann, C. H.**
Buffalo coal field: 534.
- Geikie, Archibald.**
Ancient glaciers of Rocky Mountains: 130.
Archean, Wasatch Mountains: 129.
In Wyoming: 137.
- Gilbert, G. K.**
Colorado Plateau province: 81.
- Gilmore, Charles W.**
Armored dinosaur: 648.
Baptanodon from Jurassic: 475.
Dinosaur, Lance formation: 623.
Teeth in Baptanodon: 360.
Leidyosuchus sternbergi crocodile: 550.
- Girty, George H.**
Devonian and Carboniferous, Yellowstone: 300.
Fauna of phosphate beds, Park City formation: 552.
- Goldsmith, E.**
Alkali, Bridger Valley: 111.
- Goode, John Paul.**
Piracy of Yellowstone: 310.
- Granger, Walter.**
Eocene faunal horizons: 516, 647.
Eohippus: 576.
Tertiary faunal horizons in Wind River: 554.
Washakie faunal horizons: 516.
- Granger, W., and Matthew, W. D.**
Wasatch and Wind River faunas: 678.
- Granger, W., and Sinclair, W. J.**
Eocene and Oligocene, Wind River and Bighorn basins: 572.
Tertiary, Bighorn Basin: 601.
- Gratacap, L. P.**
Jurassic dinosaurs: 362.
- Grinnell, G. B., and Dana, E. S.**
Carroll to Yellowstone Park: 91.
- Hague, Arnold.**
Absaroka folio: 290.
Huckleberry Mountain: 305.
Leucite rocks, Absaroka Range: 187.
Macfarlane's Railway Guide: 114, 196.

- Hague, Arnold**—Continued
Tertiary volcanoes, 841.
Tertiary volcanoes, Absaroka Range: 294.
Yellowstone division, report of: 171, 191.
Yellowstone National Park: 233.
Yellowstone Park folio: 257.
Yellowstone Park, igneous rocks: 260.
Yellowstone Park, geologic history: 607.
Yellowstone Park, history of: 185.
Yellowstone Park reconnaissance: 155.
Yellowstone Park, thermal waters: 577.
- Hague, A., and Emmons, S. F.**
Fortieth Parallel: 93.
- Hall, James.**
Expedition to Salt Lake: 4.
- Hares, C. J.**
Anticlines, central Wyoming: 687.
Cretaceous and Eocene formations, central Wyoming: 665.
Cretaceous and Tertiary, Hanna and Powder River Basins: 699.
- Hatcher, John B.**
Astrodon (*Pleurocoelus*) in the *Atlantosaurus*: 378.
Carnegie Museum paleontological expedition: 318.
Ceratops beds: 223.
Ceratopsia from Laramie: 410.
Fore limb and manus of *Brontosaurus*: 361.
Lance Creek beds, age: 377.
Laramie mammals and dinosaurs: 256.
Titanotherium beds: 229.
Vertebral formula, *Diplodocus*: 321.
- Hatcher, J. B., Marsh, O. C., and Lull, R. S.**
Ceratopsia: 476.
- Havenor, H. E.**
Byron oil fields: 563.
- Hay, Oliver Perry.**
Baena from Laramie beds: 359.
Fossil turtles, Bridger Basin: 419.
- Hayden, F. V.**
Artesian borings: 95.
Bear River group: 33.
Explanation of Map of Nebraska: 17.
Front Range, Rocky Mountains: 73.
Geysers, Yellowstone and Firehole rivers: 50.
Geologic features, eastern margin Rocky Mountains: 21.
Great West: 127.
Lignite group, eastern Colorado: 79.
Missouri River country, map: 14.
Missouri and Yellowstone rivers, headwaters of: 18.
Missouri Valley, geology: 34.
Primordial of Rocky Mountains: 19.
Recent glaciers, Wyoming: 102.
Sun pictures of Rocky Mountain scenery: 29.
Wasatch group: 109.
Wyoming and Colorado, notes: 23, 31.
Yellowstone and Missouri rivers, exploration of: 24.
Second report, survey of Territories: 20, 30, 39.
Sixth annual report, Idaho, Utah, Wyoming, Montana: 54.
Survey of Colorado and New Mexico: 22.
Survey of Nebraska: 37.
General report, Montana and adjacent Territories: 35.
Survey of Territories, preliminary report: 94, 100.

- Hayden, F. V.—Continued**
General statements, Wyoming and Idaho: 139.
Progress of survey, Wyoming and Idaho: 117.
Sections to accompany report of Survey 1872: 40.
- Hayden, F. V., and Bradley, F. H.**
Map, sources of Snake River: 38.
- Hayden, F. V., and Meek, F. B.**
Black Hills, geology: 16.
Sources of Missouri: 9.
Tertiary and Cretaceous of Northwest: 15.
- Hayden, F. V., and Peale, A. C.**
Montana and Wyoming, map: 36.
- Henderson, Charles W.**
Gold, silver, copper, lead in 1914: 657.
Gold, silver, copper, lead in 1915: 685.
- Heroy, W. B.**
Upper Cretaceous, Wyoming and Colorado: 667.
- Hewett, D. F.**
Ore deposits, Kirwin: 643.
Petroleum, Cody: 612.
Shoshone River section: 642.
Sulphur, Park County: 644.
Sulphur, Sunlight Basin: 616.
- Hewett, D. F., and Lupton, C. T.**
Anticlines, Bighorn Basin: 713.
- Hill, Benjamin F.**
Rocks from Wyoming: 311.
- Hills, R. C.**
Features of Rocky Mountain geology: 209.
Past eruptions of Rocky Mountains: 210.
- Hines, C. M.**
Geologic notes, Yellowstone Park: 26.
- Hintze, F. F. jr.**
Basin-Greybull oil field: 660.
Grass Creek oil and gas field: 662.
Little Buffalo Basin oil and gas field: 663.
- Hitchcock, Charles H.**
Map of United States: 173.
Map of United States: 52.
- Hodge, James T.**
Tertiary coals of West: 44.
- Holland, W. J.**
Crocodile, Wyoming Jurassic: 411.
Vertebral formula, Diplodocus: 320.
- Holmes, W. H.**
Fossil forests in volcanic Tertiary: 126.
Geology, Yellowstone Park: 148.
Obsidian, Yellowstone Park: 125.
- Hovey, Edmund Otis.**
Floating sands and stones: 330.
Triassic and Jurassic, Black Hills: 358.
- Hunt, T. Sterry.**
Older rocks of the West: 103.
- Huntley, L. G., and Johnson, R. H.**
Oil and gas production: 681.
- Iddings, Joseph P.**
Absarokite-shoshonite-banakite series: 245, 296.
Eruptive rock, Electric Peak: 220.
Extrusive and intrusive igneous rocks: 258.
Igneous rocks, Absaroka Range: 295.

- Iddings, Joseph P.**—Continued
Igneous rocks, Electric Peak: 301.
Igneous rocks, Yellowstone Park: 203, 259.
Intrusive rocks, Gallatin Mountains: 304.
Lithophysae and lamination of lava: 176.
Leucite rocks, Absaroka Range: 187.
Obsidian cliff, Yellowstone Park: 186.
Recent basalt: 297.
Rhyolites, Yellowstone Park: 307.
Spherulitic crystallization: 214.
Teton Range, geology: 309.
Volcanoes, Crandall Basin: 299.
Volcano, dissected: 231.
- Iddings, J. P., and Cross, W.**
Allanite as a rock constituent: 165.
- Iddings, J. P., and Penfield, S. L.**
Minerals in spherulites, Glade Creek: 207.
- Iddings, J. P., and Weed, W. H.**
Gallatin Mountains, geology: 303.
- Jagger, Thomas Augustus, jr.**
Geyser eruptions: 287.
- James, E.**
Map of country drained by Mississippi: 1.
- Jamison, C. E.**
Douglas oil field: 589.
Fremont County: 564.
Mineral resources: 556.
Muddy Creek oil field: 590.
Salt Creek oil field: 592.
- Jardin, Ed.**
Travertine formations and deposits: 237.
- Johannsen, Albert.**
Petrographic analysis, Rocky Mountain formations: 652.
- Johnson, Roswell H., and Huntley, L. G.**
Oil and gas production: 681.
- Jones, Charles Colecock.**
Phosphate: 470, 615.
- Jones, T. Rupert.**
Ostracoda: 227.
- Jordan, David Starr.**
Fish, Green River shales: 549.
- Kemp, James Furman:**
Lagerstaetten titanaltigen: 353.
Leucite Hills: 270, 374.
Platinum, Rambler mine: 391.
Titaniferous magnetite: 408.
- Kemp, J. F., and Knight, W. C.**
Leucite Hills: 375.
- Kennedy, J. C.**
Wyoming copper region: 277.
- Kennedy, Stewart.**
Lignite, northeastern Wyoming: 461.
- Kindle, E. M.**
Jefferson limestone: 492.
- King, Clarence.**
Fortieth Parallel, geology: 99.
Green River coal basin: 27.
- Kneeland, Samuel.**
Geology along Union Pacific R. R.: 65.
- Knight, S. H.**
Red Beds, southeastern Wyoming: 701.
- Knight, W. C.**
Artesian basins: 313.
Bates Hole: 338.
Building stones and clays: 276.
Coals and coal measures: 238.

- Knight, W. C.—Continued**
- Coal, Uinta County: 367.
 - Geology of the oil fields: 269, 335.
 - Gypsum: 390.
 - Jurassic rock, southeastern Wyoming: 316.
 - Jurassic vertebrates: 283, 284, 327.
 - Laramie Plains Red Beds: 357.
 - Mineral resources: 222.
 - Petroleum fields: 267, 336, 350.
 - Rare metals, Rambler mine: 351.
 - Salt Creek oil field: 251, 252.
 - Soda, Wyoming: 280.
 - Sweetwater mining district: 333.
 - Wyoming fossil fields expedition: 323.
- Knight, W. C., and Kemp, J. F.**
Leucite Hills: 375.
- Knight, W. C., and Slosson, E. E.**
Alkali lakes and deposits: 332.
Bonanza, Cottonwood, and Douglas oil fields: 371.
Dutton, Rattlesnake, Arago, and Oil Mountain oil fields: 337.
Newcastle oil field: 349.
Oil fields, Crook and Uinta counties: 289.
- Knowlton, Frank Hall.**
Araucarioxylon, Freezeout Hills: 317.
Chara, new species: 224.
Flora, Montana formation: 329.
Fossil figs: 575.
Fossil flora, Yellowstone Park: 302.
Fossil forests: 286, 653.
Frontier formation, southeastern Wyoming: 718.
Gleichenia, Cretaceous: 626.
Hell Creek and Ceratops beds: 513.
Lance formation: 570.
Mesozoic and Cenozoic plants: 551.
Morrison formation: 706.
Tertiary flora, Yellowstone Park: 262.
- Knowlton, F. H., and Stanton, T. W.**
Laramie and related formations: 271.
- Kunz, George F.**
Precious stones: 242.
- Lakes, Arthur.**
Asbestos: 501.
Dinosaur of Rocky Mountains: 119.
Grand Encampment, copper: 386.
Natural gas: 507, 562.
Petroleum: 568.
Prospecting for oil: 348.
Wyoming oil fields: 278.
- Lambe, Lawrence M.**
Testudo and turtles, Oligocene: 629.
- LeConte, Joseph.**
Geysers: 110.
- Lee, Willis T., et al.**
The Overland Route: 650.
- Lees, J. H.**
Paleorhinus: 477.
- Leidy, Joseph.**
Action of wind and sand on rocks: 41.
Extinct mammals: 46.
Extinct fauna, Western Territories: 62.
Fossil mammalia: 47.
- Leith, Charles Kenneth.**
Iron ores: 436.
- Lesquereux, Leo.**
Age of certain beds, Wyoming: 58.
Age of lignite, Rocky Mountains: 68.
Cretaceous flora, North America: 84.
Cretaceous and Tertiary flora in West: 142.

- Lesquereux, Leo**—Continued.
Fossil flora, North America: 86.
Lignite formation and its flora: 61, 67.
Lignite formation, North America: 107.
New plants from lignite: 87.
Tertiary flora and age: 88.
Tertiary flora, North America: 49.
- Lingren, Waldemar.**
Gold production, North America: 369.
Titanic iron ore: 354.
- Logan, W. N.**
Jurassic, Freezeout Hills: 326.
- Loomis, Frederic B.**
Bird from Wasatch: 449.
Camels, Harrison beds: 573.
Hyopsodidae, Wasatch and Wind River: 415.
Jurassic stratigraphy, southeastern Wyoming: 340.
Mosasaur, Fort Pierre: 674.
Peccaries, new genus: 553.
Wasatch, origin: 478.
Wasatch and Wind River rodents: 479.
- Lucas, Frederic A.**
Dinosaur trachodon annexens: 395.
Gallinuloides wyomingensis, Eastman: 325.
- Lull, Richard Swan.**
Lance fauna, Niobrara County: 672.
- Lupton, Charles T.**
Bighorn Basin, stratigraphy: 696.
Oil and gas, Basin: 688.
- Lupton, C. T., and Condit, D. D.**
Gypsum, Bighorn Mountains: 686.
- Lupton, C. T., and Hewett, D. F.**
Anticlines, Bighorn Basin: 713.
- Lupton, C. T., and Stone, R. W.**
Powder River coal field: 537.
- Macfarlane, James.**
Coal regions, America: 96.
- McGee, W. J.**
Map of United States: 159.
- McMasters, John Bach.**
Bridger beds, Wyoming: 132.
- Mansfield, George Rogers.**
Drainage modifications, Bighorn Mountains: 438.
Phosphate, Salt River Range: 693.
Wayan quadrangle, geologic map: 702.
- Marcou, Jules.**
Map of United States: 5.
Geology of North America: 6, 12.
- Marsh, Othniel C.**
American Jurassic mammals: 162.
Ancient lake basins of Rocky Mountains: 74.
Brontops robustus, Miocene: 189.
Ceratopsia: 281.
Ceratopsidae, skull: 190, 197.
Claosaurus: 218, 225.
Dinocerata: 161, 168.
Geological horizons determined by vertebrate fossils: 213.
Jurassic dinosaurs: 105.
Mauvaises Terres formations: 28.
Reptilia of Baptonodon: 244.
Restoration of Camptosaurus: 236.
Stylinodontia: 272.
Uinta Mountains, eastern: 32.
- Marshall, R. B.**
Spirit leveling, Wyoming: 645.

- Martonne, Emile de.**
Yellowstone National Park: 631.
- Matthes, Francois E.**
Glacial sculpture, Bighorn Mountains: 315.
- Matthew, William Diller.**
Allosaurus: 495.
Apternodos, skull: 517, 547.
Carnivora and insectivora, Bridger Basin: 518.
Sinopa, osteology: 448.
- Matthew, W. D., and Granger, W.**
Wasatch and Wind River faunas: 678.
- Meek, F. B.**
Cretaceous and Tertiary fossils, upper Missouri: 83.
Fossils, Greeley and Evans, Colorado: 75.
Paleontological report: 48.
- Meek, F. B., and Hayden, F. V.**
Black Hills, geology: 16.
Sources of Missouri: 9.
Tertiary and Cretaceous, Northwest: 15.
- Mehl, Maurice G.**
Angistorhinus, Triassic phytosaur: 620.
Jurassic plesiosaurs: 604.
Poposaurus gracilis, Triassic: 675.
- Meinzer, Oscar E.**
Lodgepole Valley, irrigation: 717.
- Merriam, John C.**
Ichthyosaur, occurrence: 414.
- Merrill, F. J. H.**
Spring Valley oil field: 593.
- Merrill, George P.**
Stones for building: 208.
- Miller, S. A.**
North American Mesozoic and Cenozoic: 123.
- Moodie, Roy L.**
Jurassic frog: 603.
- Mook, Charles Craig.**
Morrison formation: 700.
- Moore, R. B., and Schlundt, H.**
Thermal waters, Yellowstone Park: 527.
- Moudy, R. B., and Slosson, E. E.**
Laramie cement plaster: 314.
- Newberry, John S.**
Cretaceous and Tertiary plants: 25.
Eroding power of ice: 157.
Fortieth Parallel: 112.
Route to Pacific Ocean: 7.
Laramie group: 198.
Lignite and plant beds, western America: 66.
Notes along Northern Pacific R. R.: 160.
- Newell, Frederick Haynes.**
Public lands and their water supply: 243.
- Nickles, John M.**
Bibliography, North American geology, 1908: 499.
Bibliography, North American geology, 1909: 528.
Bibliography, North American geology, 1910: 555.
Bibliography, North American geology, 1911: 578.
Bibliography, North American geology, 1912: 608.
Bibliography, North American geology, 1913: 632.
Bibliography, North American geology, 1914: 654.
Bibliography, North American geology, 1915: 680.

- Nickles, J. M., and Weeks, F. B.**
Bibliography, North American
geology, 1906-1907: 498.
- O'Hara, C. C., and Darton, N. H.**
Aladdin folio: 398.
- Oliphant, F. H.**
Petroleum: 279.
- Osborn, Henry F.**
Armadillo, middle Eocene: 393.
Bathyopsis, Wind River: 621.
Coryphodon radians, skeleton:
282.
Eomorphus: 624.
Iguanodont dinosaur, epidermis:
521.
Memoir on *Loxolophodon*: 183.
Titanotheres: 628.
Trachodon integument: 602.
- Osborn, H. F., and Wortman, J. L.**
Mammals, Wasatch and Wind
River beds: 219.
- Parsons, Floyd W.**
Coal, northern Wyoming: 460.
Coal mines, southern Wyoming:
482.
- Peale, A. C.**
Green River district, geology:
113.
Juratrias, Idaho and Wyoming:
120.
Laramie, western Wyoming: 122.
Minerals, rocks, etc.: 51.
Montana, Idaho, Wyoming,
Utah, report: 53.
Thermal springs, Yellowstone
Park: 149.
World's geyser region: 154.
- Peck, Frederick B.**
Atlantosaurus and Titanotherium
beds: 394.
- Penfield, S. L., and Iddings, J. P.**
Rhyolite, Glade Creek: 207.
- Penfield, S. L., and Wells, H. L.**
Sperrylite: 352.
- Pepperberg, Leon J.**
Petroleum near outcrops of oil
sand: 659.
- Peterson, O. A.**
Vertebrate faunas, Miocene: 442.
- Platen, Paul.**
Fossil woods: 496, 526.
- Porro, Cesare.**
Oregon Basin, school sections:
613.
- Powell, John W.**
Uinta Mountains: 77.
- Putnam, Bayard T.**
Iron ores: 167.
- Read, Thomas Thornton.**
Alkali: 383.
Copper, Encampment district:
387.
Rare metals, Rambler: 372.
- Redwood, Boerton.**
Petroleum and its products:
437.
- Rich, John Lyon.**
Bishop conglomerate, southwest-
ern Wyoming: 545.
- Richards, R. W., and Gale, H. S.**
Phosphate, southwestern Wyo-
ming: 540.
- Richardson, James.**
Yellowstone Park: 64.
- Ricketts, Louis D.**
Geologist's report: 178, 194.
- Rigge, Joseph.**
Oil fields: 181.

