DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY
GEORGE OTIS SMITH, DIRECTOR

BULLETIN 524

BIBLIOGRAPHY

OF

NORTH AMERICAN GEOLOGY

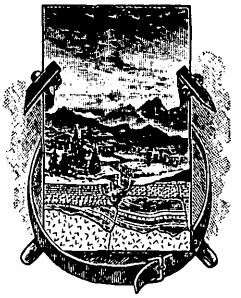
FOR

1911

WITH SUBJECT INDEX

BY

JOHN M. NICKLES



WASHINGTON
GOVERNMENT PRINTING OFFICE
1912

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BIBLIOGRAPHY OF NORTH AMERICAN GEOLOGY FOR 1911, WITH SUBJECT INDEX.

By JOHN M. NICKLES.

INTRODUCTION.

The bibliography of North American geology, including paleontology, petrology, and mineralogy, for the year 1911 follows the plan and arrangement of its immediate predecessors, the bibliographies for 1906–7, 1908, 1909, and 1910 (Bulletins 372, 409, 444, and 495 of the U. S. Geological Survey). It includes publications bearing on the geology of the Continent of North America and adjoining islands, also Panama and the Hawaiian Islands. Papers by American writers on the geology of other parts of the world are not included. Textbooks and papers general in character by American authors are included; those by foreign authors are excluded unless they appear in American publications.

As heretofore, the papers, with full title and medium of publication and explanatory note when the title is not fully self-explanatory, are listed under the authors, arranged in alphabetic order. The author list is followed by an index to the literature listed. In this index the entries in one alphabet are of three kinds—first, subject, with various subdivisions, to enable the specialist to ascertain readily all the papers bearing on a particular subject or area; second, titles of papers, many of them abbreviated or inverted, under their leading words; and third, cross references, which have been freely used to avoid too much repetition. The subjects have been printed in black-faced type, the titles of papers and cross references in ordinary type. As it may not be always obvious which subject headings have been adopted, a classified scheme of those used immediately precedes the index.

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1122. Contributions to economic geology (short papers and preliminary reports), 1910. Part I. Metals and nonmetals except fuels. U. S. Geol. Survey, Bull. 470, 557 pp., 17 pls., 64 figs., 1911.

The papers in this bulletin have been entered under the individual authors. Interspersed are lists of the Survey publications on various economic products.

1123. Mineral resources of the United States. Calendar year, 1909. Part I, Metals. 617 pp., 1 pl. (map, in pocket), 4 figs., 1911. Part II, Nonmetals. 942 pp., 6 figs., 1911.

Contains the following papers, mainly statistical in character, relating to the production, condition of the industry, etc., but also in some cases including notes on the geology and occurrence of the products treated:

PART I.

Summary of mineral production in the United States in 1909, compiled by W. T. Thom, pp. 7–63.

Metals and metallic ores in 1908 and 1909, by Waldemar Lindgren, pp. 65–69.

Iron ore, pig iron, and steel, by Ernest F. Burchard, pp. 71–99.

Movement of Lake Superior iron ore in 1909, by John Birkinbine, pp. 101–105, 1 pl. (map, in pocket).

Manganese ore, by Ernest F. Burchard, pp. 107–119.

Gold and silver, by H. D. McCaskey, pp. 121–149.

Copper, by B. S. Butler, pp. 151–180.

Lead, by C. E. Siebenthal, pp. 181–201.

Zinc, by C. E. Siebenthal, pp. 203–220.

Gold, silver, copper, lead, and zinc in the Western States (mine production):

Alaska, by A. H. Brooks, pp. 223–232.

Arizona, by V. C. Heikes, pp. 232–259.

California, by Charles G. Yale, pp. 259–290.

Colorado, by Charles W. Henderson, pp. 290–333.

Idaho, by C. N. Gerry, pp. 333–357.

Montana, by V. C. Heikes, pp. 357–386.

Nevada, by Chester Naramore, pp. 386–430.

New Mexico, by Charles W. Henderson, pp. 430–441.

Oregon, by Charles G. Yale, pp. 441–450.

South Dakota; Texas, by Charles W. Henderson, pp. 450–454.

Utah, by V. C. Heikes, pp. 456–485.

Washington, by Charles G. Yale, pp. 485–491.

Wyoming, by Charles W. Henderson, pp. 491–494.

Silver, copper, lead, and zinc in Central States (mine production):

Arkansas, Illinois, Iowa, Kansas, Kentucky, Missouri, Oklahoma, Wisconsin, by C. E. Siebenthal, pp. 495–507, 516–531.

Michigan, by B. S. Butler, pp. 507–516.

Gold, silver, copper, lead, and zinc in the Eastern States (mine production), by H. D. McCaskey, pp. 533–547.

Quicksilver, by H. D. McCaskey, pp. 549–559.

Bauxite and aluminum, by W. C. Phalen, pp. 561–572.

Antimony; bismuth; tungsten; nickel and cobalt; vanadium; titanium; molybdenum, uranium, and tantalum; tin; selenium, by Frank L. Hess, pp. 503–590, 605.

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Platinum and allied metals, by Waldemar Lindgren, pp. 595–601.

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PART II.

FUELS.

Coal; coal briquetting; coke, by Edward W. Parker, pp. 5–267.

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United States Geological Survey—Continued.

1123. Mineral resources of the United States—Continued.

STRUCTURAL MATERIALS.

Cement, by Ernest F. Burchard, pp. 433–452.
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ABRASIVE MATERIALS.

Abrasive materials, by W. C. Phalen, pp. 609–627.

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Arsenic, by F. L. Hess, pp. 629–630.
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Barytes and strontium; mineral paints, by E. F. Burchard, pp. 697–720.

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Asphalt, related bitumens, and bituminous rock, by David T. Day, pp. 731–733.
Fuller's earth, by F. B. Van Horn, pp. 735–738.
Gems and precious stones, by D. B. Sterrett, pp. 739–808.
Graphite, by E. S. Bastin, pp. 809–840.
Magnesite, by Charles G. Yale, pp. 841–843.
Mica, by D. B. Sterrett, pp. 845–856.
Mineral waters, by S. Sanford, pp. 857–895.
Monazite and zircon, by D. B. Sterrett, pp. 897–905.
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Talc and soapstone, by J. S. Diller, pp. 915–923.

1124. Mineral resources of the United States. Calendar year, 1910. Part I, Metals. 796 pp., 1 pl. (map, in pocket), 9 figs., 1911. Part II, Nonmetals. 1005 pp., 17 pls. (including 3 maps, in pocket), 10 figs., 1911.

Contains the following papers, mainly statistical in character, relating to the production, condition of the industry, etc., but also in some cases including notes on the geology and occurrence of the products treated:

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California, by Charles G. Yale, pp. 347–384.
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Nevada, by V. C. Heikes, pp. 498–534.
New Mexico, by Charles W. Henderson, pp. 534–552.
Oregon, by Charles G. Yale, pp. 553–565.
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United States Geological Survey—Continued.

1124. Mineral resources of the United States—Continued.

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Washington, by C. N. Gerry, pp. 597–605.
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Silver, copper, lead, and zinc in Central States (mine production), by J. P. Dunlop, B. S. Butler, and C. E. Siebenthal, pp. 611–674.
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Mica, by D. B. Sterrett, pp. 915–920.
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Quartz and feldspar, by E. S. Bastin, pp. 963–975.
Talc and soapstone, by J. S. Diller, pp. 977–986.

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Upham, Warren—Continued.

1128. Chains of lakes in Martin County, Minn., as evidence of extensive recession and readvance of the ice-sheet. Abstract: Science, new ser., vol. 33, pp. 467–468, March 24, 1911.

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Mineral resources of the United States, 1910: Phosphate rock. See no. 1124.

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1135. A discussion of the formulas of pearcite and polybasite. Am. Jour. Sci., 4th ser., vol. 32, pp. 40–44, July, 1911.

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1142. Coal deposits near Pinedale, Navajo County, Arizona. U. S. Geol. Survey, Bull. 431, pp. 239–242, 1 pl. (map), 1911.

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1143. Graphite in vein quartz. Science, new ser., vol. 33, p. 38, January 6, 1911.

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1152. Cambrian geology and paleontology, no. 2: Middle Cambrian Merostomata. Smithsonian Inst., Misc. Coll., vol. 57, no. 2, pp. 17–40, 6 pls., April 8, 1911.

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Etowah County, pp. 709–735.
Henry County, pp. 483–513.
Jefferson County, pp. 737–769.
Lamar County, pp. 455–482.
California, Modesto-Turlock area, and eastwardly, pp. 1229–1294.
Pajaro Valley, pp. 1331–1372.
Portersville area, pp. 1295–1330.
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CLASSIFIED SCHEME OF SUBJECT HEADINGS.

1. GENERAL.

Associations, meetings; Addresses; History; Philosophy; Biography; Bibliography; Educational; Text-books.

Classification; Nomenclature; Cartography; Technique; Fieldwork; Surveys; Borings.

Geochemistry; Chemical analyses (list); Atmosphere.

Miscellaneous.

2. REGIONAL.

The States of the Union, Alabama, etc.; the Provinces of Canada, Alberta, etc.; Greenland; Mexico; the countries of Central America; the West Indies, and the single islands; the Hawaiian Islands.

3. ECONOMIC.

Ore deposits, origin; Contact phenomena.

Gold; Placers; Black sands; Silver; Quicksilver; Nickel; Cobalt; Copper; Lead; Zinc; Iron; Magnetite; Manganese; Tin; Aluminum; Bauxite; Antimony; Bismuth; Tungsten; Wolframite; Vanadium; Uranium; Carnotite ores; Molybdenum; Molybdenite; Titanium; Rutile; Platinum; Monazite; Rare earths; Tantalum; Selenium; Tellurium; Zircon.

Coal; Anthracite; Coke; Peat; Lignite; Bituminous rock; Natural gas; Petroleum; Oil shales; Asphalt; Albertite; Gilsonite; Grahamite; Ozokerite.

Stone; Building stone; Granite; Bluestone; Limestone; Lime; Marble; Onyx; Sandstone; Clay; Kaolin; Bentonite; Fire clay; Ganister; Slate; Shale; Marl; Sand; Glass sand; Sand-lime brick; Gravel; Cement and cement materials; Concrete materials; Road materials; Trap; Steatite; Soapstone; Talc.

Precious stones; Diamonds; Sapphires; Turquoise; Tourmaline.

Abrasive materials; Corundum; Emery; Garnet; Diatomaceous earth; Tripoli; Volcanic ash; Millstones; Novaculite.

Asbestos; Feldspar; Mica; Quartz; Gypsum; Graphite; Fuller's earth; Infusorial earth; Magnesite; Mineral paint; Chromium; Chromite; Chromic iron ore; Fluorspar; Barite; Barytes; Strontium; Arsenic; Pyrite; Sulphur; Sulphate of soda; Cryolite; Phosphorus; Phosphate; Apatite; Glauconite; Borax; Bromine; Salt; Natron deposits.

4. DYNAMIC AND STRUCTURAL.

Earth, genesis of; Earth, age of; Earth, interior of; Earth, temperature of.

Volcanoes; Earthquakes; Seismographs.

Isostasy; Orogeny; Changes of level.

Magmas; Intrusions; Dikes; Laccoliths; Metamorphism; Contact phenomena.

Deformation; Folding; Faulting; Unconformities.

Conglomerates; Concretions; Stalactites; Jointing; Cleavage.

Sedimentation; Denudation; Erosion; Caves; Sink holes; Erratic bowlders; Weathering; Wind work; Dunes; Loess; Landslides.

Glaciers; Glacial erosion; Eskers; Kames; Moraines; Kettle holes.

Drainage changes.

5. PHYSIOGRAPHIC.

Geomorphy; Relief maps.

Valleys; Cirques; Deserts; Dunes; Deltas; Alluvial fans; Eskers; Kames; Mounds, natural; Natural bridges; Sink holes; Karsts.

Lakes; Swamps; Marshes; Everglades; Terraces; Shore lines; Rivers; Meanders; Falls; Springs.

6. HISTORICAL OR STRATIGRAPHIC.

Geologic history; Geologic time; Paleogeography; Paleogeographic maps; Paleoclimatology.

Geologic maps; Geologic formations described (list).

Pre-Cambrian, Cambrian; Ordovician; Silurian; Devonian; Carboniferous; Triassic; Jurassic; Cretaceous; Tertiary; Quaternary; Recent; Glacial geology; Glaciation; Glacial lakes; Ice ages.

7. PALEONTOLOGY.

Geographic distribution.

Vertebrata; Man, fossil; Mammalia; Aves; Reptilia; Amphibia; Pisces; Footprints, fossil.

Invertebrata; Arthropoda; Trilobita; Ostracoda; Insecta; Arachnida; Myriapoda.

Mollusca; Cephalopoda; Gastropoda; Pelecypoda.

Molluscoidea; Brachiopoda; Bryozoa; Vermes.