- Riggs, Elmer S.**
Dinictis: 254.
Fossil hunting: 324.
Loup Fork beds, eastern Wyoming: 514.
- Ritter, Etienne A.**
Coal: 432.
- Rogers, Austin F.**
Covellite, Rambler mine: 560.
Lorandite, Rambler mine: 587.
- Rogers, A. P.**
Byron oil field: 611.
- Rogers, Henry D.**
Geology of United States: 13.
- Russell, Israel Cook.**
Existing glaciers, United States: 158.
Igneous intrusions, Black Hills: 264.
Nature of igneous rocks: 263.
- Rutley, Frank.**
Microscopic character of vitreous rocks: 184.
- St. John, O. H.**
Wind River district: 140.
- Salisbury, Rollin D.**
Glacial geology, Bald Mountain and Dayton quadrangles: 439.
Glacial geology, Cloud Peak and Ft. McKinney quadrangles: 441.
Bighorn Mountains: 440.
- Salisbury, R. D., and Blackwelder, E.**
Glaciation, Bighorn Mountains: 376.
- Sanford, Samuel, and Stone, R. W.**
Useful minerals, United States: 633.
- Schlundt, Herman, and Moore, R. B.**
Thermal waters, Yellowstone Park: 527.
- Schmeckebier, Lawrence F.**
Index, Hayden, King, Powell, Wheeler surveys: 381.
- Schrader, Frank C.**
Gold placers, Wind and Bighorn rivers: 637
- Schrader, F. C., et al.**
Useful minerals, United States: 711.
- Schuchert, Charles.**
Fossil fields expedition, Wyoming: 292.
- Schultz, Alfred R.**
Coal, Uinta County, 459.
Gold, Uinta County: 463.
LaBarge oil field: 487.
Lincoln County: 635.
Rock Springs coal field: 506, 538.
Sodium salts: 544.
Weathering of coal, Green River Basin: 535.
- Schultz, A. R., and Cross, W.**
Potash, Leucite Hills: 594.
- Scott, Samuel.**
Black Hills: 260.
- Scott, W. B.**
Macfarlane's Railway Guide: 196.
Uinta formation: 200.
Upper Eocene lacustrine formation: 182.
- Shaw, E. Wesley.**
Glenrock coal field: 503.
- Shufeldt, Robert Wilson.**
Bird remains: 625.
Gallinuloides wyomingensis: 671.

- Shurick, A. T.**
Diamondville coal field: 481.
- Siebenthal, Claude E.**
Bentonite, Laramie Basin: 481.
Coal, Laramie Basin: 458.
Gypsum, Laramie district: 435.
- Siebenthal, C. E., and Darton, N. H.**
Laramie Basin, geology and mineral resources: 500.
- Siebenthal, C. E., et al.**
Laramie and Sherman quadrangles: 529.
- Simmons, Jesse.**
Cambria coal field: 580.
Sheridan coal field: 583.
- Sinclair, William J.**
Bridger beds: 443.
Cody region: 599.
Glacial deposits, Cody: 598.
Tertiary, northwest Wyoming: 571.
Washakie volcanic ash formations: 515.
- Sinclair, W. J., and Granger, W.**
Eocene and Oligocene, Wind River and Bighorn basins: 572.
Tertiary, Bighorn Basin: 601.
- Slosson, E. E.**
Analysis, petroleum: 268.
Salt Creek petroleum: 250.
- Slosson, E. E., and Knight, W. C.**
Alkali lakes and deposits: 332.
Bonanza, Cottonwood, and Douglas oil fields: 371.
Dutton, Rattlesnake, Arago, and Oil Mountain oil fields: 337.
Newcastle oil field: 349.
Oil fields, Crook and Uinta counties: 289.
- Slosson, E. E., and Moudy, R. B.**
Laramie cement plaster: 314.
- Smith, E. Eggleston.**
Great Divide Basin coal field: 504.
- Smith, W. S. Tangier.**
Hartville folio: 366.
Igneous rocks, Aladdin quadrangle: 420.
Igneous rocks, Sundance folio: 421.
- Snow, E. P.**
Douglas Creek placers: 239.
Hartville iron deposits: 241.
Placer fields, Wyoming and Colorado: 240.
- Spencer, Arthur C.**
Atlantic gold district: 684.
Copper, Encampment district: 385.
North Laramie Mountains, geology: 683.
Mineral resources, Encampment district: 368.
- Springer, Frank.**
Jurassic crinoid: 522.
- Stanton, Timothy W.**
Bear River formation: 217.
Ceratops beds: 512.
Fox Hills formations: 546, 668.
Mesozoic fossils, Yellowstone Park: 306.
Morrison formation: 409.
- Stanton, T. W., and Knowlton, F. H.**
Laramie and related formations: 271.
- Stebinger, Eugene, and Ball, M. W.**
Little Snake River coal field, eastern part: 536.

- Sternberg, Charles H.
Converse County: 574.
Laramie beds, Converse County: 523.
Miocene, Wyoming: 618.
Trachodon, Laramie beds: 524.
- Stevenson, John J.
Lignite groups of West: 80.
- Stone, Ralph W.
Black Hills region: 579.
- Stone, R. W., *et al.*
The Overland Route: 656.
- Stone, R. W., and Lupton, C. T.
Powder River coal field: 537.
- Stone, R. W., and Sanford, S.
Useful minerals, United States: 633.
- Storrs, L. S.
Rocky Mountain coal field: 347.
- Taff, Joseph A.
Sheridan coal field: 539.
- Toula, F.
Yellowstone Park: 177.
- Trumbull, L. W.
Atlantic City gold district: 636.
Biennial report, 1913-1914: 655.
Big Muddy-Douglas oil fields, map: 661.
Cement plaster industry: 454.
Coal resources, Wyoming: 406.
Effect of structure: 694.
Light oil fields: 689.
Mining Laws: 609, 710.
Petroleum geology, Wyoming: 716.
Petroleum in granite: 692.
Prospective oil fields: 614.
Rock Springs uplift, map: 664.
Salt Creek oil field: 641.
Sulphur: 471.
Topographic map, Wyoming: 695.
- Union Pacific Railroad.
Fossil fields: 520.
- Vallat, B. W.
Iron ore, Sunrise: 467, 485.
Sunrise mine: 484.
- Van Horn, Frank B.
Phosphate: 508.
- Veatch, Arthur C.
Coal, Carbon County: 456.
Jurassic fossils: 446.
Laramie, definition and origin: 473.
Oil, Uinta County: 433.
Southwestern Wyoming: 452.
- Wadsworth, Martin E.
Rhyolite, Yellowstone Park: 151.
- Walcott, Charles D.
Cambrian fossils: 298.
Cambrian, North America: 211.
- Ward, Lester F.
Cretaceous and Tertiary, Colorado and Wyoming: 141.
Fossil cycadean trunks, Jurassic: 319.
Laramie group: 199.
Laramie flora: 164.
Mesozoic floras: 416.
- Washburne, Chester W.
Gas fields, Bighorn Basin: 486.
Coal fields, Bighorn Basin: 532.
- Weed, Walter H.
Copper mining in 1905: 434.
Diatom beds, Yellowstone Park: 201.
Formation of hot springs: 232.
Fossil forests, Yellowstone Park: 221.
Geysers: 202, 605.
Sedimentary rock: 261.
Siliceous sinter in thermal springs: 192.
Snowy Range, geology: 308.
Travertine and siliceous sinter: 193.

- Weed, W. H., and Iddings, J. P.**
Gallatin Mountains, geology: 303.
- Weeks, F. B.**
Bibliography, North American geology, 1892-1893: 247.
Bibliography, North American geology, 1892-1900: 342.
Index, North American geology, 1892-1900: 343.
Bibliography, North American geology, 1894: 248.
Bibliography, North American geology, 1895: 249.
Bibliography, North American geology, 1896: 265.
Bibliography, North American geology, 1897: 275.
Bibliography, North American geology, 1898: 288.
Bibliography, North American geology, 1899: 312.
Bibliography, North American geology, 1901: 344.
Bibliography, North American geology, 1902: 364.
Bibliography, North American geology, 1903: 380.
Bibliography, North American geology, 1904: 397.
Bibliography, North American geology, 1901-1905: 422.
Phosphate deposits: 489.
Reconnaissance in Jackson Basin: 291.
- Weeks, F. B., and Nickles, J. M.**
Bibliography, North American geology, 1906-1907: 498.
- Weeks, F. B., and Ferrier, W. F.**
Phosphate, western United States: 469.
- Waggaman, W. H.**
Phosphate deposits, south-western Wyoming: 541.
- Wegemann, Carroll H.**
Barber coal field: 610.
Powder River oil field: 591.
Salt Creek oil field: 567.
Sussex coal field: 584.
Wasatch fossils, Powder River: 707, 719.
- Wegemann, C. H., and Gale, H. S.**
Buffalo coal field: 534.
- Weller, Stuart.**
Starfish, Cretaceous of Wyoming: 417.
- Wells, Roger C.**
Potash, extraction from wyomingite: 708.
- Wells, H. L., and Penfield, S. L.**
Sperrylite: 352.
- Westgate, Louis G., and Branson, E. B.**
Cenozoic history, Wind River Mountains: 597, 617.
- White, Charles A.**
Bear River formation: 216.
Carboniferous fossils, Colorado: 118.
Cretaceous, North America: 212.
Fauna, Laramie group: 143.
Fossils, Laramie group: 145.
Fresh-water invertebrates: 169.
Jurassic, North America: 163.
Laramie group: 106.
Mesozoic division, report: 184.
Non-marine fossil mollusca: 147.
Northwestern Colorado region: 188.
Paleontology, Cenozoic and Mesozoic: 97.
Palaeontology, Plateau province: 82.
Paleontology, Wyoming and Idaho: 124.

- | | |
|---|--|
| <p>Relations of Laramie: 183.
Tertiary mollusca, Colorado,
Utah, and Wyoming: 146.
Triassic fossils, southeastern Idaho:
144.</p> <p>Whitfield, Robert Parr.
Toroedo-like shell, Laramie group:
363.</p> <p>Wieland, George R.
Araucarias from Cretaceous: 548.
Fossil cycads: 703.</p> <p>Williston, S. W.
American amphicoelian crocodiles: 445.
Hallopus, Baptanodon, and Atlantosaurus beds: 413.
Jurassic dinosaurs: 104.
Laramie Cretaceous: 355.
New armored dinosaurs: 412.
New reptiles, Triassic: 396.
Sacrum of Morosaurus: 285.
Triassic vertebrates: 418.</p> <p>Winchester, Dean E.
Lost Springs coal field: 582.
Oil shale, northwestern Colorado
region: 690.</p> <p>Winchester, D. E., and Woodruff, E. G.
Coals, Wind River regions: 585.</p> | <p>Wolff, John E.
Chlorite, northern Wyoming: 586.</p> <p>Woodruff, Elmer Grant.
Bighorn Basin coal field: 502, 533.
Lander coal field: 457.
Lander oil field: 565.
Sulphur, Cody: 490.
Sulphur, Thermopolis: 509.</p> <p>Woodruff, E. G., and Winchester, D. E.
Coals, Wind River region: 585.</p> <p>Wortman, J. L.
Hyracotherium and allied perisodactyls: 255.</p> <p>Wortman, J. L., and Earle, C.
Tapir, ancestors of: 228.</p> <p>Wyoming Legislature.
Mineral resources: 453.</p> <p>Ziegler, Victor.
Byron oil and gas field: 714.
Oregon Basin gas field: 715.
Pilot Butte oil field: 691.</p> <p>Zirkel, F.
Microscopic petrography survey:
90.</p> |
|---|--|

CROSS INDEX

(Numbers refer to entries in the Bibliography.)

- Aladdin folio: Darton and O'Harra, 398.
- Albany County.**
Alkali: Knight and Slosson, 392; Read, 383.
Bentonite: Siebenthal, 431.
Coal: Siebenthal, 458.
Cement plaster: Trumbull, 454; Slosson and Moudy, 314.
Central Great Plains: Darton, 399.
Copper, Laramie Peak: Beeler, 388.
Covellite. Rambler mine: Rogers, 560.
Gold, Douglas placers: Snow, 239.
Gypsum: Siebenthal, 435.
Laramie Basin: Darton and Siebenthal, 500.
Laramie and Sherman quadrangles: Darton *et al.*, 529.
Lorandite, Rambler mine: Rogers, 587.
Mineral resources: Beeler, 423.
North Laramie Mountains: Spencer, 683.
Platinum, Rambler mine; Emmons, 373; Kemp, 391.
Rare metals, Rambler mine: Read, 372; Knight, 351; Wells and Penfield, 352.
Red Beds: Knight, 357; Darton, 474.
Sodium salts: Schultz, 544.
- Algae.**
Teton Mountains: Blackwelder, 670.
- Alkali lakes and deposits: Read, 383; Knight and Slosson, 392.
- Amphibia.**
Jurassic frog: Moodie, 603.
- Angistorhinus.**
Phytosauria: Mehl, 620.
- Analyses, Chemical.**
Absarokite, 296.
Alkali, 392.
Alunite, 708.
Andesite, 299.
Aplite, 299, 300.
Augite-vosgesite, 421.
- Analyses, Chemical—Continued.**
Banakite, 296.
Basalt, 297, 299.
Bentonite, 382, 402, 431, 500, 510.
Brine, 382, 399.
Cement, 403.
Clay, 431.
Coal, 347, 367, 384, 405, 406, 456, 457, 459, 500, 502, 505, 506, 532, 533, 534, 535, 536, 537, 538, 539, 579, 581, 582, 584.
Dacite-porphry, 304.
Diorite, 299, 385.
Dolomite, 619.
Diopside, 274.
Gabbro, 299.
Gypsum, 382, 399, 426, 435, 500, 529.
Hornblende-mica-andesite-porphry, 304.
Iron ore, 399, 465.
Kersantite, 304.
Leucitite, 274.
Limestone, 399, 403, 455, 500, 510.
Loess, 666.
Madupite, 274.
Marble, 403.
Missourite, 274.
Monzonite, 299.
Norite, 385.
Oil shale, 690.
Orendite, 274.
Natural gas, 688, 713.
Petroleum, 250, 268, 337, 350, 371, 688, 713.
Phlogopite, 274.
Phonolite porphyry, 451.
Phosphate rock, 540, 541.
Portland cement, 403.
Rhyolite, 307.
Rock salt, 543.
Shale, 403, 510.
Shoshonite, 296.
Soda, 280, 399, 544.
Sodium sulphate, 500.
Titano-magnetite, 354.
Trachytic rhyolite, 295.
Volcanic ash, 500, 529.
Water, 399, 500, 509, 529, 717.
Wyomingite, 274, 708.
- Anticlines in Bighorn Basin:** Hewett and Lupton, 713.
Anticlines in central Wyoming: Hares, 687.

Archean. *See* Pre-Cambrian.

Asbestos.

Casper Mountain: Beeler, 557.
Mineral resources: Jamison, 556.
Wyoming: Lakes, 501; Beeler, 530;
Barrow, 531.
Wyoming mines in 1907: Beeler,
480.
Atlantic gold district: Trumbull, 636;
Spencer, 684.

Asphalt.

Mineral resources: Jamison, 556.

Aves (birds).

Fossil feathers: Shufeldt, 625.
Gallinuloides prentici from Wyom-
ing Eocene: Loomis, 449.
Gallinuloides wyomingensis: Shu-
feldt, 671.
Bald Mountain and Dayton quad-
rangles: Darton, 424.
Basin and Greybull oil and gas fields:
Hintze, 660; Lupton, 688.

Bentonite.

Bighorn Basin: Fisher, 425, 426.
Black Hills region: Darton, 510.
Central Great Plains: Darton, 399.
Laramie Basin: Darton and Sieben-
thal, 500; Siebenthal, 431.
Laramie and Sherman quadrangles:
Darton *et al.*, 529.
Mineral resources: Jamison, 556.
Newcastle folio: Darton, 382.
Owl Creek Mountains: Darton,
430.
Wyoming: Fisher, 402.

Bibliography.

Basin and Greybull oil and gas
fields: Hintze, 660.
Black Hills, geology: Darton, 331.
Cement materials of United States:
Eckel, 403.
Cycadeoidea: Wieland, 703.
Fremont County: Jamison, 564.
Lance formation: Niobrara Coun-
ty, Lull, 672.
Morrison formation: Mook, 700.
North American geology, 1886:
Darton, 172.
North American geology, 1887-
1889, inclusive: Darton, 204.
North American geology, 1890:
Darton, 205.
North American geology, 1891:
Darton, 215.
North American geology, 1732-
1891: Darton, 246.

Bibliography—Continued.

North American geology, etc.,
1892-1893: Weeks, 247.
North American geology, etc.,
1894: Weeks, 248.
North American geology, etc.,
1895: Weeks, 249.
North American geology, etc.,
1896: Weeks, 263.
North American geology, etc.,
1897: Weeks, 275.
North American geology, etc.,
1898: Weeks, 288.
North American geology, etc.,
1899: Weeks, 312.
North American geology, etc.,
1892-1900, inclusive: Weeks, 342.
North American geology, etc., (In-
dex), 1892-1900, inclusive:
Weeks, 343.
North American geology, etc.,
1901: Weeks, 344.
North American geology, etc.,
1902: Weeks, 364.
North American geology, etc.,
1903: Weeks, 380.
North American geology, etc.,
1904: Weeks, 397.
North American geology, etc.,
1901-1905, inclusive: Weeks, 422.
North American geology, 1906-
1907: Weeks and Nickles, 498.
North American geology, 1908:
Nickles, 499.
North American geology, 1909:
Nickles, 528.
North American geology, 1910:
Nickles, 555.
North American geology, 1911:
Nickles, 578.
North American geology, 1912:
Nickles, 608.
North American geology, 1913:
Nickles, 632.
North American geology, 1914:
Nickles, 654.
North American geology, 1915:
Nickles, 680.
Oil shale, Green River Basin: Win-
chester, 690.
Petroleum geology of Wyoming:
Trumbull, 716.
Salt Creek oil field: Wegemann,
567; Trumbull, 641.
Sodium salts: Schultz, 544.
Southwestern Wyoming: Veatch,
52.

Bighorn Basin.

Coal: Fisher, 384; Woodruff, 502,
533; Washburne, 532.

Bighorn Basin—Continued.

Gas: Washburne, 486.
Geology: Fisher, 425.
Mineral resources: Fisher, 426.
Oil, southern part: Hewett and Lupton, 688.
 Basin field: Hintze, 660; Lupton, 688.
Bonanza and Cottonwood fields: Knight and Slosson, 371.
Byron field: Havenor, 563;
 Rogers, 611; Ziegler, 714.
Grass Creek field: Hintze, 662.
Greybull field: Hintze, 660.
Little Buffalo Basin: Hintze, 663.
Oregon Basin: Ziegler, 715.
Stratigraphy: Lupton, 696.
Tertiary deposits: Sinclair and Granger, 601.

Big Horn County.

Bald Mountain and Dayton quadrangles: Darton, 424.
Bighorn Basin: Fisher, 425, 426.
Bighorn Mountains: Darton, 428.
Coal, Bighorn Basin: Fisher, 384;
 Washburne, 532; Woodruff, 533.
Cloud Peak and Fort McKinney quadrangles: Darton, 429.
Gas, Bighorn Basin: Washburne, 486.
Oil, Basin: Hintze, 660; Lupton, 688.
 Bonanza and Cottonwood fields: Knight and Slosson, 371.
Byron: Havenor, 563; Rogers, 611; Ziegler, 714.
Greybull: Hintze, 660.
Anticlines: Hewett and Lupton, 713.

Bighorn Mountains.

Bald Mountain and Dayton quadrangles: Darton, 424.
Cloud Peak and Fort McKinney quadrangles: Darton, 429.
Central Great Plains: Darton, 399.
Dolomite: Blackwelder, 619.
Drainage modifications: Mansfield, 438.
Geology: Carpenter, 101; Darton, 427, 428, 472.
Glacial geology: Matthes, 315; Salisbury and Blackwelder, 376;
 Salisbury, 439, 440, 441.
Gypsum: Lupton and Condit, 686.
Mineral resources: Chance, 206;
 Darton, 428.

Bighorn Mountains—Continued.

Northwest Wyoming: Eldridge, 235.
Ordovician: Darton, 447.
Stratigraphy: Darton, 392; Beecher, 253.
Big Muddy dome: Barnett, 638.
Black Hills region: Darton, 331, 510.
Bonanza, Cottonwood and Douglas oil fields: Knight and Slosson, 371.

Brachiopoda.

Fauna of phosphate beds, Park City formation: Girty, 552.
Buffalo coal field: Gale and Wege-mann, 534.

Building Stones.

Geologist's report; Ricketts, 194.
Wyoming mines: Beeler, 480.
Byron oil field: Havenor, 563; Rogers, 611; Ziegler, 714.

Cambrian.

Carroll to Yellowstone Park: Dana and Grinnell, 91.
Fort Leavenworth to Bryan's Pass: Engelmann, 11.
Fortieth Parallel Survey: Hague and Emmons, 93; Newberry, 112.
Macfarlane's Railway guide:
 Hague, 114; Scott, 196.
Missouri, headwaters of: Hayden, 18.
Nebraska, etc., map: Hayden, 17.
North America, geology: Marcou, 12.
Northwestern Wyoming: Comstock, 72; Eldridge, 235.
Paleontologic report: Meek, 48.
Rocky Mountains, eastern margin: Hayden, 21.

Primordial of: Hayden, 19.

Sedimentary rocks: Weed, 261.

Stratigraphy.

Absaroka folio: Hague, 290.

Aladdin folio: Darton and O'Harra, 398.

Bald Mountain and Dayton quadrangles: Darton, 424.

Bighorn Basin: Fisher, 425.

Bighorn Mountains: Carpenter, 101; Darton, 427.

Black Hills region: Meek and Hayden, 16; Darton, 331.

Central Great Plains: Darton, 399.

Cambrian—Continued.

Cloud Peak and Fort McKinney quadrangles: Darton, 429.
Douglas oil field: Jamison, 589.
Fremont County: Jamison, 564.
Gallatin Mountains: Iddings and Weed, 303.
Owl Creek Mountains: Darton, 430.
Paleozoic and Mesozoic, central Wyoming: Darton, 493.
Sundance folio: Darton, 400.
Sweetwater district: Endlich, 116.
Territorial Survey reports.
Colorado and New Mexico: Hayden, 92.
Colorado and Wyoming: White, 188.
Montana and Wyoming, map: Hayden and Peale, 36.
Snake River division, report 1872: Bradley, 55.
Survey of Territories: Hayden, 20, 94, 100.
Teton Range, geology: Iddings, 309.
Uinta Mountains: Powell, 77.
United States, map: Marcou, 5; Hitchcock and Blake, 52; McGee, 159.
Warren's geography: Brewer, 195.
Western Wyoming: Comstock: 57.
Wyoming and Colorado: Hayden, 31.
Yellowstone and Missouri rivers, exploration: Hayden, 24.
Yellowstone Park: Bradley, 63; Holmes, 148.

Campbell County.

Central Great Plains: Darton, 399.
Coal, Little Powder River field: Davis, 581.
Powder River field: Stone and Lupton, 537.

Carbon County.

Alkali: Knight and Slosson, 332.
Coal, east-central: Veatch, 456.
Little Snake River field: Ball, 505; Ball and Stebinger, 536.
Copper, Encampment district: Spencer, 368, 385; Lakes, 386; Reed, 987; Beeler, 407.
In 1905: Weed, 434.
Gold, Fourmile placers: Snow, 240.

Carbon County—Continued.

Hanna Basin: Bowen, 698; Hares, 699.
Laramie Basin: Darton and Siebenthal, 500.
Sodium salts: Schultz, 544.

Carboniferous.

Carroll to Yellowstone Park: Dana and Grinnell, 91.
Fort Leavenworth to Bryan's Pass: Engelmann, 11.
Fortieth Parallel Survey: Hague and Emmons, 93; Newberry, 112.
Gallatin Mountains: Iddings and Weed, 303.

Geologist's report: Ricketts, 194.
Green River district: Peale, 113.
Macfarlane's Railway guide: Hague, 114.

Missouri, headwaters of: Hayden, 18.

Northwestern Wyoming: Comstock, 72; Eldridge, 235.

North America, geology: Marcou, 6, 12.

Paleontology.

Amsden fauna: Blackwelder, 627.
Colorado fossils: White, 118.
Colorado Plateau province: Gilbert, 81.
Embar fauna: Blackwelder, 627.
Paleontologic report: Meek, 48.

Plateau province: White, 82.

Rocky Mountains: division: Emmons, 156.

Formations: Hayden, 21.

Front Range: Hayden, 73.

Geology: Hills, 209.

Primordial: Hayden, 19.

Scenery: Hayden, 29.

Route to Pacific Ocean: Newberry, 7.

Salt Lake expedition: Hall, 4.

Stratigraphy.

Absaroka folio: Hague, 290.
Archean of Wasatch Mountains: Geikie, 129.
Bald Mountain and Dayton quadrangles: Darton, 424.
Bighorn Basin: Fisher, 425; Hewett and Lupton, 713.
Bighorn Mountains: Carpenter, 101; Darton, 427.
Black Hills region: Darton, 331, 510.

Carboniferous—Continued.

Black Hills, Bighorn Mountains, and Rocky Mountain Front Range: Darton, 392.
Central Wyoming: Hares, 687.
Cloud Peak and Fort McKinney quadrangles: Darton, 429.
Douglas oil field: Barnett, 639; Jamison, 589.
Embar formation: Branson, 704.
Embar and Chugwater formations: Condit, 697.
Fremont County: Jamison, 564.
Jurassic, Freezeout Hills: Logan, 326.
Jura-Trias, Idaho and Wyoming: Peale, 120.
Lander oil field: Jamison, 564; Woodruff, 565.
Laramie Basin: Darton and Siebenthal, 500.
Laramie Plains Red Beds: Knight, 357.
Laramie-Sherman quadrangle: Darton, *et al.*, 529.
Lincoln County: Schultz, 635.
Owl Creek Mountains: Darton, 430.
Paleozoic and Mesozoic, central Wyoming: Darton, 493.
Permian, North America: Dutton, 128.
Red beds, southeastern Wyoming: Knight, 701.
Salt River Range: Mansfield, 693.

Supermetamorphism and volcanism: Comstock, 170.

Territorial Survey reports.

Colorado and New Mexico: Hayden, 22.
Missouri Valley, geology: Hayden, 34.
Montana and Wyoming, map: Hayden and Peale, 36.
Montana, Idaho, Wyoming and Utah: Peale, 53; Hayden, 54.
Montana and adjacent Territories: Hayden, 35.
Snake River division: Bradley, 55.
Snake River, sources: Hayden and Bradley, 38.
Survey of Territories: Hayden, 20, 39, 40, 94, 100.
Wyoming and Idaho: Hayden, 117.

Carboniferous—Continued.

Teton Range: Iddings, 309.
Sweetwater district: Endlich, 116.
Uinta Mountains: Marsh, 32; Powell, 77.
Union Pacific Railroad reconnaissance: Bannister, 56.
United States map: Marcou, 5; Blake, 8; Hitchcock and Blake, 52; McGee, 159.
Warren's geography: Brewer, 195.
Western Wyoming: Comstock, 57; Gale and Richards, 540.
Wind River district: St. John, 140.
Wyoming and Colorado: Hayden, 31.
Yellowstone Park: Holmes, 126; 148.
Yellowstone and Firehole rivers; geysers: Hayden, 50.
Yellowstone and Missouri rivers: Hayden, 24.

Cement and Cement Materials.

Cement plaster: Knight and Slosson, 314; Trumbull, 454.
Portland cement: Ball, 455.
United States: Eckel, 403.
Central Great Plains, geology and water resources: Darton, 399.

Cephalopoda. *See also Mollusca.*

Park City formation phosphate beds fauna: Girty, 552.

Chemical Analyses. *See Analyses.*

Clay.

Bighorn Basin: Fisher, 426.
Laramie Basin: Siebenthal, 431.

Coal Fields.

Bald Mountain and Dayton quadrangles: Darton, 424.
Barber field: Wegemann, 610.
Bighorn Basin: Fisher, 384, 425, 426; Woodruff, 502, 533; Washburne, 532.
Bighorn Mountains: Darton, 427, 428.
Black Hills region: Darton, 405, 510.
Buffalo field: Gale and Wegemann, 534.
Cambria field: Simmons, 580.
Carbon County: Veatch, 456.
Coal: Ritter, 432.
Coal and coal measures: Knight, 238.
Coal resources: Trumbull, 406.
Diamondville field: Shurick, 481.
Fremont County: Jamison, 564.

Coal Fields—Continued.

Geologist's report: Ricketts, 178, 194.
Glenrock field: Shaw, 503.
Great Divide Basin field: Smith, 504.
Green River Basin: Schultz, 535.
Lander field: Woodruff, 457.
Laramie Basin: Siebenthal, 458.
 Darton and Siebenthal, 500.
Lincoln County: Schultz, 635.
Little Powder field: Davis, 581.
Little Snake River field, western part: Ball, 505.
Little Snake River field, eastern part: Ball and Stebinger, 536.
Lost Spring field: Winchester, 582.
Mineral resources: Knight, 222; Jamison, 556.
Northern Wyoming: Parsons, 460.
Northeastern Wyoming: Kennedy, 461.
Owl Creek Mountains: Darton, 430.
Powder River field: Stone and Lupton, 537.
Rocky Mountain fields: Storrs, 347.
Rock Springs field: Schultz, 506, 538.
Sheridan field: Taff, 539.
Southern Wyoming: Parsons, 482.
Sussex field: Wegemann, 584.
Sweetwater County: Schultz, 535.
Uinta County: Schultz, 459;
 Knight 367; Veatch, 433.
Uinta County: Knight, 367;
 Veatch, 433; Schultz, 459.
Wind River region: Woodruff and Winchester, 585.
Wyoming: Knight, 238.
Wyoming Mines: Beeler, 480.

Converse County.

Central Great Plains: Darton, 399.
Converse County: Sternberg, 523, 574.
Coal, Glenrock field: Shaw, 503.
 Lost Spring field: Winchester, 582.
Sussex field: Wegemann, 584.
Copper, Laramie Peak district: Beeler, 388.
Laramie beds: Sternberg, 523.
North Laramie Mountains: Spencer, 683.
Oil, Big Muddy field: Barnett, 638; Trumbull, 661.
 Douglas field: Jamison, 589;
 Knight and Slosson, 371.
Trachodon from Laramie beds: Sternberg, 524.

Copper.

Bighorn Mountains: Darton, 428.
Copper: Weed, 434.
Encampment district: Spencer, 368, 385; Lakes, 386; Beeler, 407.
Encampment and Pearl districts: Read, 387.
Geologist's report: Aughey, 166; Ricketts, 178, 194.
Hartville uplift: Ball, 462.
Laramie Peak district: Beeler, 388.
Sunlight district: East, 561.
Wyoming mines: Beeler, 480.
Wyoming: Henderson, 657, 685.

Correlation.

Bighorn Basin: Lupton, 696.
Black Hills, Bighorn Mountains and Rocky Mountain Front Range: Darton, 392.
Cambrian of North America: Walcott, 211.
Central Wyoming: Hares, 687.
Ceratops beds: Stanton, 512.
Cretaceous and Eocene: Hares, 665.
Cretaceous of North America: White, 212.
Cretaceous and Tertiary, Hanna and Powder River basins: Hares, 699.
Cretaceous, Wyoming and Colorado: Heroy, 667.
Eocene, Wyoming and New Mexico: Granger, 647.
Fort Union, Powder River Basin: Wegemann, 707.
Fox Hills formation: Stanton, 668.
Fox Hills sandstone and Lance formation: Stanton, 546.
Hanna Basin: Bowen, 698.
Morrison formation: Mook, 700.

Cretaceous.

Artesian borings: Hayden, 95.
Carroll to Yellowstone Park: Dana and Grinnell, 91.
Coal: *See also* Coal Fields.
 Bitter Creek series: Cope, 42.
 Coals and coal measures: Knight, 238.
Formations: Am. Jour. Sci. 45.
Regions of America: Macfarlane, 96.
Colorado Plateau province: Gilbert, 81.
Fort Leavenworth to Bryan's Pass: Engelmann, 11.
Fortieth Parallel survey: Hague and Emmons, 93; King, 99.

Cretaceous—Continued.

Gallatin Mountains: Idings and Weed, 303.
Geological horizons as determined by fossils: Marsh, 213.
Geological report: Ricketts, 178.
Green River district: Peale, 113.
Lignite: Lesquereux, 61, 67, 87, 88, 107; Cope, 69; Dana, 78; Hayden, 79; Stevenson, 80.
Macfarlane's Railway Guide: Hague, 114; Scott, 196.
Minerals, rocks, etc.: Peale, 51.
Missouri, sources of: Meek and Hayden, 9.
North America, Cretaceous age: White, 212.
Flora: Lesquereux, 84.
Geology: Marcou, 6, 12.
Northwestern Wyoming: Comstock, 72; Eldridge, 235.
Oil: *See also Petroleum.*
Prospecting for: Lakes, 348.
Paleontology.
Baena, Laramie beds: Hay, 359.
Carboniferous fossils: White, 118.
Ceratops beds: Hatcher, 223.
Ceratopsidae, skull: Marsh, 190, 197.
Cretaceous and Tertiary floras: Lesquereux, 142.
Dinocerata: Marsh, 161.
Dinosaurs, Rocky Mountains: Lakes, 119.
Fossils, Laramie group: White, 145.
Fossil mollusca, non-marine, North America: White, 147.
Fossils of upper Missouri: Gabb, 83.
Fossils west of Greeley and Evans, Colo.: Meek, 75.
Gleichenia: Knowlton, 626.
Hallopus, Baptanodon and Atlantosaurus beds of Marsh: Williston, 413.
Hay Creek plants: Fontaine, 293.
Lance fauna: Lull, 672.
Loxolophodon and Uintatherium beds: Osborn, 183.
Mesozoic and Cenozoic: Miller, 123; White, 184.
Morrison fauna: Mook, 700; Knowlton, 706.
Plateau province: White, 82.
Triassic fossils: White, 144.
Vertebrata of Cretaceous of West: Cope, 70.
Vertebrate paleontology: Cope, 71.

Cretaceous—Continued.

Rocky Mountains, Coal fields: Storrs, 347.
Division: Emmons, 156.
Eastern margin: Hayden, 21.
Front Range: Hayden, 73.
Geology: Hills, 209.
Lignite: Lesquereux, 68.
Scenery: Hayden, 29.
Shoshone River section: Hewett, 642.
Salt Lake Valley expedition: Hall, 4.
Sedimentary rocks: Weed, 261.
Stratigraphy.
Age of certain beds: Lesquereux, 58.
Bear River formation: White, 216; Stanton, 217.
Bighorn Basin: Fisher, 425; Woodruff, 502; Washburne, 532; Hewett, 642; Lupton, 688, 696.
Bighorn Mountains: Carpenter, 101; Darton, 427.
Black Hills: Chance, 206; Darton, 392, 331, 510; Stone, 579.
Carboniferous fossils: White, 118.
Central Wyoming: Hares, 665, 687.
Cretaceous of West: Cope, 76.
Encampment district: Spencer, 385.
Folios. *See Folios:* U. S. G. S. quadrangles.
Freezeout Hills: Logan, 326.
Frontier formation fossil flora: Knowlton, 718.
Hanna Basin: Bowen, 698.
Jurassic: Loomis, 340.
Lance Creek beds: Hatcher, 377.
Lance fauna: Lull, 672.
Laramie Basin: Darton and Siebenthal, 500.
Laramie group: White, 106, 183; Bannister, 121; Peale, 122; Newberry, 198; Veatch, 473.
Lincoln County: Schultz, 635.
Morrison formation: Knowlton, 706.
North Laramie Mountains: Spencer, 683.
Owl Creek Mountains: Darton, 430.
Paleozoic and Mesozoic central Wyoming: Darton, 493.

Cretaceous—Continued.

Powder River Basin: Wege-mann, 707.
Southern Wyoming: Heroy, 667.
Sweetwater district: Endlich, 116.
Territorial Survey reports.
Colorado and New Mexico: Hayden, 22.
Montana, Idaho, Wyoming, Utah: Peale, 53.
Montana and adjacent Territories: Hayden, 35.
Montana and Wyoming, map: Hayden and Peale, 36.
Second annual report, Wyoming: Hayden 20.
Snake River division: Bradley, 55; Hayden and Bradley, 38.
Survey of Territories: Hayden, 39, 40, 94, 100, 117.
Teton Range: Iddings, 309.
Uinta County: Knight, 367; Veatch, 438; Schultz, 459.
Uinta Mountains: Marsh, 32; Powell, 77.
Union Pacific R. R. reconnaissance: Bannister, 56.
United States map: Marcou, 5; Blake, 8; McGee, 159.
Folios. *See Folios, U. S. G. S. Quadrangles.*
Warren's Geography: Brewer, 195.
Western Wyoming: Comstock, 57.
Wind River district: St. John, 140; Woodruff and Winchester, 585; Ziegler, 691.
Wyoming and Colorado: Hayden, 23, 31.
Yellowstone Park: Newberry, 25; Hines, 26; Holmes, 148; Hague, 185, 260.
Yellowstone and Firehole rivers: Hayden, 50.
Yellowstone and Missouri rivers: Hayden, 24.

Crook County.