Echinodermata; Echinoidea; Asteroidea; Crinoidea; Crystoidea.

Cœlenterata; Anthozoa; Hydrozoa; Graptolites.

Protozoa; Spongida; Foraminifera.

Paleobotany; Diatoms.

Problematica.

8. PETROLOGY.

Rocks, origin; Rocks described (list); Igneous and volcanic rocks; Rock-forming minerals.

9. MINERALOGY.

Minerals described (list); Crystallography; Pseudomorphism; Paragenesis of minerals; Rock-forming minerals; Meteorites.

10. UNDERGROUND WATER.

Mine waters; Thermal waters; Geysers; Springs; Mineral waters.

11. SOILS.

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Crocidolite, 1166.
Cummingtonite, 1000.
Diabase, 159.
Diorite, 952.
Dunite, 64.
Emery, 952.
Essexite, 869.
Evansite, 974.
Gabbro, 307, 869, 952.
Garnet, 1000.
Gneiss, 159, 617.
Granite, 952, 1166.
Gypsum, 1910.
Hessose, 869, 951, 952.
Heterosite, 974.
Hexahydrite, 570.
Hinsdalite, 550.
Hornblende, 1000.
Hornblende norite, 952.
Hudsonose, 952.
Hulsite, 974.
Iron ore, 161.
Jamesonite, 974.
Lassenose, 952.
Limburgose, 952.
Limestone, 159.
Ludwigite, 974.
Manganotantalite, 974.
Mica, 1000.
Mineral water, 161.
Molybdic ocher, 974.
Molybdite, 974.
Nordmarkite, 869.
Norite, 869, 952.
Ochre, 161.
Olivine, 64.
Olivine pyroxenite, 951, 952.
Ossipite, 869.
Paigeite, 974.
Parisite, 839.
Peridotite, 951.
Petroleum, 1909.
Phonolite, 159, 1000.
Plauenite, 869.
Porphyry, 1000.
Powellite, 974.
Purpurite, 974.
Pyrite, 1000.
Pyroxenite, 952.
Pyrrhotite, 1000.
Riebeckite, 839, 1166.
Schist, 952.
Serpentine, 64.
Shoshonose, 952.
Slate, 1000, 1910.
Syenite, 869.
Synchisite, 839.
Tourmaline, 974.
Trachydolerite, 307.
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Umptekite, 869.
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Aegirite, 839, 1166.
Albite, 974.
Almandite, 570.
Amphibole, 570.
Anglesite, 456.
Apatite, 171.
Arsenopyrite, 1000.
Atacamite, 456.
Awaruite, 570.
Axinite, 570, 974.
Barite, 550, 974.
Bismite, 974.
Calcite, 456, 617, 974, 1166.
Caledonite, 456.
Carphosiderite, 988.
Cerargyrite, 171.
Cerussite, 456.
Chalcocite, 550.

Chalcopyrite, 550, 617.
Chlorite, 617, 1000.
Cinnabar, 171.
Corkite, 988.
Covellite, 550.
Cummingtonite, 1000.
Cuprodescloizite, 456.
Diamond, 570.
Dolomite, 617.
Embolite, 171.
Epidote, 617.
Evansite, 974.
Feldspar, 617, 1166.
Fluorite, 839, 1166.
Galena, 550.
Garnet, 1000.
Goyazite, 988.
Hamlinite, 988.
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Heterosite, 974.
Hexahydrite, 570.
Hinsdalite, 550.
Hornblende, 617, 1000.
Hübnerite, 171.
Hulsite, 974.
Ilmenite, 869.
Iodyrite, 171.
Jamesonite, 974.
Jarosite, 171.
Linarite, 456, 570.
Ludwigite, 974.
Manganotantalite, 974.
Mica, 1000.
Microcline, 839.
Molybdic ocher, 974.
Molybdite, 974.
Neptunite, 974.
Octahedrite, 839, 1166.
Paigeite, 974.
Parisite, 839, 1166.
Phenacite, 974.
Powellite, 974.
Proustite, 550.
Purpurite, 974.
Pyrargyrite, 550.
Pyrite, 550, 617, 1000.
Pyrrhotite, 1000.
Quartz, 550, 617, 1166.
Rhodochrosite, 550.
Riebeckite, 839, 1166.
Saponite, 570.
Scheelite, 171.
Siderite, 974.
Sphalerite, 550, 617.
Tetrahedrite, 550.
Tourmaline, 974.
Utahite, 988.
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Andesite, 924.
Andose, 869, 952.
Anorthosite, 64, 843.
Aplite, 869, 952.
Augite norite, 952.
Basalt, 307, 924.
Biotite-augite norite, 952.
Biotite-hornblende norite, 952.
Biotite norite, 952.
Camptonite, 843.
Dacite porphyry, 952.
Diabase, 64, 843, 1180.
Diorite, 64, 617, 835, 952.
Dolomite, 64.
Emery, 952.
Felsite, 835.
Gabbro, 64, 307, 835, 869, 952, 1180.
Garnet rocks, 952.
Gneiss, 64, 617, 835, 843.
Granite, 64, 835, 952, 1166.
Granodiorite, 64, 843, 924, 1180.
Hawaiite, 307.
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Hornblende norite, 952.
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Hornblendite, 64, 617, 952.
Hudsonose, 952.
Hyperite, 952.
Lamprophyre, 869.
Lassenose, 952.
Limburgose, 952.
Liparase, 869.
Monzonase, 869.
Monzonite, 843, 869.
Nordmarkose, 869.
Norite, 64, 869, 952.
Olivine-augite norite, 952.
Olivine pyroxenite, 952.
Ossipite, 869.
Pegmatite, 952, 1166.
Peridotite, 64, 952, 1180.
Phonolite, 1000.
Pitchstone, 924.
Porphyrite, 64.
Porphyry, 835, 1000.
Pyroxenite, 64, 952, 1180.
Quartz diorite gneiss, 617.
Quartz norite, 952.
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Rhyolite, 924, 1000.
Saxonite, 1180.
Schist, 835, 924, 952, 1180.
Serpentine, 952.
Shoshonose, 952.
Slate, 1000.
Sodalite syenite, 952.
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Trachydolerite, 307.
Umptekite, 869.
Wernerite schist, 952.

GEOLOGIC FORMATIONS DESCRIBED.

Agawa formation, Algonkian, Minnesota: Van Hise and Leith, 1132.
Ajibik quartzite, Algonkian, Michigan: Van Hise and Leith, 1132.
Akron dolomite, Silurian, New York: Ulrich, 1116.
Albany formation, Texas: Gordon, 431.
Allegheny formation, Carboniferous, Pennsylvania: Phalen and Martin, 862.
Allegheny formation, Pennsylvanian, Pennsylvania: Munn, 813; Shaw and Munn, 1012; Shaw *et al.*, 1014.
Allentown limestone, Ozarkian, Pennsylvania: Ulrich, 1116.
Altamaha (Lafayette) formation, Pliocene, Georgia: Veatch and Stephenson, 1144.
Altamont limestone, Pennsylvanian, Oklahoma: Hutchison, 542.
Alum Bluff formation, Oligocene, Georgia: Veatch and Stephenson, 1144.
Ames (crinoidal) limestone, Carboniferous, West Virginia: Krebs, 630.
Ames limestone, Carboniferous, Pennsylvania: Raymond, 900.
Ames limestone, Carboniferous, West Virginia: Hennen, 486.
Ames limestone member, Pennsylvanian, Pennsylvania: Munn, 813; Shaw and Munn, 1012.
Amsden formation, Carboniferous, Wyoming: Jamison, 556.
Amsden formation, Pennsylvanian and Mississippian, Wyoming, Blackwelder, 109.
Amsterdam limestone, Ordovician, Champlain Valley: Ulrich, 1116.
Amsterdam limestone, Ordovician, New York: Cushing, 297; Miller, 794.
Anamosa, Silurian, Iowa: Ulrich, 1116.
Anderdon limestone beds, Devonian, Ontario: Nattress, 817.
Andrews schist, Cambrian, Tennessee: Emmons and Laney, 373.
Angelina beds, Eocene, Texas: Dumble, 353.
Animikie group, Algonkian, Minnesota: Van Hise and Leith, 1132.
Ankareh shale, Triassic or Carboniferous, Idaho: Richards and Mansfield, 936.
Ankareh shale, Triassic or Carboniferous, Wyoming: Blackwelder, 109.
Annona chalk, Cretaceous, Texas: Gordon, 430.
Antietam sandstone, Cambrian, Maryland basin: Ulrich, 1116.
Antigua formation, Cretaceous, Antigua: Guppy, 458.
Apalachicola group, Oligocene, Georgia: Veatch and Stephenson, 1144.
Apison shale, Cambrian, Appalachian Valley: Ulrich, 1116.
Aquia formation, Eocene, Maryland: Miller, 780.
Aquia formation, Eocene, Virginia: Darton, 309.
Arago formation, Eocene, Oregon: Diller and Pishel, 341.
Arbuckle limestone, Cambrian and Ordovician, Oklahoma: Hutchison, 542.
Arbuckle limestone, Canadian, Oklahoma: Ulrich, 1116.
Ardness formation, Mississippian, Nova Scotia: Williams, 1207.
Arisaig group, Silurian, Nova Scotia: Williams, 1207.
Arnheim, Silurian, Ohio: Ulrich, 1116.
Arnoldsburg sandstone, Carboniferous, West Virginia: Hennen, 486.
Arpin conglomerate, Algonkian, Wisconsin: Van Hise and Leith, 1132.
Arundel formation, Cretaceous, Maryland: Miller, 780.
Athens, Ordovician, Appalachian Valley: Ulrich, 1116.
Athens (Rockmart), Ordovician, Tennessee: Ulrich, 1116.
Atoka formation, Carboniferous, Oklahoma: Hutchison, 542.
Attalla conglomerate, Ordovician, Alabama: Ulrich, 1116.
Austin group, Cretaceous, Texas: Gordon, 430.
Axeman limestone, Canadian, Pennsylvania: Ulrich, 1116.
Aylmer formation, Ordovician, Canada: Raymond, 898.
Bad River limestone, Algonkian, Michigan and Wisconsin: Van Hise and Leith, 1132.
Bailey limestone, Devonian, Illinois, Missouri: Ulrich, 1116.
Bainbridge limestone, Silurian, Missouri: Ulrich, 1116.
Bald Eagle sandstone, Ordovician, Pennsylvania: Ulrich, 1116.
Bald Hill granite gneiss, New York: Gordon, 429.
Baltimore gneiss, pre-Cambrian, Maryland: Miller, 780.
Bandera shale, Pennsylvanian, Oklahoma: Hutchison, 542.
Banff limestone, Carboniferous, Alberta: Shimer, 1022.
Banff limestones (lower), Devonian, Alberta: Malloch, 730.
Banff limestones (upper), Carboniferous, Alberta: Malloch, 730.
Banff shale, Carboniferous, Alberta: Shimer, 1022.
Banff shales (lower), Carboniferous ?, Alberta: Malloch, 730.
Banff shales (upper), Triassic, Alberta: Malloch, 730.
Bangor limestone, Mississippian, Alabama: Munn, 814.
Bangor limestone, Mississippian, Tennessee: Bassler, 76.
Bangor limestone, Tennessean, Allegheny region: Ulrich, 1116.
Baraboo quartzite, Algonkian, Wisconsin: Van Hise and Leith, 1132.
Barnwell sand, Eocene, Georgia: Veatch and Stephenson, 1144.
Bassardville limestone, Silurian, Appalachian Valley: Ulrich, 1116.
Bass Island, Silurian, Ohio: Ulrich, 1116.
Batesville sandstone, Tennessean, Ozark region: Ulrich, 1116.
Baxter Brook formation, Cambrian, Nova Scotia: Williams, 1207.
Beacon Hill formation, Pliocene, New Jersey: Kümmel, 632.
Bearpaw shale, Cretaceous, Montana: Lupton, 713.