Aladdin folio: Darton and O'Harrar, 398.
Black Hills region: Meek and Hayden, 16; Darton, 331, 510; Hovey, 338; Stone, 579.
Devil's Tower folio: Darton and O'Harrar, 451.
Central Great Plains: Darton, 399.
Igneous rocks, Sundance folio: Smith, 421.
Newcastle folio: Darton, 382.

Crook County—Continued.

Oil, Belle Fourche field: Knight and Slosson, 289.
Moorcroft field: Barnett, 640.
Sodium salts: Schultz, 544.

Devonian.

Fortieth Parallel survey: Hague and Emmons, 93; Newberry, 112.
Fort Leavenworth to Bryan's Pass: Engelmann, 11.
Gallatin Mountains: Iddings and Weed, 303.
Macfarlane's Railway guide: Hague, 114; Scott, 196.
Nebraska, map: Hayden, 17.
North America, geology: Marcou, 12.
Northwestern Wyoming: Comstock, 72.

Paleontology.

Plateau province: White, 82.
Report, Wyoming: Meek, 48.
Rocky Mountains, primordial: Hayden, 19.
Salt Lake Valley, geology and paleontology: Hall, 4.

Stratigraphy.

Absaroka folio: Hague, 290.
Black Hills: Darton, 331.
Jurassic stratigraphy: Loomis, 340.
Lignite group of West: Stevenson, 80.
Teton Range: Iddings, 309.
Supermetamorphism: Comstock, 170, 174.
Sweetwater district: Endlich, 116.
Territorial Survey reports.
Montana and adjacent Territories: Hayden, 35.
Montana, Idaho, etc.: Peale, 53.
Snake River region: Bradley, 55.
Uinta Mountains: Powell, 77.
Western Wyoming: Comstock, 57.

Dinosauria. *See also Reptilia.*

Allosaurus: Matthew, 495.
Armored dinosaur: Williston, 412.
Astrodon in *Atlantosaurus* beds: Hatcher, 378.
Brontosaurus: Hatcher, 361.
Camptosaurus, restoration: Marsh, 236.
Ceratops beds: Hatcher, 223.
Ceratopsidae, skull: Marsh, 190.

Dinosauria—Continued.

Claosaurus: Marsh, 218.
Dinosaur trachodon annexens: Lucas, 395.
Diplodocus: Hatcher, 321; Holland, 320.
Hallopus, Baptanodon and Atlantosaurus beds (Marsh): Williston, 413.
Iguanodont dinosaur, epidermis: Osborn, 521.
Jurassic dinosauria: Williston, 104; Gratacap, 362.
Lance formation: Gilmore, 676.
Morosaurus, sacrum: Williston, 285.
Osteology: Gilmore, 648.
Rocky Mountains: Lakes, 119.
Trachodon integument: Osborn, 602.
Transition beds: Cope, 59.

Dolomite.

Bighorn dolomite, origin: Blackwelder, 619.
Douglas oil field: Jamison, 589; Barnett, 639; Trumbull, 661.

Drainage Changes.

Black Hills and Bighorn Mountains: Mansfield, 438.
Dutton, Rattlesnake, Arago, Oil Mountain and Powder River oil fields; Knight and Slosson, 337.

Dynamic and Structural.

Central Wyoming: Hares, 687.
Disruption of rock by lightning: Barnett, 491.
Gros Ventre slide: Blackwelder, 595.
Gypsum and salt deposits, origin: Branson, 658.
Yellowstone Park, silica and lime deposition: Darton, 806.

Economic geology. *See* Folios: U. S. G. S. quadrangles. *See also* various economic products.

Eocene. *See* Tertiary.

Eohippus from Wyoming: Granger, 576.

Eruptive rocks. *See* Igneous and volcanic rocks.

Faulting.

Bighorn Mountains: Darton, 427.

Folios. U. S. G. S. quadrangles.

Yellowstone National Park: Hague, 257.
Absaroka: Hague, 290.
Hartville: Smith, 366.
Newcastle: Darton, 382.
Sundance: Darton, 400.
Aladdin: Darton and O'Hara: 398.
Bald Mountain and Dayton: Darton, 424.
Cloud Peak-Ft. McKinney: Darton, 429.
Devil's Tower: Darton and O'Hara, 451.
Laramie-Sherman: Darton, *et al.*, 529.

Fremont County.

Bridger beds: Sinclair, 443.
Coal, Great Divide Basin field: Smith, 504.

Lander fields: Woodruff, 457.
Wind River fields: Woodruff and Winchester, 585.
Gold, Atlantic district: Trumbull, 636; Spencer, 684.
Placers, Wind and Bighorn rivers: Schrader, 637.
South Pass: Baeler, 389, 370, 483.

Owl Creek Mountains: Darton, 430.
Paleozoic and Mesozoic: Darton, 493.

Petroleum, central Wyoming: Hares, 687.
Dutton field: Knight and Slosson, 337.
Fremont County: Jamison, 564.
In granite: Trumbull, 692.
Lander fields: Woodruff, 565; Breger, 566.
Pilot Butte field: Ziegler, 691.
Phosphate: Breger, 566.
Sweetwater mining district: Knight, 333.

Gas fields of the Bighorn Basin: Washburne, 486.

Gallinuloides wyomingensis: Shufeldt, 671.

Gastropoda. *See also* Mollusca.

Park City formation: Girty, 552.
Tertiary land shells: Cockerell, 650.
Tertiary of West: Cockerell, 673.

Geochemistry.

Potash, extraction from Wyomingite: Wells, 708.

Geologic Formations.

Adaville formation, Cretaceous: Schultz, 459, 487, 635.
Almagre beds, Tertiary: Granger, 647.
Almy formation, Tertiary: Schultz, 459, 487.
Almy formation, Eocene: Schultz, 635.
Amsden formation, Carboniferous: Darton, 392, 399, 427, 430, 447, 493; Fisher, 425; Jamison, 564; Blackwelder, 627.
Amsden formation, Pennsylvanian and Mississippian: Blackwelder, 569.
Ankareh formation: Schultz, 635.
Ankareh formation, Triassic: Girty, 552; Mansfield, 693.
Ankareh shale, Triassic or Carboniferous: Gale and Richards, 540; Blackwelder, 569.
Arikaree formation, Miocene: Darton *et al.*, 529.
Arikaree formation, Neocene Tertiary: Smith, 366.
Arikaree formation, Tertiary: Adams, 345.
Aspen formation, Cretaceous: Schultz, 459, 487, 635.
Atlantosaurus beds: Logan, 326.
Atlantosaurus beds, Jurassic-Cretaceous: Williston, 413.
Baptano-Jon beds, Jurassic: Williston, 413.
Basin shale, Cretaceous: Hintze, 660, 663.
Bearpaw shale, Cretaceous: Washburne, 532.
Bear River formation, Cretaceous: Stanton, 217; Veatch, 433; Schultz, 459, 487, 635; Gale and Richards, 540; Blackwelder, 569.
Beckwith formation, Jurassic, Cretaceous: Gale and Richards, 540; Breger, 543; Blackwelder, 569.
Beckwith formation, Jurassic: Schultz, 635.
Benton formation, Cretaceous: Veatch, 456; Darton, 493; Darton and Siebenthal, 500; Jamison, 592; Hintze, 663; Ziegler, 714.
Benton group, Cretaceous: Darton, 392, 399, 400.
Benton shale, Cretaceous: Darton *et al.*, 529; Darton, 683; Jamison, 564; Wegemann, 567, 591; Barnett, 638, 639.
Benton (lower) shale, Cretaceous: Hintze, 660.

Geologic Formations—Continued.

Benton (upper) shale, Cretaceous: Hintze, 660.
Bighorn dolomite, Ordovician and Silurian: Blackwelder, 619.
Bighorn limestone, Ordovician: Darton, 392, 399, 424, 427, 429, 430, 447, 493; Fisher, 425; Jamison, 564; Blackwelder, 569.
Bishop (?) conglomerate, Tertiary: Ball and Stebinger, 536; Schultz, 538; Rich, 545.
Black Rock cycle, Pleistocene: Blackwelder, 666.
Brazer limestone, Carboniferous: Mansfield, 693.
Bridger formation, Tertiary: Veatch, 433; Sinclair, 515.
Bridger formation, Eocene: Matthew, 518; Sinclair and Granger, 572.
Bridger group, Tertiary: Sinclair, 443.
Brule clay, Oligocene: Darton *et al.*, 529.
Brule formation, Tertiary: Adams, 345.
Brule formation (Oligocene) Tertiary: Smith, 366.
Buffalo stage, Pleistocene: Blackwelder, 666.
Bull Lake stage, Pleistocene: Blackwelder, 666.
Carlie formation, Cretaceous: Darton, 331, 366, 382, 399, 400, 493; Darton and O'Harra, 398.
Carlie shale, Cretaceous: Darton and O'Harra, 451; Darton, 510; Barnett, 640.
Casper formation, Carboniferous: Darton, 493, 683; Darton and Siebenthal, 500; Barnett, 638; Darton *et al.*, 529.
Ceratops beds: Marsh, 281; Stanton and Knowlton, 271.
Ceratops beds, Eocene: Knowlton, 513.
Ceratops beds, Cretaceous: Stanton, 512.
Chadron formation, Tertiary: Smith, 266; Adams, 345; Darton, 510.
Chadron sandstone, Oligocene: Darton *et al.*, 529.
Chugwater formation, Triassic (?), Darton, 633.
Chugwater formation, Triassic: Darton, 399, 424, 427, 429, 430, 447; Fisher, 425; Darton and Siebenthal, 500; Darton *et al.*, 529; Jamison, 564, 589; Wood-

Geologic Formations—Chugwater formation—Continued.
ruff, 565; Blackwelder, 627; Lupton and Condit, 686; Hares, 687; Ziegler, 691; Condit, 697; Barnett, 638.
Chugwater formation, Triassic and Permian: Darton, 392; Blackwelder, 569; Branson, 669.
Circle cycle, Pleistocene: Blackwelder, 666.
Claggett formation, Cretaceous: Washburne, 532; Woodruff, 533.
Clark Fork beds, Tertiary: Granger, 647.
Cloverly formation: Lupton, 688.
Cloverly formation, Comanchean: Ziegler, 714, 715.
Cloverly formation, Cretaceous: Darton, 392, 424, 427, 429, 430, 447; Darton and Siebenthal, 500; Darton *et al.*, 529; Barnett, 638, 639; Fisher, 425; Washburne, 532; Hintze, 660, 663; Hewett and Lupton, 713; Hewett, 642.
Cloverly formation, Upper and Lower Cretaceous: Blackwelder, 569.
Cloverly sandstone, Cretaceous: Darton, 493.
Cloverly (?) sandstone, Cretaceous: Darton, 683.
Cody formation, Cretaceous: Ziegler, 714.
Cody shale, Cretaceous: Lupton, 688; Hewett and Lupton, 713; Ziegler, 715.
Colorado formation, Cretaceous: Darton, 424, 427, 429, 430, 447, 493; Fisher, 425; Veatch, 438; Hewett, 642.
Colorado formation, Upper Cretaceous: Blackwelder, 569.
Colorado group, Cretaceous: Darton, 529; Smith, 504; Wegemann, 567; Hintze, 660.
Colorado shale, Cretaceous: Woodruff, 502, 533; Washburne, 525; Ziegler, 691.
Comanche series: Stanton, 409.
Como group: Knight, 284, 316.
Cottonwood white layer, Eocene: Matthew, 518.
Dakota formation: Logan, 326; Stanton, 409.
Dakota formation, Cretaceous: Darton, 331; Veatch, 456.
Dakota group, Cretaceous: Ziegler, 691.

Geologic Formations—Continued.
Dakota sandstone, Cretaceous: Darton, 400, 510; Wegemann, 567, 591; Blackwelder, 569; Woodruff, 565; Jamison, 589; Stone, 579; Hares, 687.
DeSmet formation, Cretaceous: Darton, 424, 427, 429, 447.
Deadwood formation, Cambrian: Darton, 392, 399, 424, 427, 429, 430, 493, 510; Darton and O'Hara, 398; Fisher, 425; Jamison, 564, 589, 590; Blackwelder, 569.
Dinwoody formation, Triassic: Condit, 697.
Dinwoody formation, Triassic: Lupton and Condit, 686.
Eagle sandstone, Cretaceous: Woodruff, 502, 533; Washburne, 532; Hintze, 660, 663.
Ellis formation, Jurassic: Blackwelder, 569.
Embar formation, Carboniferous: Darton, 427, 430, 493; Fisher, 425; Jamison, 564; 589, 590; Woodruff, 565; Branson, 704; Hewett and Lupton, 713.
Embar formation, Pennsylvanian: Blackwelder, 569.
Embar formation, Permian: Blackwelder, 627.
Embar, Triassic and Carboniferous: Lupton and Condit, 686; Condit, 697.
Englewood limestone, Carboniferous: Darton, 510.
Evanston formation, Tertiary: Schultz, 459; Veatch, 433.
Flathead formation: Weed, 290.
Flathead formation, Cambrian: Blackwelder, 569.
Forelle limestone, Carboniferous: Darton, 493; Darton and Siebenthal, 500; Darton *et al.*, 529; Barnett, 638.
Forelle (?) limestone: Darton, 683.
Fort Benton formation, Cretaceous: Jamison, 589, 590.
Fort Benton stage, Cretaceous: Trumbull, 406.
Fort Pierre stage, Cretaceous: Trumbull, 406.
Fort Union beds: Wegemann, 719.
Fort Union formation, Tertiary: Veatch, 473; Barnett, 638; Shaw, 503; Washburne, 514; Woodruff, 502, 533; Wegemann, 584, 610; Woodruff and Winchester, 585; Hewett and Lupton, 713.

Geologic Formations—Continued.

Fort Union formation: Jamison, 589, 590; Winchester, 582.
Fort Union formation, Eocene: Knowlton, 513; Wegemann, 567; Davis, 581; Hewett, 642; Hintze, 660, 662, 663.
Fort Union (DeSmet) member, Tertiary: Gale and Wegemann, 534.
Fox Hills formation, Cretaceous: Darton, 382, 392, 399, 430; Barnett, 639; Fisher, 425.
Fox Hills sandstone: Darton, 510; Winchester, 582.
Fox Hills sandstone. Cretaceous: Darton and O'Harra, 451; Darton *et al.*, 529; Stanton, 546; Wegemann, 567, 584, 591; Jamison, 592; Barnett, 638, 640.
Fox Hills sandstone (?), Upper Cretaceous: Blackwelder, 569.
Fremont cycle, Pliocene: Blackwelder, 666.
Frontier formation, Cretaceous: Veatch, 456; Schultz, 459, 487, 635; Lupton, 688; Hewett and Lupton, 713; Ziegler, 714, 715; Hares, 687; Knowlton, 718.
Frontier sandstone, Cretaceous: Ziegler, 691.
Fuson formation, Cretaceous: Darton, 400; Darton and O'Harra, 398, 451.
Fuson shale: Stone, 579.
Fuson shale, Cretaceous: Barnett, 640.
Gallatin limestone: Hague, 290.
Gallatin limestone, Cambrian: Blackwelder, 569.
Gebo formation, Cretaceous: Hewett, 642.
Gering beds, Tertiary: Peterson, 442.
Graneros formation, Cretaceous: Darton, 382; Smith, 366.
Graneros shale, Cretaceous: Darton, 399, 493, 510; Darton and O'Harra, 398, 451; Barnett, 640; Stone, 579.
Greenhorn limestone, Cretaceous: Darton, 382, 392, 400, 498, 510; Darton and O'Harra, 398.
Greenhorn formation, Cretaceous: Darton and O'Harra, 451; Barnett, 640.
Green River formation, Tertiary: Veatch, 433; Schultz, 459, 487, 506, 538.
Green River formation, Eocene: Schultz, 635; Winchester, 690.

Geologic Formations—Continued.

Greybull beds, Tertiary: Granger, 647.
Greybull sand, Cretaceous: Lupton, 688.
Guernsey formation, Carboniferous: Darton, 392, 399; Smith, 366.
Hailey shales, Cretaceous: Williston, 412.
Harrison beds, Tertiary: Peterson, 442.
Hartville formation, Carboniferous: Darton, 392, 399; Smith, 366.
Hilliard formation, Cretaceous: Knight, 367; Schultz, 459, 487, 635.
Ilo formation, Cretaceous: Hintze, 663.
Ilo formation, Cretaceous or Tertiary, Hewett, 642.
Jefferson limestone: Hague, 290.
Jefferson limestone, Devonian: Kindle, 492; Blackwelder, 569.
Judith River formation, Cretaceous: Washburne, 532.
Kingsbury conglomerate, Cretaceous: Darton, 424, 427, 429, 447.
Kingsbury conglomerate, Eocene: Knowlton, 513.
Kingsbury conglomerate, Tertiary: Stanton, 512; Gale and Wegemann, 534.
Knight beds, Tertiary: Veatch, 473.
Knight formation, Tertiary: Schultz, 459, 487, 635; Sinclair and Granger, 601.
Lakota sandstone, Cretaceous: Darton, 400, 510; Darton and O'Harra, 398, 451; Stone, 579; Barnett, 640.
Lance Creek (Ceratops) beds, Cretaceous: Hatcher, 377.
Lance Creek beds, Cretaceous: Winchester, 582.
Lance Creek beds, Eocene: Knowlton, 513.
Lance Creek formation, Cretaceous: Stanton, 546.
Lance Creek formation, Cretaceous or Tertiary: Wegemann, 567, 584; Barnett, 638; Hares, 665; Lull, 672.
Lance Creek formation, Tertiary: Knowlton, 570; Barnett, 639.
Lance formation, Tertiary (?): Hewett and Lupton, 713.
Laramie: Stanton and Knowlton, 271; Peale, 122.
Laramie, Cretaceous: Knight, 367.

Geologic Formations—Continued.

Laramie formation, Cretaceous: Adams, 345; Darton, 382, 392, 399, 430, 510; Veatch, 433; Fisher, 425; Ball, 505; Schultz, 506, 538; Ball and Stebinger, 536; Smith, 504; Washburne, 532; Woodruff, 502; Jamison, 589, 590.
 Laramie formation, Cretaceous and Tertiary: Veatch, 456.
 Laramie formation, upper Tertiary, Ball and Stebinger, 536; Schultz, 538.
 Laramie formation, Upper Cretaceous and Eocene: Blackwelder, 589.
 Laramie stage, Cretaceous: Trumbull, 406.
 Largo beds, Tertiary: Granger, 538.
 Lenore cycle, Pleistocene: Blackwelder, 666.
 Lewis formation, Cretaceous: Veatch, 500; Hares, 665.
 Lewis shale, Cretaceous: Ball, 505; Schultz, 506, 536, 538; Ball and Stebinger, 536; Jamison, 589, 590.
 Lone Tree white layer, Eocene: Matthew, 518.
 Lost Cabin formation, Eocene: Sinclair and Granger, 572.
 Lost Cabin formation, Tertiary: Sinclair and Granger, 601; Granger, 647.
 Lysite formation, Eocene: Sinclair and Granger, 572; Granger, 647.
 Madison limestone: Hague, 290.
 Madison limestone, Carboniferous: Darton, 424, 427, 429, 430, 447, 493; Fisher, 425; Jamison, 564; Mansfield, 693; Hewett and Lupton, 713.
 Madison limestone, Mississippian: Gale and Richards, 540; Blackwelder, 569.
 Mancos shale, Cretaceous: Woodruff, 565; Woodruff and Winchester, 585; Ziegler, 691.
 Mesa verde formation, Cretaceous: Veatch, 456; Smith, 504; Ball, 505; Schultz, 506, 538; Darton *et al.*, 529; Ball and Stebinger, 536; Jamison, 564; Woodruff, 565; Hares, 665; Lupton, 688; Ziegler, 691, 714, 715; Hewett and Lupton, 713.
 Meetetse formation: Hewett, 612.
 Meetetse formation, Cretaceous: Hintze, 663; Hewett and Lupton, 713.

Geologic Formations—Continued.

Minnekahta limestone, Carboniferous: Darton, 382, 392, 399, 400, 510; Darton and O'Harra, 398.
 Minnekahta limestone, Permian (?) Carboniferous: Smith, 386.
 Minnelusa sandstone, Carboniferous: Darton, 400, 510; Darton and O'Harra, 398.
 Monroe Creek beds, Tertiary: Peterson, 442.
 Montana formation: Hague, 290; Knowlton, 271.
 Montana formation, Cretaceous: Veatch, 433; Darton, 493; Shaw, 503.
 Montana group, Cretaceous: Darton and Siebenthal, 500; Woodruff, 502, 533; Darton *et al.*, 529; Ball and Stebinger, 536; Wegemann, 567, 584; Hintze, 660.
 Morrison clay, Jurassic or Lower Cretaceous: Smith, 386.
 Morrison formation: Stanton, 409.
 Morrison formation, Comanchean: Ziegler, 715.
 Morrison formation, Cretaceous: Darton, 424, 427, 429, 430, 447, 510; Darton *et al.*, 529.
 Morrison formation, Cretaceous(?) Hares, 687; Ziegler, 691; Hewett and Lupton, 713.
 Morrison formation, Cretaceous, Rocky Mountain region: Mook, 700.
 Morrison formation, Lower Cretaceous: Blackwelder, 569.
 Morrison formation, Lower Cretaceous or Jurassic: Hintze, 660; Darton, 683.
 Morrison formation, Jurassic: Jamison, 564, 589, 590; Wegemann, 593.
 Morrison shales, Cretaceous: Darton, 382, 392, 400; Darton and O'Harra, 451.
 Morrison shales, Jurassic or Cretaceous: Barnett, 638, 639; Hewett, 642; Stone, 579.
 Morrison shales, Jurassic: Barnett, 640.
 Morrison sandstones, Comanchean: Ziegler, 714.
 Mowry beds, Cretaceous: Darton, 493; Jamison, 592.
 Mowry member, Cretaceous: Darton, 424, 510; Darton and O'Harra, 451.
 Mowry shale, Cretaceous: Wegemann, 567, 591; Barnett, 638,

Geologic Formations—Mowry shale

—Continued.

- 639, 640; Hares, 665, 687; Lupton, 688; Hewett and Lupton, 713; Ziegler, 691, 714, 715.
Niobrara formation, Cretaceous: Darton, 392, 399, 493, 510; Darton and O'Harra, 398, 451; Darton and Veatch, 456; Siebenthal, 500; Hares, 665; Ziegler, 691.
Niobrara stage, Cretaceous: Trumbull, 406.
Niobrara shale; Wegemann, 567, 591.
Niobrara shale, Cretaceous: Darton, 683.
North Park formation, Tertiary: Veatch, 456.
Nugget sandstone, Jurassic: Gale and Richards, 540.
Nugget sandstone, Jurassic or Triassic: Schultz, 635.
Ogallala formation, Tertiary: Adams, 345.
Opeche formation, Carboniferous: Darton, 382, 392, 399, 400, 510; Darton and O'Harra, 398.
Opeche formation, (Permian) Carboniferous: Smith, 366.
Pahasapa, Carboniferous: Darton, 382; Darton and O'Harra, 398.
Park City formation, Carboniferous: Gale and Richards, 540; Girty, 552; Condit, 697.
Park City formation, Pennsylvanian: Blackwelder, 569.
Park City member, Cretaceous: Jamison, 592.
Park City sandstone, Pennsylvanian and Permian: Wegemann, 567; Schultz, 635.
Parkman sandstone member: Barnett, 638; Hares, 665.
Parkman sandstone, Cretaceous: Darton, 424, 427, 429, 447.
Peay sandstone, Cretaceous: Hinterze, 660.
Peay sandstone member, Cretaceous: Lupton, 688.
Phosphoria formation, Carboniferous: Mansfield, 693.
Pierre formation, Upper Cretaceous: Blackwelder, 569.
Pierre formation, Cretaceous: Barnett, 638, 639, 640; Wegemann, 584, 591; Jamison, 592; Ziegler, 691.
Pierre shale, Cretaceous: Darton, 382, 392, 399, 424, 427, 429, 430, 447, 510; Darton and O'Harra,

Geologic Formations—Pierre shale—

Continued.

- 398, 451; Darton *et al.*, 529; Fisher, 425; Stanton, 546; Hinterze, 660, 663.
Pinedale stage, Pleistocene: Blackwelder, 666.
Piney formation, Cretaceous: Darton, 424, 427, 429, 447; Knowlton, 513; Gale and Wegemann, 534.
Pinyon conglomerate, Eocene: Blackwelder, 666.
Popo Agie beds, Triassic: Branson, 669.
Quadrant formation, Pennsylvanian: Blackwelder, 569.
Ralston formation, Tertiary: Graniger, 647.
Red beds, Trias: Spencer, 385.
Red beds, Permian and Triassic: Branson, 669.
Sage Creek white layer Eocene: Matthew, 518.
Salt Lake beds, Pliocene: Mansfield, 693.
San Coulee beds, Tertiary: Graniger, 518.
Santanka shale: Darton, 498.
Santanka shale, Carboniferous: Barnett, 638; Darton and Siebenthal, 500; Darton *et al.*, 529; Darton, 683.
Shannon sandstone lentil, Cretaceous: Wegemann, 567, Barnett, 638.
Sherman granite, pre-Cambrian: Darton *et al.*, 529; Blackwelder, 494.
Shirley stage: Knight, 280, 316.
Spearfish formation, Triassic: Darton, 382, 392, 399, 400, 510; Darton and O'Harra, 398, 451; Stone, 579.
Spearfish sandstone, Triassic: Smith, 366.
Steele shale, Cretaceous: Darton *et al.*, 529; Hares, 665.
Sundance formations, Jurassic: Darton 383, 392, 399, 400, 424, 427, 429, 430, 447, 493, 510; Darton and O'Harra, 398, 451; Smith, 366; Fisher, 425; Darton and Siebenthal, 500; Darton, *et al.*, 529; Woodruff, 565; Blackwelder, 569; Stone, 579; Wegemann, 591; Jamison, 589, 590, 591, 592; Hewett, 642; Barnett, 640, 649; Ziegler, 691; Hewett and Lupton, 718.

Geologic Formations—Continued.

Tatman formation, Tertiary: Sinclair and Granger, 601.

Teapot sandstone member Cretaceous: Barnett, 639; Hares, 665, 687.

Tensleep sandstone, Carboniferous: Darton, 392, 399, 424, 427, 429, 430, 447; Fisher, 425; Jamison, 564; Hewett and Lupton, 713; Condit, 697.

Tensleep sandstone, Pennsylvanian: Blackwelder, 569, 627; Hares, 687.

Terrejon Tertiary: Veatch, 473.

Teton formation, Triassic and Carboniferous: Blackwelder, 569.

Thaynes formation, Triassic: Gale and Richards, 540; Girty, 552; Schultz, 635; Mansfield, 693.

Three Forks limestone: Hague, 290.

Three Forks limestone, Devonian: Blackwelder, 569.

Torchlight sandstone, Cretaceous: Hintze, 660; Lupton, 681.

Twin Creek limestone, Jurassic: Gale and Richards, 540; Blackwelder, 569; Schultz, 635; Mansfield, 693.

Thermopolis shale: Lupton, 688; Ziegler, 691, 715, 714; Lupton and Hewett, 713.

Union Pass cycle, Pleistocene: Blackwelder, 666.

Uinta formation, Eocene: Sinclair and Granger, 572.

Unkpapa sandstone, Jurassic: Darton, 510.

Wall Creek sandstone lentil, Cretaceous: Wegemann, 567, 591; Jamison, 592; Barnett, 638, 639.

Wasatch beds, Tertiary: Loomis, 478; Granger, 647.

Wasatch formation, Tertiary: Fisher, 425; Smith, 504; Schultz, 508, 538; Washburne, 532; Woodruff, 533; Ball and Stebinger, 536; Jamison, 589, 590; Veatch, 452.

Wasatch formation, Eocene: Sinclair and Granger, 572.

Wasatch group: Gale and Richards, 540; Schultz, 635.

Wasatch limestone, Mississippian: Gale and Richards, 540.

Washakie formation, Tertiary: Sinclair, 515; Granger, 516.

Weber quartzite, Carboniferous: Gale and Richards, 540; Girty, 552.

Weber quartzite, Pennsylvanian: Blackwelder, 569; Schultz, 635.

Geologic Formations—Continued.

Wells formation, Carboniferous: Mansfield, 693.

Whalen group, Algonkian: Smith, 366.

White River formation, Tertiary: Shaw, 503; Jamison, 589, 590; Barnett, 638, 639.

White River formation, Oligocene: Darton *et al.*, 529; Winchester, 582; Darton, 683; Hares, 687.

White River group, Oligocene: Darton *et al.*, 529.

Whitewood limestone, Ordovician: Darton, 400, 510; Darton and O'Hara, 398.

White River formation, Oligocene: Darton *et al.*, 529.

Wind River Eocene: Hares, 687.

Wind River formation, Tertiary: Woodruff, 565; Woodruff and Winchester, 585; Ziegler, 691.

Wind River sandstone, Eocene: Sinclair and Granger, 572.

Wind River shales, Eocene: Sinclair and Granger, 572.

Wind River tuffs, Eocene: Sinclair and Granger, 572.

Woodside formation, Carboniferous or Triassic: Girty, 552.

Woodside shale, Triassic: Gale and Richards, 540; Blackwelder, 569; Mansfield, 693.

Wyoming conglomerate, Tertiary: Spencer, 385; Veatch, 433; Sinclair, 443.

Geologic History.

Bighorn Basin: Fisher, 425.

Bighorn Mountains: Darton, 427.

Black Hills region: Darton, 510.

Cenozoic history, central Wyoming: Baker, 596.

Cody region: Sinclair, 598, 599.

Copper deposits, Encampment district: Spencer, 385.

Copper Mountain district: Trumbull, 692.

Folios: See Folios: U. S. G. S. quadrangles.

Fremont County: Jamison, 564.

Laramie region, Cenozoic: Blackwelder, 511.

Owl Creek Mountains: Darton, 430.

Paleozoic and Mesozoic, central Wyoming: Darton, 493.

Post-Cretaceous history, central Wyoming: Blackwelder, 646.

Sweetwater County: Schultz, 538.

Western Wyoming: Blackwelder, 666.

Geologic History—Continued.

Wind River and Bighorn basins: Sinclair and Granger, 572.
Wind River Mountains, Cenozoic history: Westgate and Branson, 617.
Yellowstone Park: Hague, 577.

Geologic Maps.

Atlantic City district: Trumbull, 636; Spencer, 684.
Bear River group: Hayden, 83.
Beckwith Hills area: Gale and Richards, 540.
Bighorn Basin: Chance, 206; Fisher, 425; Washburne, 532; Woodruff, 533.
Bighorn Mountains: Carpenter, 101; Darton, 427; Lupton and Condit, 686.
Black Hills: Meek and Hayden, 16; Chance, 206; Darton 331, 510.
Brider beds: McMaster, 132.
Carroll to Yellowstone Park: Dana and Grinnell, 91.
Coal: *See* Coal Fields.
Colorado Plateau province: Gilbert, 81.
Copper Mountain district: Trumbull, 692.
Country west of Rocky Mountains: Ball, 2.
Embar formation: Condit, 687.
Folios: *See* Folios; U. S. G. S. quadrangles.
Fortieth Parallel survey: Zirkel, 90; King, 99; Newberry, 112.
Gallatin Mountains: Iddings and Weed, 303.
Geologist's report: Aughey, 166; Ricketts, 178, 194.
Central Great Plains: Darton, 399.
Great West: Hayden, 127.
Green River formation: Winchester, 690.
Lake basins: Marsh, 74.
Laramie Basin: Darton and Siebenthal, 500.
Leucite Hills: Kemp and Knight, 375.
Lincoln County: Schultz, 635.
Macfarlane's railway guide: Hague, 114; Scott, 196.
Magnetic differentiation, extrusive and intrusive igneous rocks: Iddings, 258.
Mississippi drainage area: James, 1.
North America: Marcou, 6, 12.
North Laramie Mountains: Spencer, 683.
Oil: *See* Petroleum.
Oil fields: Riggs, 181.

Geologic Maps—Continued.

Owl Creek Mountains: Darton, 430.
Pacific Ocean, route to: Newberry, 7.
Patrick and Goshen quadrangles: Adams, 345.
Rocky Mountains, eastern margin: Hayden, 21.
Expedition: Fremont, 3.
Division: Emmons, 156.
Geology: Hills, 209.
Primordial of: Hayden, 19.
Salt Lake geological and paleontologic expedition: Hall, 4.
Salt River Range: Mansfield, 693.
Soda deposits: Knight, 280.
Sweetwater district: Endlich, 116; Knight, 333.
Uinta County: Schultz, 459.
Uinta Mountains: Powell, 77.
United States: Marcou, 5; Blake, 8; Hitchcock and Blake, 52; McGee, 159; Hitchcock, 173.
Warren's Geography: Brewer, 195.
Western States, orography: Blake, 10.
Wind River region: St. John, 140; Woodruff and Winchester, 585.
Wyoming, Northwestern: Comstock, 72.
Paleozoic and Mesozoic: Darton, 493.
Southeastern: Knight, 316; Loomis, 340.
Western: Comstock, 57.
Yellowstone Park: Toula, 177; Hague, 171, 191.
Yellowstone and Missouri rivers: Hayden, 24.

Geysers. *See* Yellowstone Park.

Glacial Geology. *See also* Quaternary.
Bald Mountain and Dayton quadrangles: Darton, 424; Salisbury, 439.
Bighorn Basin: Fisher, 425.
Bighorn Mountains: Darton, 427; Salisbury, 440; Salisbury and Blackwelder, 376; Matthes, 315.
Cloud Peak and Ft. McKinney quadrangles: Darton, 429; Salisbury, 441.
Cody: Sinclair, 598.
Eroding power of ice: Newberry, 157.
United States: Russell, 158.
Western Wyoming: Blackwelder, 666.

Glass Sand.

Fremont County: Jamison, 564.
Sunlight district: East, 561.
Glenrock coal field: Shaw, 503.

Gold.

Atlantic City district: Trumbull,
636; Spencer, 684.
Bighorn Mountains: Darton, 427,
428.
Central Great Plains: Darton, 399.
Colorado and Wyoming placer
fields: Snow, 240.
Douglas Creek placers: Snow, 239.
Fremont County: Jamison, 564.
Lincoln County: Schultz, 635.
North America: Lindgren, 369.
Northwestern Wyoming: Eld-
ridge, 235.
Owl Creek Mountains: Darton,
430.
South Pass district: Beeler, 370,
389, 483.
Sunlight district: East, 561.
Uinta County: Schultz, 436.
Wind and Bighorn rivers, placers:
Schrader, 637.
Wyoming mines: Beeler, 480.

Goshen County.

Copper, Hartville: Ball, 462.
Great Plains: Darton, 399.
Hartville folio: Smith, 366.
Iron, Hartville: Chance, 334.
Hartville range: Ball, 466.
Ores: Leith, 436.
Mica: Ball, 468.
Patrick and Goshen quadrangles:
Adams, 345.

Grand Encampment copper district:
Spencer, 368, 385; Lakes, 386;
Reed, 387; Beeler, 407.

Graphite.

Haystack Hills: Ball, 464.
Grass Creek oil and gas field: Hintze,
662.
Great Divide Basin coal field: Smith,
504.

Gypsum.

Aladdin folio: Darton and O'Harra,
398.
Black Hills region: Darton, 331,
510.
Bighorn Basin: Fisher, 425, 426.
Bighorn Mountain region: Darton,
428; Lupton and Condit, 686.
Cement plaster: Trumbull, 454.

Gypsum—Continued.

Great Plains: Darton, 399.
Gypsum deposits: Knight, 390.
Laramie Basin: Darton and Sieben-
thal, 500.
Laramie Basin district: Siebenthal,
435.
Laramie Mountains: Darton, 474.
Laramie cement plaster: Slosson
and Moudy, 314.
Laramie-Sherman quadrangles:
Darton *et al.*, 529.
Newcastle folio: Darton, 382.
Owl Creek Mountains: Darton,
430.
Wyoming: Branson, 658.
Wyoming mines: Beeler, 480.

Hot Springs County.

Bighorn Basin: Fisher, 425, 426.
Coal, Bighorn Basin: Fisher, 384.
Gypsum, Bighorn Mountains: Lup-
ton and Condit, 686.
Hot springs, Thermopolis: Darton,
450.
Owl Creek Mountains: Darton,
430.
Paleozoic and Mesozoic: Darton,
493.

Petroleum.

Anticlines, Bighorn Basin:
Hewett and Lupton, 713.
Grass Creek field: Hintze, 662.
Little Buffalo Basin: Hintze,
663.

Sulphur, Thermopolis: Woodruff,
509.

Igneous and Volcanic Rocks.

Absaroka folio: Hague, 290.
Absaroka range: Iddings, 295.
Absaroka range, Tertiary volcan-
oes: Hague, 294.
Absarokite-shoshonite-banakite
series: Iddings, 296.
Aladdin folio: Darton and O'Harra,
398.
Aladdin quadrangle: Smith, 420.
Atlantic City district: Spencer, 684.
Bald Mountain and Dayton quad-
rangles: Darton, 424.
Bighorn Basin: Fisher, 425.
Black Hills region: Darton, 331,
510; Russell, 264.
Cloud Peak and Fort McKinney
quadrangles: Darton, 429.
Crandall Basin, volcanoes: Id-
dings, 299.
Devil's Tower quadrangle: Darton
and O'Harra, 451.

Igneous and Volcanic Rocks—Continued.