Bear River formation, British Columbia: McConnell, 719.
Bear River formation, Cretaceous, Wyoming: Blackwelder, 109.
Bears Brook formation, Cambrian, Nova Scotia: Williams, 1207.
Beaver limestone, Cambrian, Appalachian Valley: Ulrich, 1116.
Beckwith formation, Jurassic and Cretaceous, Wyoming: Blackwelder, 109.
Becraft formation, Devonian, New York: Ulrich, 1116.
Becraft limestone, Devonian, New York: Berkey, 94.
Bedford shale, Waverlyan, Ohio: Ulrich, 1116.
Beechhill Cove formation, Silurian, Nova Scotia: Williams, 1207.
Beech River, Silurian, Tennessee: Ulrich, 1116.
Beekmantown, Canadian, Champlain Valley: Ulrich, 1116.
Beekmantown, Ordovician, New York: Gordon, 429.
Beekmantown group, Cambrian, New York: Cushing, 297.
Bellefonte dolomite, Canadian, Pennsylvania: Ulrich, 1116.
Beloit dolomite, Ordovician, Upper Mississippi Valley: Ulrich, 1116.
Benton shales, Cretaceous, Wyoming: Jamison, 556.
Benton shale, Cretaceous, Wyoming: Wegemann, 1184.
Benwood limestone, Carboniferous, West Virginia: Krebs, 630.
Benwood limestone member, Pennsylvanian, Pennsylvania: Munn, 813; Shaw and Munn, 1012.
Berea grit, Waverlyan, Ohio: Ulrich, 1116.
Bertie waterlime, Silurian, New York: Luther, 714; Ulrich, 1116.
Bigby limestone, Ordovician, Kentucky, Tennessee: Ulrich, 1116.
Bigby limestone, Ordovician, Tennessee: Ulrich, 1116.
Bighorn formation, Cretaceous, Alberta: Malloch, 730.
Bighorn limestone, Ordovician, Wyoming: Blackwelder, 109; Jamison, 556.
Bijiki schist, Algonkian, Michigan: Van Hise and Leith, 1132.
Binnewater sandstone, Silurian, New York: Berkey, 94.
Birch Creek schist, pre-Ordovician, Alaska: Brooks, 146.
Birdsville formation, Tennessean, Mississippi Valley: Ulrich, 1116.
Birmingham shale, Carboniferous, Pennsylvania: Raymond, 900.
Birmingham shale, Carboniferous, West Virginia: Hennen, 486.
Birmingham shale member, Pennsylvanian, Pennsylvania: Shaw and Munn, 1012.
Bitter Creek formation, British Columbia: McConnell, 719.
Biwabik formation, Algonkian, Minnesota: Van Hise and Leith, 1132.
Black Hand conglomerate, Waverlyan, Ohio: Ulrich, 1116.
Black River, Ordovician: Ulrich, 1116.
Black River group, Ordovician, Iowa and Minnesota: Bassler, 72.
Black River group, Ordovician, New York: Cushing, 297.
Blacksmith limestone, Cambrian, Idaho: Richards and Mansfield, 936.
Blackstone shales, Cretaceous, Alberta: Malloch, 730.
Blakely sandstone, Canadian, Arkansas: Ulrich, 1116.
Bloomington formation, Cambrian, Idaho: Richards and Mansfield, 936.
Bloomsburg sandstone, Silurian, Appalachian Valley: Ulrich, 1116.
Blossom sand member, Cretaceous, Texas: Gordon, 430.
Blount group, Ordovician, Tennessee: Ulrich, 1116.
Bluestone formation, Tennessean, West Virginia: Ulrich, 1116.
Bob, Silurian, Tennessee: Ulrich, 1116.
Bois d'Arc limestone, Devonian, Oklahoma: Reeds, 913.
Bolivar clay member, Carboniferous, Pennsylvania: Phalen and Martin, 862.
Bonaventure sands and conglomerates, Devono-Carboniferous: Clarke, 249.
Bonneterre formation, Cambrian, Missouri: Hughes, 532.
Bonneterre dolomite, Cambrian, Missouri: Ulrich, 1116.
Boone chert, Waverlyan, Ozark region: Ulrich, 1116.
Boone formation, Mississippian, Oklahoma: Hutchison, 542.
Borate member, Miocene, California: Baker, 45.
Bowling Green dolomite, Silurian, Missouri: Ulrich, 1116.
Boyle limestone, Devonian, Kentucky: Ulrich, 1116.
Braeburn limestone, Devono-Carboniferous, British Columbia: Cairnes, 187.
Brainard shale, Silurian, Iowa, Minnesota: Ulrich. 1116.
Brassfield, Silurian, Kentucky, Illinois, Arkansas, Oklahoma: Ulrich, 1116.
Brasstown schist, Cambrian, Tennessee: Emmons and Laney, 373.
Brayman, Ordovician, New York: Ulrich, 1116.
Brazeau formation, Cretaceous, Alberta: Malloch, 730.
Bretonian, Canadian, Canada: Ulrich, 1116..
Briarfield dolomite, Ozarkian, Alabama: Ulrich, 1116.
Bridger formation, Eocene, Wyoming: Sinclair and Granger, 1024.
Brier slate member, Algonkian, Michigan: Van Hise and Leith, 1132.
Brigham quartzite, Cambrian, Idaho: Richards and Mansfield, 936.
Bromide, Ordovician, Oklahoma: Ulrich, 1116.
Browns Mountain group, Cambrian, Nova Scotia: Williams, 1207.
Brownstown marl, Cretaceous, Texas: Gordon, 430.
Brush Creek limestone, Carboniferous, Pennsylvania: Raymond, 900.

Brush Creek limestone, Carboniferous, West Virginia: Hennen, 486.
Bryant limestone, Ordovician, Missouri: Ulrich, 1116.
Buena Vista, Cambrian, Virginia: Ulrich, 1116.
Buffalo sandstone, Carboniferous, West Virginia: Hennen, 486.
Buffalo sandstone member, Carboniferous, Pennsylvania: Phalen and Martin, 862.
Buffalo sandstone member, Pennsylvanian, Pennsylvania: Munn, 813; Shaw and Munn, 1012.
Bulkley eruptives, Tertiary?, British Columbia: Leach, 670.
Burgess shale, Cambrian, British Columbia: Walcott, 1153.
Burgoon sandstone, Mississippian, Pennsylvania: Shaw and Munn, 1012; Shaw *et al.*, 1014.
Burke formation, Algonkian, Idaho: Pardee, 843.
Burlington formation, Mississippian, Missouri: Hughes, 532.
Burlington limestone, Waverlyan, Iowa: Ulrich, 1116.
Burns latite, Tertiary, Colorado: Cross, 287.
Burton sandstone, Carboniferous, West Virginia: Hennen, 486; Krebs, 630.
Bushberg sandstone, Waverlyan, Mississippi Valley: Ulrich, 1116.
Butler sandstone member, Pennsylvanian, Pennsylvania: Munn, 813; Phalen and Martin, 862.
Cabotian, Pre-Cambrian, Minnesota: Winchell, 1230.
Calloway limestone, Devonian, Illinois, Missouri Ulrich, 1116.
Calvert formation, Miocene, Maryland: Miller, 780.
Calvert formation, Miocene, Virginia: Darton, 309.
Calvin sandstone, Pennsylvanian, Oklahoma: Hutchison, 542.
Cambridge (lower) limestone member, Pennsylvanian, Pennsylvania: Munn, 813.
Cambridge slate, Massachusetts: Loughlin, 704.
Camden chert, Devonian, Tennessee: Ashley, 23; Ulrich, 1116.
Camillus shale, Silurian, New York: Luther, 714; Ulrich, 1116.
Campnelson limestone, Ordovician, Kentucky: Ulrich, 1116.
Canadian system: Ulrich, 1116.
Canajoharie shale, Ordovician, New York: Miller, 794; Ruedemann, 962; Ulrich, 1116.
Caney shale, Mississippian, Oklahoma: Hutchison, 542.
Cannon limestone, Ordovician, Tennessee: Ulrich, 1116.
Cantwell formation, Carboniferous, Alaska: Brooks, 146.
Canyon formation, Pennsylvanian, Texas: Gordon, 431.
Cap Mountain formation, Cambrian, Texas: Paige, 835.
Cardiff shale, Devonian, New York: Luther, 714.
Carmichaels formation, Quaternary, Pennsylvania: Shaw and Munn, 1012; Shaw *et al.*, 1014.
Carolina gneiss, Pre-Cambrian, Tennessee: Emmons and Laney, 373.
Carrizo sands, Eocene, Texas: Dumble, 354.
Carters, Ordovician, Tennessee: Ulrich, 1116.
Carterville, Tennessean, Ozark region: Ulrich, 1116.
Cashaqua shale, Devonian, New York: Luther, 714.
Cason shale, Silurian, Arkansas: Ulrich, 1116.
Cassville plant shale, Carboniferous, West Virginia: Krebs, 630.
Cassville shale member, Permian, Pennsylvania: Shaw and Munn, 1012.
Castle Mountain group, Cambrian, Alberta: Shimer, 1022.
Catheys formation, Ordovician, Tennessee: Ulrich, 1116.
Cat Hill gneissoid granite, New York: Berkey, 94.
Catskill formation, Devonian, New York: Berkey, 94.
Catskill formation, Devonian?, Pennsylvania: Munn, 813; Phalen and Martin, 862.
Catskill (?) formation, Devonian, Pennsylvania: Shaw and Munn, 1012; Shaw *et al.*, 1014.
Catskill (late), Waverlyan, New York, Pennsylvania: Ulrich, 1116.
Cayugan, Silurian: Ulrich, 1116.
Cedar Valley limestone, Devonian, Iowa: Ulrich, 1116.
Cedarville dolomite, Silurian, Ohio: Ulrich, 1116.
Chagrin formation, Devonian, Ohio: Ulrich, 1116.
Chagrin formation, Devonian, Ontario: Stauffer, 1054.
Chambersburg limestone, Ordovician, Maryland basin: Ulrich, 1116.
Charlton formation, Pliocene, Georgia: Veatch and Stephenson, 1144.
Chattahoochee formation, Oligocene, Georgia: Veatch and Stephenson, 1144.
Chattanooga black shale, Devonian, Tennessee: Nelson, 820.
Chattanooga black shale, Mississippian, Tennessee: Bassler, 76.
Chattanooga black shale, Waverlyan, Mississippi Valley, Allegheny region, Tennessee, Missouri: Ulrich, 1116.
Chattanooga formation, Waverlyan, Ozark region: Ulrich, 1116.
Chattanooga, Waverlyan: Ulrich, 1116.
Chazy formation, Ordovician, Canada: Raymond, 898.
Chazy group, Ordovician, New York: Cushing, 297.
Chazyan, Ordovician: Ulrich, 1116.
Chemung formation, Devonian, New York: Ulrich, 1116.
Chemung (?) formation, Devonian, Pennsylvania: Shaw and Munn, 1012; Shaw *et al.*, 1014.
Chemung shale and sandstone, Devonian, New York: Luther, 714.
Chepultepec, Ozarkian, Alabama: Ulrich, 1116.
Chesapeake group, Miocene, Maryland: Miller, 780.
Chesapeake group, Miocene, Virginia: Darton, 309.
Chesterian, Tennessean: Ulrich, 1116.
Chicago group, Silurian: Ulrich, 1116.
Chickamauga limestone, Ordovician, Appalachian Valley: Ulrich, 1116.
Chico formation, California: Dickerson, 335.
Chico formation, Cretaceous, California: Lindgren, 690.
Chieftain Hill volcanics, Tertiary?, British Columbia: Cairnes, 187.
Chignik formation, Cretaceous, Alaska: Atwood, 28.