Electric Peak and Sepulchre Mountain: Iddings, 220, 301.
Encampment copper district: Spencer, 385.
Extrusive and intrusive: Iddings, 258.
Fortieth Parallel survey: Zirkel, 90; Hague and Emmons, 93; King, 99.
Laramie and Sherman quadrangle: Darton *et al.*, 529.
Leucite Hills: Kemp, 270; Cross, 274; Kemp and Knight, 375; Schultz and Cross, 594.
Leucite rock, Absaroka range: Iddings, 187.
Minerals, rocks, etc., reports on: Peale, 51.
Recent basalts: Iddings, 297.
Rhyolites, Yellowstone Park: Iddings, 307; Wadsworth, 151.
Rock from Wyoming: Hill, 311.
Spherulitic crystallization: Iddings, 214.
Spherulites, Glade Creek: Iddings and Penfield, 207.
Sundance folio: Darton, 400; Smith, 421.
Sweetwater district: Endlich, 116.
Sweetwater County: Schultz, 506.
Volcano, dissected: Iddings, 231.
Yellowstone Park, absarokite of: Iddings, 245, 296.
Analysis of rocks: Beam, 138.
Igneous rocks: Iddings, 203, 259; Hague, 260.
Obsidian cliff: Iddings, 186.
Petrography of rocks: Dutton, 150.
Rhyolites: Iddings, 307; Wadsworth, 151.
Hartville folio: Smith, 366.
Hartville region copper deposits: Ball, 462.
Hartville iron ore range: Ball, 466.

Insecta.

Tertiary deposits: Cockerell, 497.

Invertebrata. *See also* Brachiopoda; Insecta; Mollusca.
Embar formation: Branson, 704.
Park City formation: Girty, 552.
Star-fish from Cretaceous: Weller, 417.
Toro-like shell from Laramie group: Whitfield, 363.

Iron.

Central Great Plains: Darton, 399.
Geologist's report: Aughey, 166; Ricketts, 194.
Hartville mines: Ball, 466; Chance, 334.
Iron Mountain: Ball, 465.
Sunrise mine: Vallat, 484, 485.
Titaniferous magnetite: Kemp, 408.
United States, western: Leith, 436.
Wyoming Mines: Beeler, 480.

Johnson County.

Bighorn Mountains: Darton, 428, 472; Salisbury, 440.
Central Great Plains: Darton, 399.
Cloud Peak and Fort McKinney quadrangles: Darton, 429; Salisbury, 441.
Coal, Barber field: Wegemann, 610.
Buffalo field: Gale and Wegemann, 534.
Powder River field: Stone and Lupton, 537.
Sussex field: Wegemann, 584.
Oil, Powder River field: Knight and Slosson, 337; Wegemann, 591.

Jurassic.

Artesian borings: Hayden, 95.
Carroll to Yellowstone Park: Dana and Grinnell, 91.
Folios: *See* Folios: U. S. G. S. quadrangle.
Fortieth Parallel survey: Hague and Emmons, 93; King, 99.
Gallatin Mountains: Iddings and Weed, 303.
Geological horizons determined by vertebrate fossils: Marsh, 213.
Geologist's report: Ricketts, 178.
Green River district: Peale, 113.
Macfarlane's railway guide: Hague, 114; Scott, 196.
Missouri, headwaters of: Hayden, 18.
Northwestern Wyoming: Comstock, 72; Eldridge, 235.

Paleontology.

Allosaurus: Matthew, 495.
Brontosaurus: Hatcher, 361.
Colorado Plateau province: Gilbert, 81.
Dinosaurs: Williston, 104; Marsh, 105; Lakes, 119.
Fossil cycadean trunks: Ward, 319.
Fresh-water invertebrates: White, 169.

Jurassic—Continued.

Frog: Moodie, 603.
Hallopus, Baptanodon, and
Atlantosaurusbeds (Marsh):
Williston, 418.
Laramie mammals and dino-
saurs: Hatcher, 256.
Mammals: Marsh, 162.
Plesiosaurs: Mehl, 604.
Reptiles, Baptanodon beds:
Marsh, 244.
Rhynchocephalian reptile:
Gilmore, 525.
Vertebrata of Tertiary of
West: Cope, 153.
Yellowstone Park, plants:
Newberry, 25.
Rocky Mountains, eastern margin:
Hayden, 21.
Front Range: Hayden, 73.
Scenery: Hayden, 29.
Sedimentary rocks: Weed, 261.
Stratigraphy.
Bighorn Mountains: Carpen-
ter, 101; Darton, 472.
Bighorn Basin: Hewett and
Lupton, 713.
Bighorn County: Hintze, 660.
Black Hills region: Darton,
331, 510; Hovey, 358; Stone,
579.
Douglas oil field: Jamison, 589;
Barnett, 639.
Encampment copper district:
Spencer, 385.
Folios: *See* Folios: U. S. G. S.
quadrangle.
Fremont County: Jamison,
564.
Jura-Trias stratigraphy: Loo-
mis, 340; Peale, 120.
Lander oil field: Woodruff,
565.
Laramie basin: Darton and
Siebenthal, 500.
Lignite group of West: Stev-
enson, 80.
Lincoln County: Schultz, 635.
Morrison formation: Mook,
700; Knowlton, 706.
North America, geology: Mar-
cou, 6, 12.
Jura-Trias: White, 163.
North Laramie Mountains:
Spencer, 683.
Owl Creek Mountains: Dar-
ton, 430.
Paleozoic and Mesozoic, cen-
tral Wyoming: Darton, 493.
Powder River oil field: Wegé-
mann, 591.

Jurassic—Continued.

Salt River Range: Mansfield,
693.
Shoshone River section: Hew-
ett, 642.
Southeastern Wyoming:
Knight, 316.
Sweetwater district: Endlich,
116.
Territorial Survey reports.
Missouri Valley geology: Hay-
den, 34.
Montana and adjacent Terri-
tories: Hayden, 35.
Montana, Idaho, Wyoming
and Utah, 6th report: Peale,
53; Hayden, 54.
Montana and Wyoming, map:
Hayden and Peale, 36.
Second annual report: Hay-
den, 20.
Snake River expedition, 1872:
Hayden and Bradley, 38;
Bradley, 55.
Survey of Territories: Hay-
den, 39, 40, 94.
Teton Range: Iddings and Weed,
309.
Uinta Mountains: Marsh, 32; Pow-
ell, 77.
United States, map: Marcou, 5;
McGee, 159.
Warren's Geography: Brewer, 195.
Western Wyoming: Comstock, 57.
Wind River district: St. John, 140.
Wyoming and Colorado: Hayden,
23, 31.
Yellowstone Park: Holmes, 148.
Yellowstone and Firehole rivers,
geysers: Hayden, 50.
LaBarge oil field: Schultz, 487; Trum-
bull, 614.
Lander oil field: Slosson, 268; Wood-
ruff, 565.
Lander coal field: Woodruff, 457.
Landslides.
Gros Ventre slide: Blackwelder,
595.
Laramie Basin, geology and mineral
resources: Darton and Sieben-
thal, 500.
Laramie cement plaster: Slosson and
Moudy, 314.
Laramie County.
Central Great Plains: Darton, 399.
Graphite: Ball, 464.
Laramie and Sherman quadrang-
les: Darton *et al.*, 529.
Lodgepole Valley: Meinzer, 717.

Lead.

- South Dakota and Wyoming, 1914: Henderson, 637.
South Dakota and Wyoming, 1915: Henderson, 635.
Leucite Hills, Sweetwater County: Kemp, 270, 374; Cross, 274; Kemp and Knight, 315; Schultz and Cross, 594.
Laramie Mountains, economic geology: Spencer, 683.
Light oil fields: Trumbull, 689.

Lignite. *See also Coal Fields.*

- Bald Mountain and Dayton quadrangles: Darton, 424.
Northeastern Wyoming: Kennedy, 461.

Lincoln County,

- Brider beds: Sinclair, 443.
Coal, Diamondville field: Shurick, 481.
Geology and geography: Schultz, 635.
Gros Ventre slide: Blackwelder, 595.
Petroleum, Labarge field: Schultz, 487, 635; Trumbull, 614.
Phosphate: Blackwelder, 569.
Salt River Range: Mansfield, 693.
Salt, Idaho-Wyoming border: Breger, 543.
Sodium salts: Schultz, 544.

Little Buffalo Basin oil and gas field: Hintze, 663.

Little Powder River coal field: Davis, 581.

Little Snake River coal field: Ball, 505; Ball and Stebinger, 536.

Lodgepole Valley, ground water for irrigation: Meinzer, 717.

Lorandite, Rambler mine: Rogers, 587.

Lost Spring coal field, Converse County: Winchester, 582.

Mammalia.

- Aptenodus skull: Matthew, 547, 517.
Artiodactyl, Oligocene: Matthew, 517.
Bathyopsis, Wind River uintathere: Osborn, 621.
Camels, Harrison beds: Loomis, 573.
Eohippus: Granger, 576.
Eocene mammals: Granger, 554.

Mammalia—Continued.

- Lance formation, Niobrara County: Lull, 672.
Morrison fauna: Mook, 700.
Peccaries: Loomis, 553.
Sinopa: Matthew, 448.
Titanotheres: Osborn, 628.
Wasatch beds: Loomis, 478.
Wasatch and Wind River beds: Osborn and Wortman, 219.

Maps. *See Geologic Maps; Topographic Maps.*

Mica.

- Hartville uplift: Ball, 468.

Mineralogy.

- Covellite, Rambler mine: Rogers, 560.
Chlorite: Wolff, 586.
Lorandite, Rambler mine: Rogers, 587.
Precious stones: Kunz, 242.
Rare metals, Rambler mine: Read, 372.
Sperrylite: Wells and Penfield, 352.
Titaniferous magnetite: Kemp, 408.

Minerals Described.

- Chlorite, 586.
Lorandite, 587.
Sheridanite, 586.
Datolite, 543.
Magnetite, 408.
Sperrylite, 352.
Quartz, 242.
Useful minerals, 633, 711.

Mineral Waters.

- Bighorn Basin: Fisher, 426.

Mining Laws. Federal and State: Trumbull, 609, 710.

Mollusca. *See also Cephalopoda; Gastropoda; Pelecypoda.*
Tertiary, Colorado, Utah, Wyoming: White, 146.
Tertiary, Wyoming and New Mexico: Cockerell, 649.

Moorcroft oil field: Barnett, 640.

Muddy Creek oil field, Carbon County: Jamison, 590.

Natural Bridges.

- Eastern Wyoming: Barnett, 600.

Natrona County.

- Alkali: Knight and Slosson, 332.

Natrona County—Continued.

Asbestos: Beeler, 530, 557; Barrow, 531; Diller, 558, 559.
Bates Hole: Knight, 338.
Central Great Plains: Darton, 399.
Coal, Glenrock field: Shaw, 503.
 Sussex field: Wegemann, 584.
 Wind River field: Woodruff and Winchester, 585.
Oil, anticlines, central Wyoming: Hares, 687.
 Dutton field: Knight and Slosson, 337.
 Oil Mountain field: Knight and Slosson, 337.
 Powder River field: Wegemann, 591.
 Rattlesnake and Arago fields: Knight and Slosson, 337.
 Rattlesnake field: Trumbull, 614.
Salt Creek field: Aughey, 166; Knight, 251, 252; Wegemann, 567; Jamison, 592; Trumbull, 641.
Paleozoic and Mesozoic: Darton, 493.
Sodium salts: Schultz, 544.

Natural Gas.

Basin: Lupton, 688.
Basin and Greybull fields: Hintze, 660.
Bighorn Basin: Hewett and Lupton, 713; Washburne, 488.
Big Muddy-Douglas map: Trumbull, 661.
Byron: Ziegler, 714.
Douglas field: Barnett, 639.
Grass Creek: Hintze, 662.
Little Buffalo Basin: Hintze, 663.
Oregon Basin: Ziegler, 715.
Migration and separation of hydrocarbons: Trumbull, 694.
Western States: Lakes, 507, 562.

Niobrara County.

Central Great Plains: Darton, 399.
Oil, Buck Creek: Trumbull, 614.

Oil. See Petroleum.

Oil shales, Green River Basin: Winchester, 690.

Ordovician.

Bighorn dolomite: Blackwelder, 619.

Paleontology.

 Coraline algae: Blackwelder, 632.

 Fish remains, Bighorn Mountains: Darton, 447.

Ordovician—Continued.

Stratigraphy.

Aladdin folio: Darton and O'Harrs, 398.
Bald Mountain and Dayton quadrangles: Darton, 424.
Bighorn Basin: Fisher, 425.
Bighorn dolomite: Blackwelder, 619.
Bighorn Mountains: Darton, 427.
Black Hills and Rocky Mountains Front Range: Darton, 392.
Black Hills region: Darton, 510.
Cloud Peak and Fort McKinney quadrangles: Darton, 429.
Owl Creek Mountains: Darton, 430.
Paleozoic and Mesozoic, central Wyoming: Darton, 493.

Ore Deposits, Origin.

Phosphate: Gale and Richards, 540.
Nitrate: Gale, 588.
Sunlight Basin: Hewett, 616.
Encampment district: Spencer, 368, 385.

Oregon Basin gas and oil field: Ziegler, 715.

Orogeny.

Southwestern Wyoming: Rich, 545.

Ostracoda.

Park City phosphate beds: Girty, 552.

Owl Creek Mountains: Darton, 430.

Paleobotany.

Cycadeoideae: Wieland, 703.

Fossil figs: Knowlton, 575.

Fossil flora, Frontier formation: Knowlton, 718.

Fossil woods, western States: Plate, 496.

Gleichenia: Knowlton, 626.

Jurassic fossils: Veatch, 446.

Mesozoic and Tertiary floras: Knowlton, 551.

Plants, Morrison formation: Knowlton, 706.

Paleontology.

Algal reef, Teton Mountains: Blackwelder, 670.

Allosaurus: Matthew, 495.

Amsden fauna: Blackwelder, 627.

Angistorhinus, Triassic Phytosaur: Mehl, 620.

Apteronodus skull: Matthew, 547.

Paleontology—Continued.

Araucarioxylon, Freezeout Hills; Knowlton, 317.
Araucarias, Cretaceous: Wieland, 548.
Armadillo, middle Eocene: Osborn, 393.
Astrodon (*Pleurocoelus*), Atlantosaurus beds: Hatcher, 378.
Atlantosaur and Titanotherium beds: Peck, 394.
Baena, Laramie beds: Hay, 359.
Baptanodon, Jurassic: Gilmore, 360.
Bathyopsis, Wind River nintatherae: Osborn, 621.
Bear River formation: Stanton, 217; White, 216.
Bird and fish remains, middle Eocene: Eastman, 322.
Bird remains: Shufeldt, 625.
Brontosaurus: Hatcher, 361.
Cambrian fossils, Yellowstone Park: Walcott, 298.
Camels, Harrison beds: Loomis, 573.
Camptosaurus: Marsh, 236.
Carnegie Museum paleontological expedition: Hatcher, 318.
Carnivora and Insectivora, Bridger Basin: Matthew, 518.
Ceratops beds: Hatcher, 223.
Ceratopsia: Hatcher, 410; Hatcher et al., 476; Marsh, 281.
Chara stantoni: Knowlton, 224.
Claosaurus: Marsh, 218, 225.
Coelosuchus reedii: Williston, 445.
Converse County: Sternberg, 574.
Coralline algae, Ordovician dolomite: Blackwelder, 622.
Coryphodon: Earle, 226; Osborn, 282.
Cretaceous plants, Hay Creek; Fontaine, 293.
Crinoid, Jurassic: Springer, 522.
Crocodile, Jurassic: Holland, 411.
Cycadeoideae: Wieland, 703.
Devonian and Carboniferous, Yellowstone Park: Girty, 300.
Dinictis: Riggs, 254.
Dinosaurs, Lance formation: Gilmore, 623.
Dinosaurs, Cretaceous: Williston, 412.
Dinosaurs, Jurassic: Gratacap, 862.
Dinosaur Trachodon annexens: Lucas, 395.
Diplodocus: Holland, 320.
Embar formation: Branson, 704.

Paleontology—Continued.

Eocene fossils, Green River: Cockrell, 519.
Eohippus: Granger, 576.
Eomoropus: Granger, 576.
Fish, Green River shales: Jordan, 549.
Flora, Montana formation: Knowlton, 320.
Fossil cycadean trunks, Jurassic: Ward, 319.
Fossil fields expedition: Schuchert, 292.
Fossil fields: U. P. R. R., 520.
Fossil figs: Knowlton, 575.
Fossil flora, Yellowstone Park: Knowlton, 302.
Fossil forests: Weed, 216; Knowlton, 286, 653.
Fossil hunting in Wyoming: Riggs, 324.
Fossil wood: Yellowstone Park: Platen, 526.
Gallinuloides wyomingensis: Shufeldt, 671.
Gastropoda, Tertiary: Cockerell, 673.
Gleichenia, Cretaceous: Knowlton, 626.
Hallopus, Baptanodon and Atlantosaurus beds: Williston, 413.
Hyopسودidae, Wasatch and Wind River basins: Loomis, 415.
Hyracotherium and allied perissodactyls: Wortman, 255.
Iguanodont dinosaur: Osborn, 521.
Insects, Tertiary: Cockerell, 497.
Igneous rocks, Yellowstone Park: Hague, 260.
Jefferson limestone fauna: Kindle, 492.
Jurassic, Freezeout Hills: Logan, 326.
Jurassic frog: Moodie, 603.
Jurassic vertebrates: Knight, 283, 284, 327.
Lance fauna, Niobrara County: Lull, 672.
Laramie Cretaceous: Williston, 355.
Laramie mammals and dinosaurs: Hatcher, 256.
Leidyosuchus sternbergi crocodile: Gilmore, 550.
Lepidosteids: Eastman, 328.
Loup Fork fauna: Riggs, 514.
Mammals, Wasatch and Wind River beds: Osborn and Wortman, 219.

Paleontology—Continued.

Mesozoic and Cenozoic plants: Knowlton, 551.
Mesozoic flora, United States: Ward, 416.
Mesozoic fossils, Yellowstone Park: Stanton, 306.
Morosaurus, sacrum of: Williston, 285.
Mosasaur, Fort Pierre shale: Loomis, 674.
Ichthyosaur-like remains, Upper Cretaceous: Merriam, 414.
Oligocene vertebrates: Matthew, 517.
Ostracoda: Jones, 227.
Paleorhinus, skull: Lees, 477.
Park City formation phosphate beds: Girty, 552.
Peccaries: Loomis, 553.
Plants, Morrison formation: Knowlton, 706.
Plesiosaurus, Jurassic: Mehl, 604.
Poposaurus gracilis, Triassic: Mehl, 675.
Reptiles, Bapitanodon beds: Marsh, 244.
Reptiles, Trias: Williston, 396.
Rhynchocephalian reptile, Jurassic: Gilmore, 525.
Silurian strata, Wyoming and South Dakota: Beecher, 253.
Sinopa: Matthew, 448.
Star-fish, Cretaceous: Weller, 417.
Stylinodontia: Marsh, 272.
Tapir: Wortman and Earle, 228.
Teeth in Bapitanodon: Gilmore, 360.
Tertiary faunal horizons, Wind River Basin: Granger, 554.
Tertiary floras, Yellowstone Park: Knowlton, 262.
Thescelosaurus, Lance formation: Gilmore, 676.
Tithymalus, Clark's Fork Basin: Cockerell, 651.
Titanotheres: Osborn, 628.
Titanotherium beds: Hatcher, 229.
Toredo-like shell, Laramie group: Whitfield, 363.
Tortoises: Baur, 230.
Trachodon integument: Osborn, 602.
Trachodon, Laramie beds: Sternberg, 524.
Turtles, Bridger Basin: Hay, 419.
Turtles, Lance formation: Gilmore, 705.
Turtles, Oligocene: Lambe, 629.