Chilhowee, Cambrian, Appalachian Valley: Ulrich, 1116.
Chimneyhill limestone, Silurian, Oklahoma: Reeds, 913.
Chisna formation, Carboniferous, Alaska: Brooks, 146.
Chitistone limestone, Triassic, Alaska: Moffit and Capps, 799.
Choptank formation, Miocene, Maryland: Miller, 780.
Chouteau limestone, Waverlyan, Missouri: Ulrich, 1116.
Christiania bed, Ordovician, Pennsylvania: Ulrich, 1116.
Chugwater formation, Triassic? and Permian, Wyoming: Blackwelder, 109.
Chugwater formation, Triassic, Wyoming: Jamison, 556.
Chugwater formation, Triassic?, Wyoming: Woodruff, 1243.
Cincinnatian, Ordovician: Ulrich, 1116.
Cisco formation, Pennsylvanian, Texas: Gordon, 431.
Claiborne group, Eocene, Georgia: Veatch and Stephenson, 1144.
Claiborne group, Pleistocene, Texas: Gordon, 430.
Claremore formation, Pennsylvanian, Oklahoma: Hutchison 542; Ohern, 831.
Clarksburg formation, Algonkian, Michigan: Van Hise and Leith, 1132.
Clarksburg limestone, Carboniferous, West Virginia: Krebs, 630.
Clarksburg limestone member, Pennsylvanian, Pennsylvania: Shaw and Munn, 1012.
Clayton formation, Eocene, Mississippi: Logan, 696.
Clayton sandstone, Eocene, Mississippi: Logan, 696.
Clear Creek, Devonian, Tennessee, Illinois: Ulrich, 1116.
Clear Fork formation, Permian, Texas: Gordon, 431.
Clermont shale, Silurian, Iowa, Minnesota: Ulrich, 1116.
Cleveland shale, Waverlyan, Ohio: Ulrich, 1116.
Clinch sandstone, Silurian, Tennessee: Ulrich, 1116.
Clinton, Silurian: Ulrich, 1116.
Cloverly formation, Upper and Lower Cretaceous, Wyoming: Blackwelder, 109.
Cobalt series Pre-Cambrian, Quebec: Harvie, 474.
Cobleskill limestone, Silurian, New York: Berkey, 94; Ulrich, 1116.
Coboconk limestone, Ordovician, Ontario: Johnston, 571.
Cochran conglomerate, Cambrian, Tennessee: Ulrich, 1116.
Coeymans limestone, Devonian, New York: Berkey, 94; Ulrich, 1116.
Cohansey sand, Miocene, New Jersey: Kümmel, 632.
Collier shale, Cambrian, Arkansas: Ulrich, 1116.
Colorado formation, Upper Cretaceous, Wyoming: Blackwelder, 109.
Colorado group, Cretaceous, Wyoming: Wegemann, 1184.
Columbia formation, Pleistocene, Tennessee: Nelson, 818.
Columbia gravel, Pleistocene, New Jersey: Volk, 1146.
Columbia group, Pleistocene, Georgia: Veatch and Stephenson, 1144.
Columbia group, Pleistocene, Maryland: Miller, 780.
Columbia group, Pleistocene, Virginia: Darton, 309.
Columbus limestone, Devonian, Ohio: Ulrich 1116.
Colvin limestone, Permian, Pennsylvania: Shaw and Munn, 1012.
Comanche series, Lower Cretaceous, Texas: Gordon, 430.
Comanchean system: Ulrich, 1116.
Conemaugh formation, Carboniferous, Pennsylvania: Phalen and Martin, 862.
Conemaugh formation, Pennsylvanian, Pelvannsynia: Munn, 813; Shaw and Munn, 1012; Shaw *et al.*, 1014.
Conemaugh series, Carboniferous, West Virginia: Hennen, 486; Krebs, 630.
Congaree clay member, Eocene, Georgia: Veatch and Stephenson, 1144.
Connellsville sandstone, Carboniferous, West Virginia: Hennen, 486; Krebs, 630.
Connellsville sandstone member, Pennsylvanian, Pennsylvania: Shaw and Munn, 1012.
Connely, Devonian, New York: Ulrich, 1116.
Connoquenessing sandstone member, Pennsylvanian, Pennsylvania: Shaw and Munn, 1012; Shaw *et al.*, 1014.
Conococheague formation, Ozarkian, Maryland basin: Ulrich, 1116.
Conosauga shale, Cambrian, Appalachian Valley: Ulrich, 1116.
Copan member, Pennsylvanian, Oklahoma: Ohern, 831.
Coplay limestone, Canadian, Pennsylvania: Ulrich, 1116.
Copper Ridge, Ozarkian, Appalachian Valley: Ulrich, 1116.
Copper Ridge, Ozarkian, Tennessee: Ulrich, 1116.
Corniferous (Onondaga) limestone, Devonian, Ontario: Stauffer, 1054.
Corrigan beds, Eocene, Texas: Dumble, 353.
Cortlandt series, New York: Berkey, 94; Rogers, 947.
Cottonwood limestone, Carboniferous, Kansas: Yates, 1255.
Couchiching, pre-Cambrian, Ontario: Coleman, 271.
Crab Orchard, Silurian, Kentucky: Ulrich, 1116.
Creston quartzite, Cambrian?, British Columbia: Schofield, 991.
Creston red shale, Carboniferous, West Virginia: Hennen, 486.
Creston reds, Carboniferous, West Virginia: Krebs, 630.
Crown Point limestone, Ordovician, New York: Cushing, 297.
Crystal Mountain sandstone, Cambrian, Arkansas: Ulrich, 1116.
Culebra formation, Tertiary, Panama: Hayes, 483.
Cumberland, Ordovician, Champlain Valley: Ulrich, 1116.
Curdsville limestone, Ordovician, Kentucky: Ulrich, 1116.

Curl formation, Pennsylvanian, Oklahoma: Ohern, 831.
Curry member, Algonkian, Michigan: Van Hise and Leith, 1132.
Cusseta sand member, Upper Cretaceous, Georgia: Veatch and Stephenson, 1144.
Cuyahoga formation, Mississippian, Pennsylvania: Shaw and Munn, 1012; Shaw *et al.*, 1014.
Cuyahoga formation, Waverlyan, Ohio: Ulrich, 1116.
Cypress sandstone, Tennessean, Illinois: Ulrich, 1116.
Dakota formation, Cretaceous: Todd, 1098.
Dakota sandstone, Cretaceous, Colorado: Ransome, 889.
Dakota sandstone, Cretaceous, Wyoming: Blackwelder, 109; Woodruff, 1243.
Dakota (?) sandstone, Cretaceous, Wyoming: Wegemann, 1184.
Dakota sandstones and shales, Cretaceous, Alberta: Malloch, 730.
Dalhousie shales, Devonian, New Brunswick: Clarke, 249.
Dam Lake quartzite, pre-Cambrian, Minnesota: Ayers, 32.
Davis formation, Cambrian, Missouri: Hughes, 532.
Day Point limestone, Ordovician, Champlain Valley: Ulrich, 1116.
Day Point limestone, Ordovician, New York: Cushing, 297.
Dayton, Silurian, Ohio: Ulrich, 1116.
Deadwood formation, Cambrian, Wyoming: Blackwelder, 109; Jamison, 556.
Deadwood formation, Cambrian, South Dakota, Wyoming: Ulrich, 1116.
Decatur limestone, Silurian, New York: Ulrich, 1116.
Decorah shale, Ordovician, Iowa and Minnesota: Bassler, 72.
Decorah shale, Ordovician, Minnesota: Hall *et al.*, 463.
Decorah shale, Ordovician, upper Mississippi Valley: Ulrich, 1116.
Deerwood formation, pre-Cambrian, Minnesota: Adams, 3.
Delaware limestone, Devonian, Ohio: Ulrich, 1116.
Derby formation, Cambrian, Missouri: Hughes, 532.
Devonshire formation, Quaternary, Bermuda Islands: Bullen, 163.
Dixon, Silurian, Tennessee: Ulrich, 1116.
Doe Run formation, Cambrian, Missouri: Hughes, 532.
Dolgeville, Ordovician, New York: Ulrich, 1116.
Dome conglomerate, pre-Cambrian: Hore, 518.
Doré conglomerate, Algonkian, Ontario: Van Hise and Leith, 1132.
Dresbach sandstone, Cambrian, Minnesota: Hall *et al.*, 463.
Dresbach sandstone and shale: Cambrian, upper Mississippi Valley: Ulrich, 1116.
Dubuque dolomite, Silurian, Iowa: Ulrich, 1116.
Dubuque limestone, Ordovician, upper Mississippi Valley: Ulrich, 1116.
Duluth gabbro, Algonkian, Minnesota: Van Hise and Leith, 1132.
Duluth laccolith, Algonkian, Lake Superior region: Van Hise and Leith, 1132.
Dunkard group, Permian, Pennsylvania: Munn, 813; Shaw and Munn, 1012.
Dunkard series, Carboniferous, West Virginia: Hennen, 486; Krebs, 630.
Duplin marl, Miocene, Georgia: Veatch and Stephenson, 1144.
Eagle Ford clay, Cretaceous, Texas: Gordon, 430.
Eden, Ordovician: Ulrich, 1116.
Eleanor slate, Archean, Ontario: Van Hise and Leith, 1132.
Elbrook limestone, Cambrian, Maryland basin: Ulrich, 1116.
Elk Lick limestone, Carboniferous, West Virginia: Hennen, 486; Krebs, 630.
Ellenburger limestone, Cambro-Ordovician, Texas: Paige, 835.
Ellis formation, Jurassic, Wyoming: Blackwelder, 109.
Elvins formation, Cambrian, Missouri: Ulrich, 1116.
Ely greenstone, Archean, Minnesota: Van Hise and Leith, 1132.
Embarrass granite, Algonkian, Minnesota: Van Hise and Leith, 1132.
Embar formation, Carboniferous, Wyoming: Jamison, 556; Woodruff, 1243.
Ember formation, Pennsylvanian, Wyoming: Blackwelder, 109.
Eminence, Ozarkian, Missouri: Ulrich, 1116.
Enfield, Devonian, New York: Ulrich, 1116.
Englishtown sand, Cretaceous, New Jersey: Kümmel, 632.
Enochkin formation, Jurassic, Alaska: Atwood, 28.
Escondido beds, Cretaceous, Mexico: Dumble, 355.
Esopus, Devonian, New York: Ulrich, 1116.
Esopus shales, Devonian, New York: Berkey, 94.
Eureka rhyolite, Tertiary, Colorado: Cross, 287.
Eutaw formation, Upper Cretaceous, Georgia: Veatch and Stephenson, 1144.
Eutaw sand, Cretaceous, Tennessee: Nelson, 818.
Everton, Ordovician, Arkansas: Ulrich, 1116.
Fabre series, pre-Cambrian, Quebec: Harvie, 474.
Fairhaven diatomaceous earth, Miocene, Maryland: Miller, 780.
Fairview limestone, Ordovician, Ohio: Ulrich, 1116.
Farnham series, Ordovician, Quebec: Dresser, 349.
Fayette beds, Eocene, Texas: Dumble, 353.
Fayetteville, Tennessean, Kentucky: Ulrich, 1116.
Fayetteville formation, Mississippian, Oklahoma: Hutchison, 542.
Fayetteville formation, Tennessean, Ozark region: Ulrich, 1116.
Felch schist, Algonkian, Michigan: Van Hise and Leith, 1132.
Fern Glen formation, Waverlyan, Mississippi Valley: Ulrich, 1116.
Fern Glen limestone member, Mississippian, Missouri: Fenneman, 382.
Fernie shales, Jurassic, Alberta: Malloch, 730.
Fernvale, Silurian, Tennessee, Oklahoma: Ulrich, 1116.
Fish Creek sandstone, Carboniferous, West Virginia: Hennen, 486; Krebs, 630.

Flathead formation, Cambrian, Wyoming: Blackwelder, 109.
Flanagan chert, Ordovician, Kentucky: Ulrich, 1116.
Flanagan chert, Ordovician, Tennessee: Ulrich, 1116.
Flemming clays, Eocene, Texas: Dumble, 353.
Florena shales, Carboniferous, Kansas: Yates, 1255.
Floyd shale, Mississippian, Alabama: Munn, 814.
Floyd shale, Tennessean, Alabama: Ulrich, 1116.
Fordham gneiss, New York: Berkey, 94.
Fort Atkinson limestone, Silurian, Iowa, Minnesota: Ulrich, 1116.
Fort Payne chert, Carboniferous, Tennessee: Nelson, 820.
Fort Payne chert, Mississippian, Alabama: Munn, 814.
Fort Payne chert, Mississippian, Tennessee: Bassler, 76.
Fort Payne chert, Waverlyan, Tennessee, Alabama: Ulrich, 1116.
Fort Union formation, North Dakota and Montana: Leonard, 678.
Fort Union formation, Eocene, Wyoming: Wegemann, 1184.
Fort Union formation, Tertiary, Montana: Lupton, 713.
Fort Union formation, Tertiary, Montana and North Dakota: Leonard, 678.
Fox Hills formation, Cretaceous, North and South Dakota: Knowlton, 621.
Fox Hills sandstone, Cretaceous, Montana and North Dakota: Leonard, 678.
Fox Hills sandstone, Cretaceous, Wyoming: Wegemann, 1184.
Fox Hills sandstone (?), Upper Cretaceous, Wyoming: Blackwelder, 109.
Frankfort shale, Ordovician, New York: Miller, 794.
Frankfort shale, Ordovician, New York: Ruedemann, 962; Ulrich, 1116.
Franciscan formation, Jurassic?, California: Anderson, 15.
Franklin formation, pre-Cambrian, New Jersey: Bayley, 84.
Franks conglomerate, Pennsylvanian, Oklahoma: Hutchison, 542.
Freda sandstone, Algonkian, Michigan: Van Hise and Leith, 1132.
Freedom dolomite, Algonkian, Wisconsin: Van Hise and Leith, 1132.
Freeport, lower, limestone member, Carboniferous, Pennsylvania: Phalen and Martin, 862.
Freeport, upper, limestone member, Carboniferous, Pennsylvania: Phalen and Martin, 862.
Freeport limestone member, Pennsylvanian, Pennsylvania: Shaw *et al.*, 1014.
Freeport limestone, Pennsylvanian, Pennsylvania: Shaw and Munn, 1012.
Freeport sandstone member, Pennsylvanian, Pennsylvania: Munn, 813.
Frio beds, Eocene, Texas: Dumble, 353.
Frog Mountain shale, Devonian, Alabama: Ulrich, 1116.
Fulton, Ordovician, Kentucky, Ohio: Ulrich, 1116.
Fulton green shale, Carboniferous, West Virginia: Krebs, 630.
Galena dolomite, Ordovician, upper Mississippi Valley: Cox, 284; Ulrich, 1116.
Galena limestone, Ordovician, Minnesota: Hall *et al.*, 463.
Gallatin limestone, Cambrian, Wyoming: Blackwelder, 109.
Gardeau flags and shale, Devonian, New York: Luther, 714.
Garrard sandstone, Ordovician, Kentucky: Ulrich, 1116.
Gasconade formation, Cambrian, Missouri: Hughes, 532.
Gasconade formation, Cambrian, Missouri: Lee, 672.
Gasconade formation, Ozarkian, Missouri: Ulrich, 1116.
Gatun formation, Oligocene, Panama: Brown and Pilsbry, 154.
Genesee black shale, Devonian, New York: Luther, 714.
Genesee shale, Devonian, New York: Ulrich, 1116.
Geneva limestone, Devonian, Indiana: Ulrich, 1116.
Genundewa limestone, Devonian, New York: Luther, 714.
Giants Range granite, Algonkian, Minnesota: Van Hise and Leith, 1132.
Gilboy sandstone, Carboniferous, West Virginia: Hennen, 486.
Gilboy sandstone, Carboniferous, West Virginia: Krebs, 630.
Gilmore limestone, Carboniferous, West Virginia: Krebs, 630.
Gilmore sandstone, Carboniferous, West Virginia: Krebs, 630.
Girardeau limestone, Silurian, Illinois, Missouri Ulrich, 1116.
Glenerie, Devonian, New York: Ulrich, 1116.
Glenham gneiss, New York: Gordon, 429.
Glenn formation, Pennsylvanian, Oklahoma: Hutchison, 542.
Glen Park limestone, Waverlyan, Mississippi Valley: Ulrich, 1116.
Glenwood shale, Ordovician, upper Mississippi Valley: Ulrich, 1116.
Glenwood shales, Ordovician, Iowa and Minnesota: Bassler, 72.
Goldenville division, Cambrian or pre-Cambrian, Nova Scotia: Faribault, 377.
Goldenville formation, Algonkian, Nova Scotia: Knight, 616.
Goodrich quartzite, Algonkian, Michigan: Van Hise and Leith, 1132.
Gower stage, Silurian, Iowa: Ulrich, 1116.
Grafton sandstone, Carboniferous, West Virginia: Hennen, 486.
Grainger (upper) shale, Waverlyan, Allegheny region: Ulrich, 1116.
Grand Falls chert, Waverlyan, Ozark region: Ulrich, 1116.
Grand Gulf sandstone, Tertiary, Mississippi: Logan 696.
Grand Tower formation, Devonian, Illinois and Missouri: Savage, 970.
Grand Tower limestone, Devonian, Illinois, Missouri: Ulrich, 1116.
Gratz shale, Ordovician, Kentucky: Ulrich, 1116.

Gray limestone, Ordovician, New York: Ulrich, 1116.
Great Smoky formation, Cambrian, Tennessee: Emmons and Laney, 373.
Greenbrier limestone, Tennessean, Allegheny region: Ulrich, 1116.
Greene formation, Permian, Pennsylvania: Shaw and Munn, 1012.
Greenfield, Silurian, Ohio: Ulrich, 1116.
Grenville series, New York: Berkey, 94.
Grenville series, pre-Cambrian, New York: Miller, 794.
Grenville series, pre-Cambrian, Ontario: Coleman, 271.
Grimes sandstone, Devonian, New York: Luther, 714.
Gros Cap greenstone, Archean, Ontario: Van Hise and Leith, 1132.
Guelph, Silurian, Canada: Ulrich, 1116.
Gulf series, Upper Cretaceous, Texas: Gordon, 430.
Gunflint formation, Algonkian, Minnesota and Ontario: Van Hise and Leith, 1132.
Halifax division, Cambrian or pre-Cambrian, Nova Scotia: Faribault, 377.
Halifax formation, Algonkian, Nova Scotia: Knight, 616.
Hamburg slate, Algonkian, Wisconsin: Van Hise and Leith, 1132.
Hamilton beds, Devonian, Ontario: Stauffer, 1054.
Hamilton formation, Devonian, Wisconsin: Cleland, 255.
Hamilton shale, Devonian, New York: Berkey, 94; Ulrich, 1116.
Hannibal shale, Waverlyan, Mississippi Valley: Ulrich, 1116.
Haragan shale, Devonian, Oklahoma: Reeds, 913.
Hardin sandstone, Mississippian, Tennessee: Bassler, 76.
Hardin sandstone, Waverlyan, Tennessee: Ulrich, 1116.
Harpers schist, Cambrian, Maryland basin: Ulrich, 1116.
Harrison granodiorite, New York: Ziegler, 1260.
Harrodsburg limestone, Waverlyan and Tennessean, Indiana: Ulrich, 1116.
Hartselle sandstone, Tennessean, Alabama: Ulrich, 1116.
Hartselle sandstone member, Mississippian, Alabama: Munn, 814.
Hatch shale and flags, Devonian, New York: Luther, 714.
Hawkins formation, Carboniferous, Washington: Weaver, 1180.
Hazleton group, Jurassic, British Columbia: Leach, 670.
Head shale, Ordovician, Champlain Valley: Ulrich, 1116.
Heiskell shale, Ordovician, Appalachian Valley: Ulrich, 1116.
Helderbergian, Devonian: Ulrich, 1116.
Helen formation, Archean, Ontario: Van Hise and Leith, 1132.
Hemlock formation, Algonkian, Michigan: Van Hise and Leith, 1132.
Henryhouse shale, Silurian, Oklahoma: Reeds, 913.
Henson tuff, Tertiary, Colorado: Cross, 287.
Herendeen limestone, Cretaceous, Alaska: Atwood, 28.
Hermansville limestone, Cambro-Ordovician, Michigan: Van Hise and Leith, 1132.
Hermitage formation, Ordovician, Tennessee: Ulrich, 1116.
Hickory sandstone, Cambrian, Texas: Paige, 835.
Highbridge limestone, Ordovician, Kentucky: Ulrich, 1116.
High Falls shale, Silurian, New York: Berkey, 94.
Hillsboro sandstone, Silurian, Ohio: Ulrich, 1116.
Hinckley formation, Cambrian, upper Mississippi Valley: Ulrich, 1116.
Hinsdale volcanic series, Tertiary, Colorado: Cross, 287.
Hiwassee slate, Cambrian, Tennessee: Emmons and Laney, 373.
Hogshooter limestone member, Pennsylvanian, Oklahoma: Ohern, 831.
Holston limestone, Ordovician, Appalachian Valley, Tennessee: Ulrich, 1116.
Homewood sandstone member, Pennsylvanian, Pennsylvania: Shaw and Munn, 1012; Shaw *et al.*, 1014.
Honaker limestone, Cambrian, Virginia: Ulrich, 1116.
Honey Creek limestone member, Cambrian, Oklahoma: Ulrich, 1116.
Hopkinton dolomite, Silurian, Iowa, Minnesota: Ulrich, 1116.
Hornerstown marl, Cretaceous, New Jersey: Kümmel, 632.
Hortontown basic eruptive, New York: Gordon, 429.
Hoyt limestone, New York: Miller, 794.
Hoyt limestone, Cambrian, New York: Cushing, 297.
Hoyt limestone, Ozarkian, New York: Ulrich, 1116.
Hudson River slates, Cambro-Ordovician, New York: Berkey, 94.
Hughes River flint, Carboniferous, West Virginia: Hennen, 486.
Hundred sandstone, Carboniferous, West Virginia: Hennen, 486; Krebs, 630.
Hunton formation, Silurian, Arkansas: Ulrich, 1116.
Hunton limestone, Silurian-Devonian, Oklahoma: Hutchison, 542.
Huron group, Mississippian, Indiana: Greene, 448.
Huronian, pre-Cambrian, Ontario: Hore, 518.
Huronian (lower), pre-Cambrian, Quebec: Barlow *et al.*, 64.
Huronian formation, pre-Cambrian, Ontario: Hore, 520.
Huronian series, Algonkian, Minnesota, Ontario, and Michigan: Van Hise and Leith, 1132.
Idaho formation, Pliocene, Oregon and Idaho: Washburne, 1170.
Illinoian drift, Quaternary, Missouri: Fenneman, 382.
Indian ladder beds, Ordovician, New York: Ruedemann, 962.
Inwood limestone, New York: Berkey, 94.
Ione formation, Miocene, California: Lindgren, 690.
Iron Ridge ore bed, Silurian, Wisconsin: Ulrich, 1116.

Ironwood formation, Algonkian, Michigan and Wisconsin: Van Hise and Leith, 1132.
Ithaca formation, Devonian, New York: Berkey, 94; Ulrich, 1116.
Izard limestone, Ordovician, Arkansas, Missouri: Ulrich, 1116.
Jackforth sandstone, Carboniferous, Oklahoma: Hutchison, 542.
Jackson formation, Eocene, Georgia: Veatch and Stephenson, 1144.
Jacksonburg, Ordovician, Pennsylvania: Ulrich, 1116.
James River formation, Cambrian, Nova Scotia: Williams, 1207.
James River shale, Waverlyan, Ozark region: Ulrich, 1116.
Jefferson limestone, Devonian, Wyoming: Blackwelder, 109.
Jefferson (?) limestone, Devonian, Idaho: Richards and Mansfield, 936.
Jefferson City formation, Cambrian, Missouri: Hughes, 532; Lee, 672.
Jefferson City formation, Ozarkian, Missouri: Ulrich, 1116.
Jeffersonville beds, Devonian, Indiana: Savage, 970.
Jeffersonville limestone, Devonian, Indiana, Kentucky: Ulrich, 1116.
Jennings formation, Appalachian Valley: Ulrich, 1116.
Joachim, Ordovician, Missouri: Ulrich, 1116.
Johannian, Cambrian, Canada: Ulrich, 1116.
Johnstown limestone member, Carboniferous, Pennsylvania: Phalen and Martin, 862.
Jollytown limestone member, Permian, Pennsylvania: Shaw and Munn, 1012.
Jollytown sandstone, Carboniferous, West Virginia: Hennen, 486; Krebs, 630.
Jonesboro limestone, Canadian, Appalachian Valley: Ulrich, 1116.
Jordan sandstone, Cambrian, Minnesota: Hall *et al.*, 463.
Jordan (Madison) sandstone, Ozarkian, upper Mississippi Valley: Ulrich, 1116.
Juniata sandstone, Ordovician, Pennsylvania: Ulrich, 1116.
Kansan drift, Quaternary, Missouri: Fenneman, 382.
Kaskaskia, Tennessean, Mississippi Valley: Ulrich, 1116.
Katemcy formation, Cambrian, Texas: Ulrich, 1116.
Keewatin, pre-Cambrian, Ontario: Hore, 518.
Keewatin, pre-Cambrian, Quebec: Harvie, 474.
Keewatin eruptives, pre-Cambrian, Ontario: Coleman, 271.
Keewatin formation, pre-Cambrian, Quebec: Barlow *et al.*, 64.
Keewatin formations, pre-Cambrian, Ontario: Hore, 520.
Keewatin sediments, pre-Cambrian, Ontario: Coleman, 271.
Keewatin series, Archean, Lake Superior region: Van Hise and Leith, 1132.
Kenai formation, Eocene, Alaska: Atwood, 28; Brooks, 146.
Kennicott formation, Jurassic, Alaska: Moffit and Capps, 799.
Keokuk formation, Waverlyan, Mississippi Valley: Ulrich, 1116.
Kern River group, Neocene, California: Anderson, 12.
Ketona dolomite, Ozarkian, Alabama: Ulrich, 1116.
Keweenawan formation, pre-Cambrian, Ontario: Hore, 520.
Keweenawan series, Algonkian, Lake Superior region: Van Hise and Leith, 1132.
Keyser limestone, Devonian, West Virginia: Ulrich, 1116.
Kiefer sandstone, Silurian, Maryland: Ulrich, 1116.
Kimmswick, Ordovician, Missouri: Ulrich, 1116.
Kinderhook, Waverlyan, Mississippi Valley: Ulrich, 1116.
Kinderhook formation, Mississippian, Missouri: Fenneman, 382.
Kinderhookian, Waverlyan: Ulrich, 1116.
King limestone, Waverlyan, Ozark region: Ulrich, 1116.
Kirkfield limestone group, Ordovician, Ontario: Johnston, 571.
Kirkwood formation, Miocene, New Jersey: Kümmel, 632.
Kitchener formation, Cambrian?, British Columbia: Schofield, 991.
Kitchi schist, Archean, Michigan: Van Hise and Leith, 1132.
Kittanning (lower) clay, Pennsylvanian, Pennsylvania: Shaw and Munn, 1012.
Kittanning (lower) clay member, Carboniferous, Pennsylvania: Phalen and Martin, 862.
Kittanning sandstone, Pennsylvanian, Pennsylvania: Munn, 813; Shaw *et al.*, 1014.
Kittanning sandstone member, Carboniferous, Pennsylvania: Phalen and Martin, 862.
Kittanning sandstone member, Pennsylvanian, Pennsylvania: Shaw and Munn, 1012; Shaw *et al.*, 1014.
Klusha intrusives, Tertiary?, British Columbia: Cairnes, 187.
Knife Lake slate, Algonkian, Minnesota: Van Hise and Leith, 1132.
Knobstone formation, Mississippian, Indiana, Kentucky, and Tennessee: Springer, 1047.
Knox, Ozarkian, Appalachian Valley: Ulrich, 1116.
Knox dolomite, Ozarkian, Virginia: Ulrich, 1116.
Knoydart formation, Devonian, Nova Scotia, Williams, 1207.
Kona dolomite, Algonkian, Michigan: Van Hise and Leith, 1132.
Kootanie formation, Cretaceous, Alberta: Dowling, 345.
Kootanie formation, Jurassic or Cretaceous, Alberta: Malloch, 730.
Laberge series, Jura-Cretaceous, British Columbia: Cairnes, 187.
Labette shale, Pennsylvanian, Oklahoma: Hutchison, 542; Ohern, 831.
Lafayette formation, Eocene, Mississippi and Tennessee: Berry, 104.
Lafayette formation, Pliocene?, Maryland: Miller, 780.
Lafayette formation, Pliocene, Tennessee: Nelson, 818.
Lafayette formation, Pliocene?, Virginia: Darton, 309.