Paleontology—Continued.

Unio, Tertiary: Cockerell, 677.
Vertebrates, Triassic: Williston, 418.
Vertebrate fauna, Miocene: Peterson, 442.
Wasatch fossils, Fort Union: Wegemann, 719.
Wasatch vertebrates: Loomis, 478.
Wasatch and Wind River rodents: Loomis, 478.
Wasatch and Wind River faunas: Matthews and Granger, 678.

Park County.

Bighorn Basin: Fisher, 425.
Coal, Bighorn Basin: Fisher, 384; Washburne, 532.
Cody region, glacial geology: Sinclair, 598, 599.
Oil, anticlines, Bighorn Basin: Hewett and Lupton, 713.
Cody: Hewett, 612.
Little Buffalo Basin field: Hintze, 663.
Oregon Basin gas field: Porro, 613; Ziegler, 715.
Shoshone River section: Hewett, 642.
Ore, Kirwin: Hewett, 648.
Sulphur, Cody: Woodruff, 490; Hewett, 644.
Sunlight Basin: Hewett, 616.
Wyoming: Trumbull, 471.
Sunlight district: East, 561.

Pelecypoda. *See also Mollusca.*

Park City formation phosphate beds: Girty, 552.
Unio, Tertiary: Cockerell, 677.

Peneplains.

Bishop conglomerate: Rich, 545.
Western Wyoming: Blackwelder, 666.

Pennsylvanian: *See Carboniferous.*

Permian. *See Carboniferous.*

Petroleum.

Analyses: Slosson, 250, 268.
Basin and Greybull fields: Hintze, 660.
Basin field: Lupton, 688.
Bighorn Basin gas field: Washburne, 486.
Bighorn Basin: Ziegler, 713.
Bighorn Mountain region: Darton, 427.

Petroleum—Continued.

Big Muddy and Douglas fields: Trumbull, 661.
Black Hills and Bighorn Mountains: Darton, 392.
Bonanza, Cottonwood and Douglas fields: Knight and Slosson, 371.
Byron fields: Havenor, 563; Rogers, 611; Ziegler, 714.
Central Wyoming, Mesozoic and Paleozoic: Darton, 493.
Cody region: Hewett, 612.
Copper Mountain, Fremont County: Trumbull, 692.
Douglas field: Barnett, 639; Jamison, 588.
Dutton, Rattlesnake, Oil Mountain, and Powder River fields: Knight and Slosson, 337.
Fremont County: Jamison, 564.
Geologist's report: Aughey, 166; Ricketts, 194.
Grass Creek fields: Hintze, 662.
Labarge field: Schultz, 487.
Lander field: Knight, 269; Jamison, 564; Woodruff, 565; Breger, 566.
Light oil fields: Trumbull, 639.
Lincoln County: Schultz, 635.
Little Buffalo Basin: Hintze, 663.
Migration and separation of hydrocarbons: Trumbull, 694.
Mineral resources: Knight, 222.
Moorcroft field: Barnett, 640.
Muddy Creek field: Jamison, 590.
Newcastle field: Knight and Slosson, 349.
Oil: Rigge, 181; Knight, 269, 335; De la Condamine, 488; Trumbull, 614.
Crook and Uinta counties: Knight and Slosson, 289.
Oil and gas production: Johnston and Huntley, 681.
Oregon Basin: Ziegler, 715.
Petroleum deposits: Bailey, 179; Oliphant, 279; Knight, 267, 336, 350; Lakes, 568.
Petroleum geology: Trumbull, 716.
Petroleum and its products: Redwood, 437.
Pilot Butte: Ziegler, 691.
Placer law: Ball, 634.
Powder River oil field: Wegemann, 591.
Prospecting for oil: Lakes, 348.
Report to Governor of Wyoming: Ricketts, 178, 194.
Report of Territorial geologist: Aughey, 166.

Petroleum—Continued.

Salt Creek field: Knight, 251, 252; Jamison, 592; Wegemann, 567; Trumbull, 641.
Salt Creek petroleum: Slosson, 250.
Shoshone River section: Hewett, 642.
Spring Valley field: Merrill, 593.
Mineral resources: Beeler, 401.
Uinta County: Veatch, 483.
Withdrawn lands: Ball, 681; Trumbull, 710.
Wyoming oil fields: Lakes, 278.
Mineral resources: Jamison, 556.
Petrology. *See also Igneous and Volcanic rocks. Also Rocks described.*
Absaroka folio: Hague, 290.
Absarokite-shoshonite-banakite series: Iddings, 245.
Aladdin folio: Darton and O'Harr, 398.
Bald Mountain and Dayton quadrangles: Darton, 424.
Bighorn Basin: Fisher, 425.
Bighorn Mountains: Darton, 427.
Black Hills region: Darton, 510.
Cloud Peak and Fort McKinney quadrangles: Darton, 429.
Devil's Tower quadrangle: Darton and O'Harr, 451.
Electric Peak and Sepulchre Mountain: Iddings, 220.
Encampment district copper deposits: Spencer, 385.
Fortieth Parallel Survey: King, 99; Newberry, 112.
Gallatin Mountains: Iddings and Weed, 303.
Igneous rocks.
Absaroka Range: Iddings, 295.
Aladdin quadrangle: Smith, 420.
Black Hills: Russell, 264.
Electric Peak: Iddings, 301.
Extrusive and intrusive: Iddings, 258.
Leucite Hills: Cross, 274.
Sundance folio: Smith, 421.
Yellowstone Park: Iddings, 203, 259.
Intrusive rocks, Gallatin Mountains: Iddings, 304.
Laramie and Sherman quadrangles: Darton *et al.*, 529.
Leucite Hills: Kemp, 270; Kemp and Knight, 375; Schultz and Cross, 594.
Obsidian cliff, Yellowstone Park: Iddings, 186.

Petrology—Continued.

Recent basalts: Iddings, 297.
Rhyolites, Yellowstone Park: Iddings, 307.
Rocks from Wyoming: Hill, 311.
Sundance folio: Darton, 400.
Supermetamorphism and volcanism: Comstock, 170.
Sweetwater County: Schultz, 506.
Tertiary volcanoes, Absaroka Range: Hague, 294, 341.
Volcano, Crandall Basin: Iddings, 299.
Volcano, dissected: Iddings, 231.

Phosphate.

Idaho, Utah, Wyoming: Jones, 470, 615; Waggaman, 541.
Lincoln County: Schultz, 635.
Salt River Range: Mansfield, 693.
United States: Weeks and Ferrier, 469; Weeks, 489; Van Horn, 508; Gale and Richards, 540; Duffield, 542; Breger, 566.
Western Wyoming: Blackwelder, 569.

Physiographic.

Bates Hole: Knight, 338.
Bighorn Mountains, Darton, 427; Mansfield, 438.
Bishop conglomerate: Rich, 545.
Black Hills: Darton, 331.
Cenozoic history, central Wyoming: Baker, 596.
Cenozoic history of Wind River Mountains: Westgate and Branson, 617.
Cody region: Sinclair, 599.
Colorado Plateau province: Gilbert, 81.
Folios: See Folios, U. S. G. S. quadrangle.
Natural bridges: Barnett, 600.
Snowy Range, geology: Weed, 308.
Spirit leveling: Marshall, 645.
Uinta Mountains: Powell, 77.
Western Wyoming: Blackwelder, 666.
Wind River Mountains: Westgate and Branson, 597.
Wyoming fossil fields expedition: Knight, 323.
Yellowstone National Park: Crook, 273.
Huckleberry Mountain: Hague, 305.
Yellowstone region: Cadell, 284.
Pilot Butte oil field: Ziegler, 691.

Pisces.

Diplomystus from Green River shales: Jordan, 549.
Embar formation: Branson, 704.

Placers.

Douglas Creek: Snow, 239.
Wind River and Bighorn placers: Schrader, 637.

Plants. *See* Paleobotany.

Platinum.

In copper ores: Emmons, 373.
Rambler Mine: Kemp, 891.
Rare metals, Rambler Mine: Read, 372.

Platte County.

Central Great Plains: Darton, 399.
Hartville folio: Smith, 366.
Hartville iron ore range: Ball, 466.
Hartville region, copper deposits: Ball, 462.
Iron ore: Leith, 436.
Hartville: Chance, 334.
Sunrise: Vallat, 484.
Mica: Ball, 468.
Sunrise iron mine: Vallat, 484.

Pleistocene. *See* Glacial Geology; Quaternary.

Pliocene. *See* Tertiary.

Poposaurus gracilis, Triassic: Mehl, 675.

Portland cement materials: Ball, 455.

Potash.

Extraction from wyomingite: Wells, 708.
Leucite Hills: Knight and Slosson, 337; Schultz and Cross, 594.

Powder River oil field: Wegemann, 591.

Powder River coal field: Stone and Lupton, 537.

Pre-Cambrian.

Allanite, rock constituent: Iddings and Cross, 165.
Carroll to Yellowstone Park: Dana and Grinnell, 91.
Colorado building stones: Foster, 152.
Fort Leavenworth to Bryan's Pass: Engelmann, 11.

Pre-Cambrian—Continued.

Fortieth Parallel Survey: Zirkel, 90; Hague and Emmons, 93; King, 99; Newberry, 112. Geologist's report: Ricketts, 178. Green River district: Peale, 113. Macfarlane's railway guide: Hague, 114. Minerals, rocks, etc.: Peale, 51. Mississippi drainage area: James, 1. Missouri, headwaters of: Hayden, 18. Nebraska, etc., map: Hayden, 17. North America, geology: Marcou, 6, 12. Northwestern Wyoming: Comstock, 72; Eldridge, 235. Pacific Ocean, geology of route in Colorado and Oregon: Newberry, 7. Rocky Mountain division, sketch of geology: Emmons, 156. Expedition: Fremont, 3. Front Range features: Hayden, 73. Geology, features of: Hills, 209. Scenery: Hayden, 29. Salt Lake, geology and paleontology: Hall, 4. Sedimentary rocks: Weed, 261. *Stratigraphy.* Absaroka folio: Hague, 290. Archean, Wasatch Mountains: Geikie, 129. Bighorn Basin: Fisher, 425. Bighorn Mountains: Carpenter, 101; Darton, 427. Black Hills region: Darton, 510; Meek and Hayden, 16. Central Great Plains: Darton, 399. Encampment district copper deposits: Spencer, 385. Fremont County: Jamison, 561. Hartville folio: Smith, 366. Laramie and Sherman quadrangles: Darton *et al.*, 529. Owl Creek Mountains: Darton, 430. Sundance folio: Darton, 400. Sweetwater district: Endlich, 116. *Territorial Survey reports.* Colorado and New Mexico: Hayden, 22. Missouri Valley: Hayden, 34. Montana and adjacent territories: Hayden, 35.

Pre-Cambrian—Continued.

Ter. Survey reports—Continued. Montana and Wyoming, map: Hayden and Peale, 36. Montana, Wyoming, Idaho, Utah, 6th report: Hayden, 54; Peale, 53. Nebraska, etc.: Hayden, 37. Snake River division, report of: Bradley, 55; Hayden and Bradley, 38. Survey of Territories: Hayden, 39, 40, 94, 100. Wyoming and Idaho: Hayden, 117. Uinta Mountains: Powell, 77. Union Pacific, reconnaissance along: Bannister, 56. United States, map: Hitchcock and Blake, 52; Marcou, 6; McGee, 159. Warren's Geography: Brewer, 195. Wind River district: St. John, 140. Wyoming and Colorado: Hayden, 31. Southeastern Wyoming: Blackwelder, 494. Yellowstone Park: Holmes, 148; Iddings, 203. Yellowstone and Missouri rivers: Hayden, 24.

Quaternary.

Alkali, Bridger Valley: 111. Carroll to Yellowstone Park: Dana and Grinnell, 91. Colorado Plateau province: Gilbert, 81. Eroding power of ice: Newberry, 157. Fort Leavenworth to Bryan's Pass: Engelmann, 11. Great West: Hayden, 127. Green River district: Peale, 113. Macfarlane's railway guide: Hague, 114, 196. North America, geology: Marcou, 6. Northwestern Wyoming: Comstock, 72. Rocky Mountains, features of: Hills, 209. Division: Emmons, 156. Scenery, sun pictures of: Hayden, 29. Front range, features of: Hayden, 73.

Quaternary—Continued.

Stratigraphy.

- Bighorn Basin: Fisher, 425.
- Bighorn Mountains: Salisbury, 440.
- Black Hills: Darton, 331.
- Folios. *See* Folios; U. S. G. S. quadrangles.
- Glaciers, recent: Hayden, 102.
- Rocky Mountain: Geikie, 130.
- United States: Russell, 158.

Sweetwater district: Endlich, 116.

Union Pacific, notes on geology along: Kneeland, 65.

United States, map: McGee, 159.

Warren's Geography: Brewer, 195.

Western Wyoming: Comstock, 57; Blackwelder, 666.

Wind River district: St. John, 140.

Wyoming and Colorado: Hayden, 23, 31.

Yellowstone Park, geology: Holmes, 148.

Geysers: Weed, 202.

Exploration in: Bradley, 63.

Geologic history: Hague, 185.

Obsidian in: Holmes, 125.

Reconnaissance: Hague, 155.

Yellowstone and Firehole rivers: Hayden, 50.

Radioactivity.

Thermal waters, Yellowstone Park: Schlundt and Moore, 527.

Red beds, western Wyoming: Bran- son, 669.

Red beds southeastern Wyoming: Knight, 701.

Reptilia.

Angistorhinus, Triassic phytosaur: Mehl, 620.

Dinosaur, Lance formation: Gilmore, 623.

Iguanodont, dinosaur, epidermis: Osborn, 521.

Lance formation: Gilmore, 705.

Morrison fauna: Mook, 700.

Niobrara County: Lull, 672.

Osteology of Dinosauria: Gilmore, 648.

Platecarpus: Loomis, 674.

Poposaurus gracilis, Triassic: Mehl, 675.

Rhynchocephalian reptile, Juras- sic: Gilmore, 525.

Theselesaurus, Lance formation: Gilmore, 676.

Trachodon, Laramie beds: Stern- berg, 524.

Turtles, Oligocene: Lambe, 629.

Restorations.

Stegosaurus: Gilmore, 648.

Trachodon: Osborn, 602.

Theselesaurus, Lance formation: Gilmore, 676.

Rocky Mountain coal fields: Storrs, 347.

Rock Springs coal field: Schultz, 506, 538.

Rock Springs uplift: Trumbull, 664.

Rocks Described.

Anorthosite, 529.

Gabbro, 529.

Gneiss, 529.

Granite, 529.

Granite porphyry, 529.

Schist, 529.

Salt: Breger, 543.

Salt Creek oil field: Aughey, 166;

Slosson, 250; Knight, 251, 252;

Wegemann, 567; Jamison, 592;

Trumbull, 641.

Shale. *See* Oil Shale.

Sheridan County.

Bald Mountain and Dayton quad- rangles: Darton, 424.

Bighorn Mountains: Darton, 427; Salisbury, 440.

Central Great Plains: Darton, 399.

Coal, Sheridan field: Taff, 539; Simmons, 583.

Chlorite: Wolff, 586.

Silurian.

Bighorn dolomite: Blackwelder, 619.

Fortieth Parallel survey: Hague and Emmons, 93; Newberry, 112.

Geologist's report: Ricketts, 178. Green River district: Peale, 113.

Macfarlane's railway guide: Hague, 114; Scott, 196.

North America, geology: Marcou, 6, 12.

Paleontological reports.

Wyoming: Meek, 48.

Rocky Mountains, primordial of: Hayden, 19.

Salt Lake, geology and paleontol- ogy: Hall, 4.

Sedimentary rocks: Weed, 261.

Stratigraphy.

Absaroka folio: Hague, 290.

Gallatin Mountains: Iddings and Weed, 303.

Northwestern Wyoming: Com- stock, 72; Eldridge, 235.

Teton Range: Iddings, 309.

Silurian—Stratigraphy—Continued.

Uinta Mountains: Marsh, 32; Powell, 77.
Western Wyoming: Comstock, 57.
Supermetamorphism: Comstock, 174.
Supermetamorphism and volcanism: Comstock, 170.
Sweetwater district: Endlich, 116.
Territorial Survey reports.
Montana and adjacent Territories: Hayden, 35.
Montana, Idaho, Wyoming, Utah, report: Peale, 53; Hayden, 54.
Snake River division, exploration of 1872: Bradley, 55.
Survey of Territories: Hayden, 20, 94.
United States, geologic map: Hitchcock and Blake, 52; Marcou, 5; McGee, 159.
Warren's geography: Brewer, 195.
Wind River district: St. John, 140.
Wyoming and Colorado: Hayden, 31.

Silver.

Sunlight district: East, 561.
South Dakota and Wyoming: Henderson, 657, 685.

Soda Lakes.

Alkali lakes and deposits: Knight and Slosson, 332.
Laramie and Sherman quadrangles: Darton *et al.*, 529.
Sodium salts: Ricketts, 194; Schultz, 544.

Stratigraphy. *See also Correlation, different systems, and Folios.*

Tables of Formations.

Bald Mountain and Dayton quadrangles: Darton, 424.
Bighorn Basin: Fisher, 425; Washburne, 486; Washburne, 532; Woodruff, 533; Lupton, 688.
Bighorn County: Hintze, 660.
Bighorn Mountains: Darton, 427, 447.
Big Muddy dome: Barnett, 638.
Black Hills region: Darton, 510.
Carbon County: Veatch, 456.
Cloud Peak and Fort McKinney: Darton, 429.

Stratigraphy—Tables of Formations—

Continued.

Copper Mountain district: Trumbull, 692.
Cretaceous and Tertiary: Veatch, 473.
Douglas oil field: Jamison, 589; Barnett, 639.
Fremont County: Jamison, 564.
Great Divide Basin coal field: Smith, 504.
Lander oil field: Woodruff, 565.
Laramie Basin: Darton and Siebenthal, 500.
Lincoln County: Schultz, 635.
Little Snake River coal field: Ball, 505; Ball and Stebinger, 536.
Moorcroft oil field: Barnett, 640.
Muddy Creek oil field: Jamison, 590.
Paleozoic and Mesozoic, central Wyoming: Darton, 493.
Powder River oil field: Wegemann, 591.
Salt Creek oil field: Wegemann, 567.
Shoshone River section: Hewett, 642.
Sweetwater County: Schultz, 506, 538.
Uinta County: Schultz, 459, 487; Veatch, 433.
Western Wyoming: Gale and Richards, 541.
Wind River region: Woodruff and Winchester, 585; Ziegler, 691.

Sulphate of Soda.

Laramie and Sherman quadrangles: Darton *et al.*, 529.
Laramie Basin: Darton and Siebenthal, 500.
Park County: Hewett, 644.
Sundance folio: Darton, 400.
Sussex coal field: Wegemann, 584.

Sulphur.

Cody: Woodruff, 490.
Mining and refining: Trumbull, 471.
Park County: Hewett, 644.
Thermopolis: Woodruff, 509.
Sunlight Basin: Hewett, 616.
Wyoming mines: Beeler, 480.

Sweetwater County.

Bridger beds: Sinclair, 443.
Coal, Great Divide Basin field: Smith, 504.
Green River Basin: Schultz, 535.
Little Snake River field: Ball, 505; Ball and Stebinger, 536.
Rock Springs field: Schultz, 506, 538.
Leucite Hills: Kemp and Knight, 375; Schultz and Cross, 594.
Nitrate deposits: Gale, 588.
Oil shale, Green River Basin: Winchester, 690.
Oil, Dry Lake dome, Rock Springs: Trumbull, 664.
Sodium salts deposits: Schultz, 544.
Sweetwater mining district: Knight, 333.

Tables of Geologic Formations. See Geologic Formations.

Tables. See Stratigraphy, Tables of formations.

Tertiary.

Absaroka Range, Tertiary volcanoes: Hague, 341.
Artesian borings: Hayden, 95.
Bridger beds: Sinclair, 443; McMasters, 132.
Bridger Basin: Matthew, 518.
Carroll to Yellowstone Park: Dana and Grinnell, 91.
Coal, age of: Cope, 43.
Bitter Creek series: Cope, 42.
Green River Basin: King, 27.
Central region: Cope, 136.
Classification and distribution of Cretaceous: Cope, 76.
Cretaceous and Tertiary: Ward, 141.
Eocene faunal horizons: Granger, 516.
Fortieth Parallel survey: Zirkel, 90; Hague and Emmons, 93; King, 99; Newberry, 112.
Geological horizons determined by vertebrate fossils: Marsh, 213.
Geologist's report: Ricketts, 194.
Great West: Hayden, 127.
Green River district: Peale, 113.
Macfarlane's geological railway guide: Scott, 114; Hague, 196.
Mines, minerals, etc.: Peale, 51.
North America, geology: Marcou, 6, 12.

Tertiary—Continued.

Northwestern Wyoming: Comstock, 72; Eldridge, 235; Sinclair, 571.
Oil, prospecting for: Lakes, 348.
Paleontology.
Apternodus, skull: Matthew, 547.
Brontops robustus: Marsh, 189.
Ceratopsidae: Marsh, 197.
Cretaceous and Tertiary fossils, upper Missouri: Meek, 83.
Colorado, fossils west of Greeley and Evans: Meek, 75.
Dinosauria in transition beds: Cope, 59.
Dinocerata: Marsh, 161, 168.
Eocene fossils, Green River: Cockerell, 519.
Flora, lignite formation: Lesquereux, 88.
Fossil flora, North America: Lesquereux, 84.
Fish, Green River shale: Jordan, 549.
Fresh-water Tertiaries, Green River: Davis, 379.
Gastropoda: Cockerell, 673.
Land shells from Tertiary: Cockerell, 650.
Lignite formation and its flora: Lesquereux, 67.
Loxolophodon and Uintatherium: Osborn, 133.
Mammalia, fossil: Leidy, 47.
Mammals and dinosaurs, Laramie group: Hatcher, 256.
Mammals, extinct: Leidy, 46.
Miocene beds and their vertebrate fauna: Peterson, 442.
Mollusca, Tertiary: Cockerell, 649; White, 146.
Paleontological report: Meek, 48.
Plateau province, paleontology: White, 82.
Plants, lignite formation: Lesquereux, 87.
Tertiary flora, western territories: Cope, 108.
Titanotherium beds: Hatcher, 229.
Turtles, Oligocene: Lambe, 629.
Unio: Cockerell, 677.
Vertebrata, West: Cope, 70.
Colorado: Cope, 71.
Cretaceous: Cope, 60.

Tertiary—Paleontology—Continued.
Eocene: Cope, 60.
Fauna of West: Leidy, 62.
Tertiary: Leidy, 153.
Wasatch and Wind River faunas: Matthew and Granger, 678.
Washakie faunal horizons: Granger, 516.
Wyoming and Idaho, paleontologic survey: White, 124.
Yellowstone fossil forests: Holmes, 126.
Rocky Mountains, surface features of Front Range: Hayden, 73.
Age of lignite: Lesquereux, 68.
Formation along eastern margin: Hayden, 21.
Geologic sketch: Emmons, 156.
Lake basins: Marsh, 74.
Scenery: Hayden, 29.
Salt Lake Valley, geology and paleontology: Hall, 4.
Sedimentary rocks: Weed, 261.
Stratigraphy.
Age of certain beds: Lesquereux, 58.
Aladdin folio: Darton and O'Harr, 398.
Bald Mountain and Dayton quadrangles: Darton, 424.
Barber coal field: Wegemann, 610.
Bear River group: Hayden, 33.
Bighorn Basin: Fisher, 425; Woodruff, 502; Washburne, 532; Sinclair and Granger, 601; Lupton, 688; Hewett and Lupton, 713.
Bighorn Mountains: Darton, 427.
Big Muddy dome: Barnett, 638.
Black Hills region: Darton, 331, 510.
Buffalo coal field: Gale and Wegemann, 534.
Carbon County: Veatch, 456.
Central Wyoming: Hares, 665, 687.
Cloud Peak and Fort McKinney quadrangles: Salisbury, 441.
Devil's Tower quadrangle: Darton and O'Harr, 451.
Douglas oil field: Barnett, 639; Jamison, 589.

Tertiary—Paleontology—Continued.
Encampment copper district: Spencer, 385.
Folios. *See Folios, U. S. G. S. quadrangle.*
Fort Union, Wasatch fossils: Wegemann, 718.
Glenrock coal field: Shaw, 503.
Green River Basin: Winchester, 690.
Lander coal field: Woodruff, 457.
Laramie group: White, 106; Bannister, 121; Peale, 122; Newberry, 198; Stanton and Knowlton, 271.
Laramie and Sherman quadrangles: Darton *et al.*, 529.
Laramie Basin: Darton and Siebenthal, 500.
Lignite group, eastern Colorado: Hayden, 79.
Lignite of North America: Lesquereux, 107.
Lignite of West: Stevenson, 80.
Lincoln County: Schultz, 635.
Little Snake River coal field: Ball, 505; Ball and Stebbing, 526.
Little Powder River coal field: Davis, 381.
Lost Spring coal field: Winchester, 582.
Muddy Creek oil field: Jamison, 590.
North Laramie Mountains: Spencer, 683.
Paleozoic and Mesozoic, Central Wyoming: Darton, 493.
Rock Springs coal field: Schultz, 506, 538.
Salt Creek Oil field: Trumbull, 641; Wegemann, 567.
Salt River Range: Mansfield, 693.
Shoshone River section: Hewett, 642.
Sundance folio: Darton, 400.
Sussex coal field: Wegemann, 584.
Sweetwater County: Schultz, 506.
Territorial Survey reports.
Missouri River, source of: Meek and Hayden, 9.
Montana and adjacent Territories: Hayden, 35.

Tertiary—Territorial Survey reports—

Continued.

- Montana and Wyoming, Idaho, Utah: Hayden, 54; Peale, 53.
Snake River, exploration, 1872; Bradley, 55.
Survey of Territories: Hayden, 39, 40, 94, 100.
Wyoming and Idaho: Hayden, 117, 139.
Wyoming and Montana: Hayden and Peale, 36.
Sweetwater district: Endlich, 116.
Uinta formation: Scott, 200.
Uinta County: Schultz, 459; Veatch, 433.
Uinta Mountains: Marsh, 32; Powell, 77.
Upper Eocene lacustrine formations: Scott, 182.
Wasatch deposits: Loomis, 478.
Wasatch group: Hayden, 109.
Washakie formations: Sinclair, 515.
Western Wyoming: Blackwelder, 666.
Wind River Basin: Granger, 554; Sinclair and Granger, 572; Ziegler, 691.
Wind River region: St. John, 140; Woodruff and Winchester, 585.
Western Wyoming: Comstock, 57.
Wyoming and Idaho border: Bregger, 543.

Topographic Maps.

- Aladdin quadrangle, Wyoming-South Dakota, Crook County, 1903.
Bald Mountain quadrangle, Sheridan and Big Horn counties, 1901.
Blue Mesa quadrangle, Washakie County, 1910.
Canyon sheet, Yellowstone Park, 1895.
Cheyenne quadrangle, Laramie County, 1911, 1914.
Cloud Peak quadrangle, Big Horn and Washakie counties, 1901.
Crandall quadrangle, Park County, 1909.
Crow Creek quadrangle, Lincoln County, 1915.
Dayton quadrangle, Sheridan and Johnson counties, 1901.
Devil's Tower quadrangle, Crook County, 1905.
Encampment special map, Carbon County, 1903.

Topographic Maps—Continued.

- Fort McKinney quadrangle, Johnson County, 1903.
Fort Steele sheet, Carbon County, 1893.
Freedom quadrangle, Idaho-Wyoming, Lincoln County, 1915.
Fremont Peak quadrangle, Fremont County, 1909.
Gallatin quadrangle, Yellowstone Park, 1901.
Gilbert Peak quadrangle, Uinta County, 1906.
Goshen Hole quadrangle, Goshen County, 1899.
Grand Teton quadrangle, Lincoln County, 1901, 1906.
Gros Ventre quadrangle, Fremont and Lincoln counties, 1910.
Hanna quadrangle, Carbon County, 1914.
Hartville quadrangle, Platte County, 1901.
Hayden Peak quadrangle, Utah-Wyoming, Lincoln County, 1903.
Grass Creek Basin (Ilo), quadrangle, Hot Springs County, 1913.
Ishawooa quadrangle, Park County, 1899.
Kirwin quadrangle, 1906.
Lake quadrangle, Yellowstone Park and Lincoln County, 1911.
Laramie quadrangle, Albany County, 1902, 1908.
Marsh Peak quadrangle, Utah-Wyoming, Sweetwater County, 1908.
Medicine Bow quadrangle, Carbon and Albany counties, 1908.
Meetetse quadrangle, Park County, 1913.
Montpelier quadrangle, Idaho-Wyoming (Lincoln County) 1909.
Mount Leidy quadrangle, Lincoln County, 1902.
Newcastle quadrangle, Weston County, 1901.
Oregon Basin quadrangle, Park County, 1913.
Patrick sheet, Goshen County, 1903.
Randolph quadrangle, Idaho-Wyoming, Lincoln County, 1911.
Rock Springs quadrangle, Sweetwater County, 1910.
Sherman quadrangle, Laramie and Albany counties, 1911.

Topographic Maps—Continued.

Shoshone sheet, Yellowstone Park, 1895.
Sundance quadrangle, Crook and Weston counties, 1890, 1902.
Walcott quadrangle, Carbon County, 1912, 1914.
Yount's Peak quadrangle, Fremont and Park counties, 1907.

Triassic.

Stratigraphy.

Bighorn Basin: Fisher, 425; Hewett and Lupton, 713.
Bighorn Mountains: Darton, 427; Lupton and Condit, 686.
Black Hills: Stone, 579; Darton, 331, 510; Hovey, 358.
Central Great Plains: Darton, 399.
Central Wyoming: Hares, 687.
Douglas oil field: Barnett, 630; Jamison, 589.
Embar and Chugwater formations: Condit, 697.
Encampment copper deposits: Spencer, 385.
Folios. *See Folios: U. S. G. S. Quadrangle.*
Fremont County: Jamison, 564.
Gypsum deposits: Knight, 390.
Lander coal field: Woodruff, 457.
Laramie Basin: Darton and Siebenthal, 500.
Lincoln County: Schultz, 635.
North Laramie Mountains: Spencer, 683.
Paleozoic and Mesozoic, central Wyoming: Darton, 493.
Salt River Range: Mansfield, 693.

Paleontology.

Atlantosaurus and Titanotherium beds: Peck, 394.
Hallopus, Baptonodon and Atlantosaurus beds (Marsh): Williston, 413.
Poposaurus gracilis: Mehl, 675.

Uinta County.

Brider beds: Sinclair, 443.
Coal: Schultz, 459; Veatch, 433.
Gold: Schultz, 463.
Oil: Knight, 289; Veatch, 433.
Spring Valley field: Merrill, 593.
Phosphate: Blackwelder, 569.

Unconformities.

Lance formation: Knowlton, 575.

Underground Waters.

Black Hills region: Darton, 510.
Laramie Basin: Darton and Siebenthal, 500.
Thermal waters, Yellowstone Park: Hague, 577.
Hot springs, Thermopolis: Darton, 450.

Upper Silurian. *See Silurian.*

Vertebrata. *See also Aves; Mammalia; Pisces; Reptilia.*

Converse County: Sternberg, 524.
Miocene: Sternberg, 618.
U. P. R. R. fossil fields: 520.
Vertebrate faunae, Nebraska: Peterson, 442.

Volcanic Ash.

Laramie and Sherman quadrangles: Darton *et al.*, 529.

Volcanic rocks. *See Igneous and volcanic rocks.*

Washakie County.

Bighorn Basin: Fisher, 425.
Coal, Bighorn Basin field: Woodruff, 502.
Gypsum, Bighorn Mountains: Lupton and Condit, 686.
Oil, Bighorn Basin: Hewett and Lupton, 713.
Bonanza and Cottonwood fields: Knight and Slosson, 371.

Water Supply Papers.

Patrick and Goshen Hole: Adams, 345.
Lodgepole Valley: Meinzer, 717.

Weston County.

Black Hills region: Darton, 510; Stone, 579.
Coal, Cambria field: Simmons, 580.
Central Great Plains: Darton, 399.
Igneous rocks, Sundance folio: Smith, 421.
Oil, prospective fields: Trumbull, 614.
Sundance folio: Darton, 400.

Water, Underground. *See Underground Waters.*

Wayan quadrangle: Mansfield, 702.

Weathering of coal in arid regions of Green River Basin: Schultz, 535.

- Wind River region: Woodruff and Winchester, 585.
- Wind and Bighorn rivers, gold placers: Schrader, 637.
- Wyoming, Geologist's Office.** List of publications.
- Albany County: Beeler, 423.
 - Asbestos: Beeler, 530, 557.
 - Grand Encampment copper district: Beeler, 407.
 - Laramie Peak copper district: Beeler, 388.
 - Mineral resources: Beeler, 401.
 - Mines in 1907: Beeler, 480.
 - South Pass gold district: Beeler, 370, 389.
 - State Geologist's report: Beeler, 365.
 - Bulletin 1, Mineral resources: Jamison, 556.
 - Bulletin 2, Fremont County: Jamison, 564.
 - Bulletin 3a, Douglas oil field: Jamison, 589.
 - Bulletin 3b, Muddy Creek oil field: Jamison, 590.
 - Bulletin 4, Salt Creek oil field: Jamison, 592.
 - Bulletin 5, Prospective oil fields: Trumbull, 614.
 - Bulletin 6, Mining laws: Trumbull, 609.
 - Bulletin 7, Atlantic City gold district: Trumbull, 636.
 - Bulletin 8, Salt Creek oil field: Trumbull, 641.
 - Bulletin 9, Biennial report, 1913-1914: Trumbull, 655.
 - Bulletin 10, Basin-Greybull oil and gas fields: Hintze, 660.
 - Bulletin 11, Pt. I, Little Buffalo oil and gas field: Hintze, 603.
 - Pt. II, Grass Creek oil and gas field: Hintze, 662.
 - Bulletin 12, Light oil fields: Trumbull, 689.
 - Bulletin 13, Pilot Butte oil field: Ziegler, 691.
 - Bulletin 14, Byron oil and gas field: Ziegler, 714.
 - Bulletin 15, Oregon Basin gas and oil field: Ziegler, 715.
 - Bulletin 16, Mining laws: Trumbull, 710.
 - Maps: State topographic map, 695.
Big Muddy-Douglas, 661.
Rock Springs uplift (Dry Lake dome), 664.
- Yellowstone National Park.**
- Absarokite-shoshonite-banakite series: Iddings, 245, 296.
 - Basalts: Iddings, 297.
 - Cambrian fossils: Walcott, 298.
 - Carroll to Yellowstone Park: Dana and Grinnell, 91.
 - Cretaceous and Tertiary plants: Newberry, 25.
 - Devonian and Carboniferous fossils: Girty, 300.
 - Diatom beds: Weed, 201.
 - Eruptive rock: Iddings, 220.
 - Floating sands and stones: Hovey, 330.
 - Folio: Hague, 257.
 - Fossil flora: Knowlton, 302.
 - Fossil forests: Holmes, 126; Weed, 221; Knowlton, 286, 653.
 - Fossil wood: Platen, 496, 526.
 - Geological chemistry: Beam, 128.
 - Geology: Holmes, 148; Fenneman, 630.
 - Geology; Gallatin Mountains: Iddings and Weed, 303.
 - Huckleberry Mountain:
Hague, 305.
 - Snowy Range: Weed, 308.
 - Teton Range: Iddings, 309.
 - Geological history: Hague, 185, 233, 607; Crook, 273.
 - Geysers: Hayden, 50; Comstock, 89, 92, 98; LeConte, 110; Geikie, 137; Peale, 154; Weed, 202, 605; Cadell, 234; Jagger, 287; Anonymous, 709.
 - Hot springs: Weed, 232.
 - Igneous rocks: Iddings, 203, 258, 259, 295; Hague, 260.
 - Intrusive rock: Iddings, 304.
 - Mesozoic fossils: Stanton, 306.
 - Northern Pacific Route: Campbell *et al.*, 679.
 - Northwestern Wyoming: Comstock, 72.
 - Obsidian: Holmes, 125; Iddings, 186.
 - Overland Route: Lee *et al.*, 656.
 - Physiography: Martonne, 631.
 - Piracy of Yellowstone: Goode, 310.
 - Reconnaissance: Hague, 155.
 - Report: Hague, 171, 191.
 - Rhyolite: Wadsworth, 151; Iddings, 307.
 - Sedimentary rocks: Weed, 261.
 - Silica and lime deposition: Darton, 606.
 - Snake River, sources: Hayden and Bradley, 38.

Yellowstone Nat'l Park—Continued.

Tertiary flora: Knowlton, 262.
Thermal springs: Peale, 149;
Schlundt and Moore, 527; Hague,
577.
Travertine deposits: Jardin, 237.
Volcanic rocks: Dutton, 150.

Yellowstone Nat'l Park—Continued.

Volcanoes: Toula, 177; Hague, 341.
Wonders: Richardson, 64.
Yellowstone district: Bradley, 63.
Yellowstone and Missouri rivers:
Hayden, 18, 24.
Yellowstone region, Hines, 26.