Lafayette gravel, Tertiary, Missouri: Fenneman, 382.
LaGrange formation, Eocene, Tennessee: Nelson, 818.
Lake Superior sandstone, Cambrian, Michigan: Van Hise and Leith, 1132.
Lamotte sandstone, Cambrian, Missouri: Ulrich, 1116.
Lance formation, Cretaceous or Tertiary, Montana: Lupton, 713.
Lance formation, Cretaceous or Tertiary, Montana and North Dakota: Leonard, 678.
Lance formation, Cretaceous or Tertiary, Wyoming: Wegemann, 1184.
Lance formation, Eocene: Knowlton, 621.
Lance formation, North Dakota and Montana: Leonard, 678.
Lance formation, Tertiary, Wyoming and Montana: Knowlton, 621, 625.
Langston limestone, Cambrian, Idaho: Richards and Mansfield, 936.
Laramie (?) formation, Upper Cretaceous (and Eocene), Wyoming: Blackwelder, 109.
Laurel, Silurian, Indiana: Ulrich, 1116.
Laurentian, pre-Cambrian, Quebec: Harvie, 474.
Laurentian formation, pre-Cambrian, Ontario: Hore, 520.
Laurentian formation, pre-Cambrian, Quebec: Barlow, *et al.*, 64.
Laurentian series, Archean, Lake Superior region: Van Hise and Leith, 1132.
Lauzon formation, Canadian: Ulrich, 1116.
Lebanon, Ordovician, Tennessee: Ulrich, 1116.
Lebo shale member, Tertiary, Montana: Lupton, 713.
Leclair, Silurian, Iowa: Ulrich, 1116.
Lee conglomerate, Carboniferous, Virginia: Campbell and Woodruff, 203.
Leipers, Ordovician, Tennessee: Ulrich, 1116.
Lenapa limestone, Pennsylvanian, Oklahoma: Ohern, 831.
Lenoir limestone, Ordovician, Appalachian Valley: Ulrich, 1116.
Leray formation, Ordovician, New York: Cushing, 297.
Levis shale, Canadian, New York: Ulrich, 1116.
Lewiston (Queenston), Ordovician, New York: Ulrich, 1116.
Liberty, Silurian, Ohio, Indiana: Ulrich, 1116.
Liberty Hall, Ordovician, Virginia: Ulrich, 1116.
Lime Creek shale, Devonian, Iowa: Ulrich, 1116.
Linden formation, Devonian, Tennessee, Oklahoma: Ulrich, 1116.
Listmore formation, Carboniferous, Nova Scotia: Williams, 1207.
Little Falls dolomite, Cambrian, New York: Cushing, 297; Miller, 794.
Little Falls dolomite, Ozarkian, New York: Ulrich, 1116.
Llano series, Pre-Cambrian, Texas: Paige, 835.
Lloyd sand, Cretaceous, New York: Berkey, 94.
Lockport dolomite, Silurian, New York: Ulrich, 1116.
Logan sills, Algonkian, Minnesota and Ontario: Van Hise and Leith, 1132.
Longwood shale, Silurian, New York: Ulrich, 1116.
Lookout formation, Pennsylvanian, Tennessee: Phalen, 859, 860.
Lorraine, Ordovician, New York: Ulrich, 1116.
Lorraine series, pre-Cambrian, Quebec: Harvie, 474.
Losee gneiss, pre-Cambrian, New Jersey: Bayley, 84.
Lost Cabin formation, Eocene, Wyoming: Sinclair and Granger, 1024.
Louisiana limestone, Waverlyan, Mississippi Valley: Ulrich, 1116.
Louisville limestone, Silurian, Kentucky: Ulrich, 1116.
Lower Freeport limestone member, Carboniferous, Pennsylvania: Phalen and Martin, 862.
Lower Kittanning clay member, Carboniferous, Pennsylvania: Phalen and Martin, 862.
Lowerre quartzite, New York: Berkey, 94.
Lowville, Ordovician, New York: Ulrich, 1116.
Lowville limestone, Ordovician, New York: Cushing, 297; Miller, 794.
Lucas formation, Silurian or Devonian, Ohio: Ulrich, 1116.
Ludlowville shale, Devonian, New York: Luther, 714.
Lysite formation, Eocene, Wyoming: Sinclair and Granger, 1024.
McAdam formation, Silurian, Nova Scotia: Williams, 1207.
McAras Brook formation, Mississippian, Nova Scotia: Williams, 1207.
McBean formation, Eocene, Georgia: Veatch and Stephenson, 1144.
McCarthy shale, Triassic, Alaska: Moffit and Capps, 799.
McCune dolomite, Ordovician, Missouri: Ulrich, 1116.
McKenzie formation, Silurian, Maryland: Ulrich, 1116.
McMillan formation, Ordovician, Ohio: Ulrich, 1116.
Madison limestone, Carboniferous, Wyoming: Jamison, 556.
Madison limestone, Mississippian, Idaho: Richards and Mansfield, 936.
Madison limestone, Mississippian, Montana: Stone, 1068.
Madison limestone, Mississippian, Wyoming: Blackwelder, 109.
Madison sandstone, Ozarkian, Wisconsin: Ulrich, 1116.
Magothy formation, Cretaceous, Maryland: Miller, 780.
Magothy formation, Cretaceous, New Jersey: Kümmel, 632.
Mahoning sandstone member, Carboniferous, Pennsylvania: Phalen and Martin, 862.
Mahoning sandstone member, Pennsylvanian, Pennsylvania: Munn, 813; Shaw and Munn, 1012.
Mahoning (Dunkard) sandstone, Carboniferous, West Virginia: Hennen, 486.
Manasquan marl, Cretaceous, New Jersey: Kümmel, 632.
Mancos group, Cretaceous, Wyoming: Jamison, 856.
Mancos shale, Cretaceous, Wyoming: Woodruff, 1243.
Manhattan schist, New York: Berkey, 94.
Manitou, pre-Cambrian, Minnesota: Winchell, 1230.
Manlius limestone, Silurian, New York: Berkey, 94.

Mannies shale, Silurian, Tennessee: Ulrich, 1116.
Mannington sandstone, Carboniferous, West Virginia: Krebs, 630.
Mannington shale, Carboniferous, West Virginia: Hennen, 486.
Maquoketa formation, Ordovician, upper Mississippi Valley: Shaw, 1010.
Maquoketa shale, Ordovician, Minnesota: Hall *et al.*, 463.
Maquoketa shale, Ordovician, upper Mississippi Valley: Cox, 284.
Maquoketa shale, Silurian, Iowa: Ulrich, 1116.
Marathon conglomerate, Algonkian, Wisconsin: Van Hise and Leith, 1132.
Marble Falls limestone, Carboniferous, Texas: Paige, 835.
Marcellus black shale, Devonian, New York: Luther, 714.
Marcellus shale, Devonian, New York: Berkey, 94; Ulrich, 1116.
Marietta sandstone, Carboniferous, West Virginia: Hennen, 486; Krebs, 630.
Marks Head marl, Miocene, Georgia: Veatch and Stephenson, 1144.
Marshall Hill conglomerate, Algonkian, Wisconsin: Van Hise and Leith, 1132.
Marshalltown clay-marl, Cretaceous, New Jersey: Kümmel, 632.
Martinez formation, California: Dickerson, 335.
Martinsburg shale, Ordovician, Pennsylvania, Maryland: Ulrich, 1116.
Maryville limestone, Cambrian, Appalachian Valley, Tennessee: Ulrich, 1116.
Matawan beds, Cretaceous, New York: Berkey, 94.
Matawan formation, Cretaceous, Maryland: Miller, 780.
Mauch Chunk, Tennesseean, Pennsylvania: Ulrich, 1116.
Mauch Chunk formation, Mississippian, Pennsylvania: Munn, 813; Shaw and Munn, 1012.
Mauch Chunk shale, Mississippian, Pennsylvania: Munn, 813; Phalen and Martin, 862.
Maury green shale, Mississippian, Tennessee: Bassler, 76.
Maury shale, Waverlyan, Tennessee: Ulrich, 1116.
Maxville limestone, Carboniferous, Ohio: Morse, 808.
Maxville limestone, Tennessean, Ohio: Ulrich, 1116.
Maysville, Ordovician: Ulrich, 1116.
Mayville dolomite, Silurian, Wisconsin: Ulrich, 1116.
Meadville shale member, Mississippian, Pennsylvania: Shaw *et al.*, 1014.
Medina sandstone, Silurian, New York: Ulrich, 1116.
Meguma series, Algonkian, Nova Scotia: Knight, 616.
Mendota dolomite, Ozarkian, upper Mississippi Valley: Ulrich, 1116.
Meramec group, Mississippian, Missouri: Fenneman, 382.
Meramecian, Tennessean: Ulrich, 1116.
Mercer limestone, Pennsylvanian, Ohio: Mark, 734.
Mercer shale member, Pennsylvanian, Pennsylvania: Shaw and Munn, 1012; Shaw *et al.*, 1014.
Merchantville clay, Cretaceous, New Jersey: Kümmel, 632.
Mesabi, pre-Cambrian, Minnesota: Winchell, 1230.
Mesaverde formation, Cretaceous, Wyoming: Jamison, 556; Woodruff, 1243.
Mesnard quartzite, Algonkian, Michigan: Van Hise and Leith, 1132.
Metchosin volcanics, British Columbia: Clapp, 232.
Michigamme slate, Algonkian, Michigan: Van Hise and Leith, 1132.
Middlesex black shale, Devonian, New York: Luther, 714.
Midway formation, Eocene, Georgia: Veatch and Stephenson, 1144.
Midway formation, Eocene, Texas: Gordon, 430.
Midway limestone, Eocene, Mississippi: Logan, 696.
Milwaukee formation, Devonian, Wisconsin: Ulrich, 1116.
Mistassini limestones, Ordovician?, Quebec: Barlow *et al.*, 64.
Mitchell limestone, Mississippian, Indiana: Greene, 448.
Mitchell limestone, Tennesseean, Indiana: Ulrich, 1116.
Mizpah trachyte, Tertiary, Nevada: Spurr, 1050.
Moccasin (Bays), Ordovician, Appalachian Valley: Ulrich, 1116.
Mohave beds, Tertiary, California: Merriam, 763.
Mohawkian, Ordovician: Ulrich, 1116.
Mona schist, Archean, Michigan: Van Hise and Leith, 1132.
Monmouth formation, Cretaceous, Maryland: Miller, 780.
Monongahela formation, Pennsylvanian, Pennsylvania: Munn, 813; Shaw and Munn, 1012.
Monongahela series, Carboniferous, West Virginia: Hennen, 486; Krebs, 630.
Montana group, Cretaceous, Wyoming: Wegemann, 1184.
Monterey shales, Neocene, California: Anderson, 12.
Monte Sana, Tennesseean, Allegheny region: Ulrich, 1116.
Moorefield shale, Tennesseean, Ozark region: Ulrich, 1116.
Morgan (?) formation, Pennsylvanian, Idaho: Richards and Mansfield, 936.
Morgantown sandstone, Carboniferous, West Virginia: Hennen, 486; Krebs, 630.
Morgantown sandstone member, Pennsylvanian, Pennsylvania: Munn, 813; Shaw and Munn, 1012.
Morgantown ("Ebensburg") sandstone member, Carboniferous, Pennsylvania: Phalen and Martin, 862.
Morrison formation, Jurassic, Wyoming: Jamison, 556.
Morrison formation, Jurassic?, Wyoming: Woodruff, 1243.
Morrison formation (?), Lower Cretaceous?, Wyoming: Blackwelder, 109.
Moscow shale, Devonian, New York: Luther, 714.
Mosheim limestone, Ordovician, Tennessee: Ulrich, 1116.
Mosinee conglomerate, Algonkian, Wisconsin: Van Hise and Leith, 1132.
Mount Laurel sand, Cretaceous, New Jersey: Kümmel, 632.

Mount Sicker formation, Jurassic, British Columbia: Clapp, 232.
Mount Stevens group, pre-Devonian, British Columbia: Cairnes, 187.
Mowry beds, Cretaceous, Wyoming: Jamison, 556.
Mowry shale member, Cretaceous, Wyoming: Wegemann, 1184.
Moydart formation, Silurian, Nova Scotia: Williams, 1207.
Moyie formation, Cambrian?, British Columbia: Schofield, 991.
Murat limestone, Ordovician, Virginia: Ulrich, 1116.
Murfreesboro, Ordovician, Tennessee: Ulrich, 1116.
Murphy marble, Cambrian, Tennessee: Emmons and Laney, 373.
Muskogee group, Pennsylvanian, Oklahoma: Hutchison, 542.
Naknek formation, Jurassic, Alaska: Atwood, 28.
Nanaimo formation, Cretaceous, British Columbia: Clapp, 232.
Nanjemoy formation, Eocene, Maryland: Miller, 780.
Nantahala slate, Cambrian, Tennessee: Emmons and Laney, 373.
Nashville group, Ordovician, Tennessee: Ulrich, 1116.
Nation River formation, Carboniferous, Alaska: Brooks, 146.
Natural Bridge limestone, Canadian, Virginia: Ulrich, 1116.
Navarro formation, Cretaceous, Texas: Gordon, 430.
Navesink marl, Cretaceous, New Jersey: Kümmel, 632.
Negaunee formation, Algonkian, Michigan: Van Hise and Leith, 1132.
Neva limestone, Carboniferous, Kansas: Yates, 1255.
New Albany shale (lower), Devonian, Indiana, Kentucky: Ulrich, 1116.
New Albany shale (upper), Waverlyan, Indiana: Ulrich, 1116.
Newark series, Jura-Trias, New York: Berkey, 94.
Newland formation, Algonkian, Idaho: Pardee, 843.
Newman limestone, Tennesseean, Allegheny region: Ulrich, 1116.
New Providence formation, Mississippian, Tennessee: Bassler, 76.
New Providence shale, Waverlyan, Indiana, Tennessee: Ulrich, 1116.
New Richmond sandstone, Ordovician, Minnesota: Hall *et al.*, 463.
New Richmond sandstone, Ozarkian, upper Mississippi Valley: Ulrich, 1116.
New Scotland formation, Devonian, New York: Ulrich, 1116.
New Scotland limestone, Devonian, New York: Berkey, 94.
Niagaran, Silurian, Wisconsin: Cleland, 255.
Niagaran group, Silurian: Ulrich, 1116.
Nikolai greenstone, Triassic or pre-Triassic, Alaska: Moffit and Capps, 799.
Nineveh limestone, Carboniferous, West Virginia: Hennen, 486.
Nineveh sandstone, Carboniferous, West Virginia: Hennen, 486; Krebs, 630.
Niobrara shale, Cretaceous, Wyoming: Wegemann, 1184.
Nipigon formation, Algonkian, Lake Superior region: Van Hise and Leith, 1132.
Nittany dolomite, Canadian, Pennsylvania: Ulrich, 1116.
Noix limestone, Silurian, Illinois, Missouri: Ulrich, 1116.
Nolichucky shale, Cambrian, Appalachian Valley, Tennessee: Ulrich, 1116.
Nonesuch shale, Algonkian, Michigan: Van Hise and Leith, 1132.
Normanskill, Ordovician, Pennsylvania, New York: Ulrich, 1116.
North Mound conglomerate, Algonkian, Wisconsin: Van Hise and Leith, 1132.
Notch Peak formation, Ozarkian, Utah: Ulrich, 1116.
Nottely quartzite, Cambrian, Tennessee: Emmons and Laney, 373.
Nounan limestone, Cambrian, Idaho: Richards and Mansfield, 936.
Nowata formation, Pennsylvanian, Oklahoma: Hutchison, 542.
Nowata shale, Pennsylvanian, Oklahoma: Ohern, 831.
Nugget sandstone, Jurassic or Carboniferous, Wyoming: Blackwelder, 109.
Nunda sandstone, Devonian, New York: Luther, 714.
Ogishke conglomerate, Algonkian, Minnesota: Van Hise and Leith, 1132.
Ohio shales, Devonian, Ohio: Branson, 135.
Okefenokee formation, Pleistocene, Georgia: Veatch and Stephenson, 1144.
Olentangy shale, Devonian, Ohio: Branson, 135; Ulrich, 1116.
Oneida, Silurian, New York: Ulrich, 1116.
Oneonta sandstone, Devonian, New York: Berkey, 94.
Oneota, Devonian, New York: Ulrich, 1116.
Oneota dolomite, Ordovician, Minnesota: Hall *et al.*, 463.
Oneota dolomite, Ozarkian, Upper Mississippi Valley: Ulrich, 1116.
Onondaga limestone, Devonian, New York: Berkey, 94; Luther, 714; Ulrich, 1116.
Oolagah formation, Pennsylvanian, Oklahoma: Ohern, 831.
Oolagah limestone, Pennsylvanian, Oklahoma: Hutchison, 542.
Oregon dolomite, Ordovician, Kentucky: Ulrich, 1116.
Oriskany, Devonian: Ulrich, 1116.
Oriskany formation, Devonian, New York: Berkey, 94.
Oriskany sandstone, Devonian, New York: Luther, 714.
Oriskany sandstone, Devonian, Ontario: Stauffer, 1054.
Oro Grande series, Miocene, California: Baker, 45.
Orr formation, Cambrian, Utah: Ulrich, 1116.
Osage group, Mississippian, Missouri: Fenneman, 382.

Osagian series, Waverlyan: Ulrich, 1116.
Osgood limestone, Silurian, Kentucky, Indiana: Ulrich, 1116.
Oswego (Bald Eagle), Ordovician, Pennsylvania: Ulrich, 1116.
Oswego sandstone, Ordovician, New York: Ulrich, 1116.
Ottosee shale, Ordovician, Appalachian Valley, Tennessee: Ulrich, 1116.
Ouachita shale, Canadian, Arkansas: Ulrich, 1116.
Outer conglomerate, Algonkian, Michigan: Van Hise and Leith, 1132.
Oxmoor formation, Mississippian, Alabama: Munn, 814.
Ozarkian system: Ulrich, 1116.
Packsaddle schist, pre-Cambrian, Texas: Paige, 835.
Paget formation, Quaternary, Bermuda Islands: Bullen, 163.
Palisade diabase, Jura-Trias, New York: Berkey, 94.
Palmer gneiss, Archean, Michigan: Van Hise and Leith, 1132.
Palms formation, Algonkian, Michigan and Wisconsin: Van Hise and Leith, 1132.
Pamelia limestone, Ordovician, New York: Cushing, 297: Ulrich, 1116.
Pamunkey group, Eocene, Maryland: Miller, 780.
Pamunkey group, Eocene, Virginia: Darton, 309.
Papagallos shales, Cretaceous, Mexico: Dumble, 355.
Park City formation, Pennsylvanian, Idaho: Richards and Mansfield, 936.
Park City formation, Pennsylvanian, Wyoming: Blackwelder, 109.
Parkman sandstone member, Cretaceous, Wyoming: Wegemann, 1184.
Parkwood formation, Mississippian, Alabama: Munn, 814.
Parkwood formation, Tennesseean, Alabama: Ulrich, 1116.
Paspotansa member, Eocene, Maryland: Miller, 780.
Patapsco formation, Cretaceous, Maryland: Clark, Bibbins, and Berry, 245; Miller, 780.
Patton shale, Mississippian, Pennsylvania: Munn, 813.
Patuxent formation, Cretaceous, Maryland: Clark, Bibbins, and Berry, 245; Miller, 780.
Patuxent formation, Cretaceous, Virginia: Darton, 309.
Pawnee limestone, Pennsylvanian, Oklahoma: Hutchison, 542.
Payette formation, Tertiary, Oregon and Idaho: Washburne, 1170.
Pearisburg limestone, Ordovician, Appalachian Valley: Ulrich, 1116.
Peekskill granite, New York: Berkey, 94.
Pegram limestone, Devonian, Tennessee: Ulrich, 1116.
Pelham, Canadian, Alabama: Ulrich, 1116.
Pella limestone, Tennessean, Iowa: Ulrich, 1116.
Pennington shale, Carboniferous, Virginia; Campbell and Woodruff, 203.
Pennington shale, Mississippian, Alabama: Munn, 814.
Pennington shale, Mississippian, Tennessee: Phalen, 859, 860.
Pennington shale, Tennessean, Allegheny region, Alabama: Ulrich, 1116.
Pennsylvanian system: Ulrich, 1116.
Perkins group, Devonian?, British Columbia: Cairnes, 187.
Perryville limestone, Ordovician, Kentucky: Ulrich, 1116.
Peshastin formation, Carboniferous?, Washington: Weaver, 1180.
Phelps sandstone, Waverlyan, Ozark region: Ulrich, 1116.
Picayune volcanic group, Tertiary, Colorado: Cross, 287.
Pierce, Ordovician, Tennessee: Ulrich, 1116.
Pierre formation, Cretaceous, Wyoming: Wegemann, 1184.
Pierre shale, Cretaceous, Montana and North Dakota: Leonard, 678.
Pierre shale, Upper Cretaceous, Wyoming: Blackwelder, 109.
Pine Creek limestone, Carboniferous, Pennsylvania: Raymond, 900.
Piscataway member, Eocene, Maryland: Miller, 780.
Pitkin limestone, Mississippian, Oklahoma: Hutchison, 542.
Pitkin limestone, Tennessean, Ozark region: Ulrich, 1116.
Pittsburg limestone member, Pennsylvanian, Pennsylvania: Munn, 813; Shaw and Munn, 1012.
Pittsburg red shale, Carboniferous, West Virginia: Hennen, 486; Krebs, 630.
Pittsburgh sandstone, Carboniferous, West Virginia: Krebs, 630.
Pittsburg sandstone (upper and lower), Carboniferous, West Virginia: Hennen, 486.
Pittsburg sandstone member, Pennsylvanian, Pennsylvania, Munn, 813.
Pittsford, Silurian, New York: Ulrich, 1116.
Plattin limestone, Ordovician, Missouri: Ulrich: 1116.
Platteville limestone, Ordovician, Iowa and Minnesota: Bassler, 72.
Platteville limestone, Ordovician, Minnesota: Hall, *et al.*, 463.
Platteville limestone, Ordovician, upper Mississippi Valley: Cox, 284; Ulrich, 1116.
Plum Point marls, Miocene, Maryland: Miller, 780.
Pochuck gneisses, pre-Cambrian, New Jersey: Bayley, 84.
Pocono formation, Mississippian, Pennsylvania Munn, 813; Phalen and Martin, 862.
Pocono group, Mississippian, Pennsylvania: Shaw and Munn, 1012; Shaw *et al.*, 1014.
Pocono sandstone, Waverlyan, Pennsylvania: Ulrich, 1116.
Pokegama quartzite, Algonkian, Minnesota: Van Hise and Leith, 1132.
Polk Bayou (upper), Silurian, Arkansas: Ulrich, 1116.
Pomeroy sandstone, Carboniferous, West Virginia: Krebs, 630.
Portage formation, Devonian, New York: Ulrich, 1116.
Portage (?) formation, Devonian, Pennsylvania: Shaw and Munn, 1012; Shaw *et al.*, 1014.

Port Clarence limestone, Alaska: Kindle, 609.
Porter's Creek formation, Eocene, Mississippi: Logan, 696.
Porter's Creek formation, Eocene, Tennessee: Nelson, 818.
Port Ewen limestone, Devonian, New York: Berkey, 94; Ulrich, 1116.
Port Hudson formation, Pleistocene, Texas: Gordon, 430.
Potapaco formation, Eocene, Maryland: Miller, 780.
Potomac group, Cretaceous, Maryland: Clark, Bibbins, and Berry, 245; Miller, 780.
Potomac group, Cretaceous, Virginia: Darton, 309.
Potosi, Ozarkian, Missouri: Ulrich, 1116.
Potosi formation, Cambrian, Missouri: Hughes, 532,
Potosi volcanic series, Tertiary, Colorado: Cross, 287; Larsen, 664.
Potsdam, Cambrian, New York: Gordon 429.
Potsdam, Ozarkian, New York: Ulrich, 1116.
Potsdam sandstone, Cambrian, New York: Miller, 794.
Pottsville formation, Carboniferous, Pennsylvania: Phalen and Martin, 862.
Pottsville formation, Pennsylvanian, Alabama: Munn, 814.
Pottsville formation, Pennsylvanian, Pennsylvania: Shaw and Munn, 1012; Shaw *et al.*, 1014.
Pottsville series, Pennsylvanian, Pennsylvania: Munn, 813.
Poughquag quartzite, Cambrian, New York: Gordon, 429.
Poughquag quartzite, New York: Berkey, 94.
Powers Bluff quartzite, Algonkian, Wisconsin: Van Hise and Leith, 1132.
Prairie du Chien group, Ordovician, Minnesota: Hall *et al.*, 463.
Prichard formation, Algonkian, Idaho: Pardee, 843.
Princeton sandstone, Tennesseean, West Virginia: Ulrich, 1116.
Proctor dolomite, Ozarkian, Missouri: Ulrich, 1116.
Prosser limestone, Ordovician, Iowa and Minnesota: Bassler, 72.
Prosser limestone, Ordovician, Minnesota: Ulrich, 1115, 1116.
Prout limestone, Devonian, Ohio: Branson, 135.
Providence sand member, Upper Cretaceous, Georgia: Veatch and Stephenson, 1144.
Puckwunge conglomerate, Algonkian, Lake Superior region: Van Hise and Leith, 1132.
Pulaski formation, Ordovician, New York: Ulrich, 1116.
Purcell sills, Cambrian?, British Columbia: Schofield, 991.
Purefoys Mill series, North Carolina: Fry, 400.
Purisima formation, Pliocene, California: Hannibal, 469.
Put-in-Bay, Silurian, Ohio: Ulrich, 1116.
Quadrant formation, Pennsylvanian, Montana: Stone, 1068.
Quadrant formation, Pennsylvanian, Wyoming: Blackwelder, 109.
Quincy granite series, Massachusetts: Loughlin, 704.
Quinnesec schist, Algonkian, Michigan: Van Hise and Leith, 1132.
Racine dolomite, Silurian, Wisconsin: Ulrich, 1116.
Ralston group, Pennsylvanian, Oklahoma: Hutchison, 542.
Ramona formation, Pennsylvanian, Oklahoma: Ohern, 831.
Randville dolomite, Algonkian, Michigan: Van Hise and Leith, 1132.
Raritan formation, Cretaceous, Maryland: Miller, 780.
Raritan formation, Cretaceous, New Jersey: Kümmel, 632.
Raritan formation, Cretaceous, New York: Berkey, 94.
Ravenswood granodiorite, New York: Berkey, 94; Ziegler, 1260.
Reagan formation, Cambrian, Oklahoma: Ulrich, 1116.
Reagan sandstone, Cambrian, Oklahoma: Hutchison, 542.
Red Bank sand, Cretaceous, New Jersey: Kümmel, 632.
Reedsville shale, Ordovician, Pennsylvania: Ulrich, 1116.
Renfroes marl, Upper Cretaceous, Georgia: Veatch and Stephenson, 1144.
Revett formation, Algonkian, Idaho: Pardee, 843.
Reynosa formation, Mexico: Dumble, 355.
Rhinestreet black shale, Devonian, New York: Luther, 714.
Rib Hill quartzite, Algonkian, Wisconsin: Van Hise and Leith, 1132.
Richmondian, Silurian: Ulrich, 1116.
Ridgetop shale, Mississippian, Tennessee: Bassler, 76.
Ridgetop shale, Waverlyan, Tennessee: Ulrich, 1116.
Ridley, Ordovician, Tennessee: Ulrich, 1116.
Ripley formation, Upper Cretaceous, Georgia: Veatch and Stephenson, 1144.
Ripley limestone, Cretaceous, Mississippi: Logan, 696.
Ripley sands, Cretaceous, Tennessee: Nelson, 818.
Riverside sandstone, Waverlyan, Indiana: Ulrich, 1116.
Rochester shale, Silurian, New York: Ulrich, 1116.
Rockford limestone, Waverlyan, Indiana: Ulrich, 1116.
Rockmart, Ordovician, Alabama: Ulrich, 1116.
Rockport limestone, Carboniferous, West Virginia: Hennen, 486; Krebs, 630.
Rockwood, Silurian, Tennessee, Alabama: Ulrich, 1116.
Rockwood formation, Silurian, Tennessee: Nelson, 820.
Rocky Mountain quartzite, Carboniferous, Alberta: Shimer, 1022.
Rocky Mountain quartzites, Carboniferous or Triassic, Alberta: Malloch, 730.
Rogersville shale, Cambrian, Appalachian Valley, Tennessee: Ulrich, 1116.
Rome shale and sandstone, Cambrian, Appalachian Valley: Ulrich, 1116.
Romney, Devonian, Appalachian Valley: Ulrich, 1116.
Rondout cement, Silurian, New York: Berkey, 94.
Rosamond series, Miocene, California: Baker, 45.

Rosendale cement, Silurian, New York: Berkey, 94.
Ross Brook formation, Silurian, Nova Scotia: Williams, 1207.
Roubidoux formation, Cambrian, Missouri: Hughes, 532; Lee, 672.
Roubidoux formation, Ozarkian, Missouri: Ulrich, 1116.
Rove slate, Algonkian, Minnesota and Ontario: Van Hise and Leith, 1132.
Roxbury conglomerate, Massachusetts: Loughlin, 704.
Rush Run sandstone, Carboniferous, West Virginia: Hennen, 486; Krebs, 630.
Russell shale, Cambrian, Appalachian Valley: Ulrich, 1116.
Rutledge limestone, Cambrian, Appalachian Valley, Tennessee: Ulrich, 1116.
Sac limestone, Waverlyan, Ozark region: Ulrich, 1116.
St. Charles limestone, Cambrian, Idaho: Richards and Mansfield, 936.
St. Clair limestone, Silurian, Arkansas, Oklahoma: Ulrich, 1116.
St. Croxian, Cambrian: Ulrich, 1116.
Ste. Genevieve formation, Tennessean, Missouri: Ulrich, 1116.
St. Joe member, Waverlyan, Missouri: Ulrich, 1116.
St. Lawrence formation, Cambrian, Minnesota: Hall *et al.*, 463.
St. Lawrence (Mendota) limestone, Cambrian and Ozarkian, Upper Mississippi Valley: Ulrich, 1116.
St. Louis limestone, Mississippian, Missouri and Illinois: Fenneman, 382.
St. Louis limestone, Mississippian, Tennessee: Bassler, 76.
St. Louis limestone, Tennessean, Mississippi Valley: Ulrich, 1116.
St. Peter sandstone, Ordovician, Minnesota: Hall *et al.*, 463.
St. Peter sandstone, Ordovician, Mississippi Valley: Ulrich, 1116.
St. Peter sandstone, Ordovician, Missouri and Illinois: Fenneman, 382.
St. Regis formation, Algonkian, Idaho: Pardee, 843.
Salina, Silurian, New York, Ohio: Ulrich, 1116.
Saltsburg sandstone, Carboniferous, West Virginia: Hennen, 486.
Saltsburg sandstone member, Carboniferous, Pennsylvania: Phalen and Martin, 862.
Saltsburg sandstone member, Pennsylvanian, Pennsylvania: Munn, 813; Shaw and Munn, 1012.
Saluda, Silurian, Indiana, Kentucky: Ulrich, 1116.
Sandsuck shale, Cambrian, Tennessee: Ulrich, 1116.
San Fernando beds, Oligocene, Mexico: Dumble, 355.
San Juan tuff, Colorado: Cross, 287.
Santa Clara formation, Pliocene, California: Hannibal, 469.
Sapulpa group, Pennsylvania, Oklahoma: Hutchison, 542.
Satilla formation, Pleistocene, Georgia: Veatch and Stephenson, 1144.
Saunders formation, Algonkian, Michigan: Van Hise and Leith, 1132.
Schoharie, Devonian, New York: Ulrich, 1116.
Schoharie shales, Devonian, New York: Berkey, 94.
Scotland beds, Cretaceous, Barbados: Guppy, 458.
Seeley slate, Algonkian, Wisconsin: Van Hise and Leith, 1132.
Selkirk series, pre-Cambrian, British Columbia: LeRoy, 681.
Sellersburg limestone, Devonian, Indiana: Ulrich, 1116.
Selma clay, Cretaceous, Tennessee: Nelson, 818.
Selma limestone, Cretaceous, Mississippi: Logan, 696.
Selma sandstone, Cretaceous, Mississippi: Logan, 696.
Sevier shale, Ordovician, Appalachian Valley: Ulrich, 1116.
Sewickley sandstone, Carboniferous, West Virginia: Hennen, 486.
Seymour gravel, Quaternary, Texas: Gordon, 431.
Shady limestone, Cambrian, Tennessee: Ulrich, 1116.
Shakopee dolomite, Ozarkian, upper Mississippi Valley: Ulrich, 1116.
Shakopie dolomite, Ordovician, Minnesota: Hall *et al.*, 463.
Shaktolik group, Cretaceous, Alaska: Smith and Eakin, 1033.
Shannon sandstone lentil, Cretaceous, Wyoming: Wegemann, 1184.
Shark River marl, Eocene, New Jersey: Kümmel, 632.
Sharon conglomerate, Carboniferous, Ohio: Lamb, 657.
Sharon conglomerate, Pennsylvanian, Ohio: Mark, 734.
Shawangunk conglomerate, Silurian, New York: Berkey, 94; Ulrich, 1116.
Shenandoah Mountain granite, New York: Gordon, 429.
Sherburne formation, Devonian, New York: Berkey, 94; Ulrich, 1116.
Sherwood limestone, Cambrian, Virginia: Ulrich, 1116.
Short Creek oolite, Tennessean, Ozark region: Ulrich, 1116.
Shuswap series, pre-Cambrian, British Columbia: LeRoy, 681.
Siamo slate, Algonkian, Michigan: Van Hise and Leith, 1132.
Silver Creek dolomite, Devonian, New York: Ulrich, 1116.
Silverton volcanic series, Tertiary, Colorado: Cross, 287.
Similkameen granite, Cretaceous?, Washington: Umpleby, 1119.
Simpson formation, Ordovician, Oklahoma: Hutchison, 542; Ulrich, 1116.
Sioux quartzite, Algonkian, Minnesota: Hall *et al.*, 463.
Skaneateles shale, Devonian, New York: Luther, 714.
Skeena series, Cretaceous, British Columbia: Leach, 670.
Skiatook shale, Pennsylvanian, Oklahoma: Ohern, 831.
Skwentna group, Jurassic, Alaska: Brooks, 146.
Slocan series, pre-Cambrian, British Columbia: LeRoy, 681.

Smithwick shale, Carboniferous, Texas: Paige, 835.
Snake Hill shale, Ordovician, New York: Ulrich, 1116.
Sneedville limestone, Silurian, Appalachian Valley: Ulrich, 1116.
Sodus shale, Silurian, New York: Ulrich, 1116.
Solsberry formation, Mississippian, Indiana: Greene, 448.
Soudan formation, Archean, Minnesota: Van Hise and Leith, 1132.
Spence shale member, Cambrian, Idaho: Richards and Mansfield, 936.
Spergen limestone, Mississippian, Missouri and Illinois: Fenneman, 382.
Spergen limestone, Tennessean, Mississippi Valley: Ulrich, 1116.
Springfield dolomite, Silurian, Ohio: Ulrich, 1116.
Stafford limestone, Devonian, New York: Luther, 714.
Standley shale, Carboniferous, Oklahoma: Hutchison, 542.
Staniukovich shale, Cretaceous, Alaska: Atwood, 28.
Stanton limestone member, Pennsylvanian, Oklahoma: Ohern, 831.
Starrs conglomerate, Cambrian, Tennessee: Ulrich, 1116.
State Quarry limestone, Devonian, Iowa: Ulrich, 1116.
Stewartville dolomite, Ordovician, Iowa and Minnesota: Bassler, 72.
Stewartville dolomite, Ordovician, upper Mississippi Valley: Ulrich, 1116.
Stonehenge limestone, Canadian, Pennsylvania: Ulrich, 1116.
Stone House formation, Silurian, Nova Scotia: Williams, 1207.
Stones River group, Ordovician: Cushing, 297; Ulrich, 1116.
Stones River group, Ordovician, Iowa and Minnesota: Bassler, 72.
Storm King gneissoid granite, New York: Berkey, 94.
Strawn formation, Pennsylvanian, Texas: Gordon, 431.
Stringtown shale, Canadian, Arkansas: Ulrich, 1116.
Stringtown shale, Ordovician, Oklahoma: Hutchison, 542.
Striped Peak formation, Algonkian, Idaho: Pardee, 1068.
Sturgeon quartzite, Algonkian, Michigan: Van Hise and Leith, 1132.
Sulphur Springs formation, Waverlyan, Mississippi Valley: Ulrich, 1116.
Summerhill sandstone member, Carboniferous, Pennsylvania: Phalen and Martin, 862.
Sunbury shale, Waverlyan, Ohio: Ulrich, 1116.
Sundance formation, Jurassic, Wyoming: Blackwelder, 109; Jamison, 556; Woodruff, 1243.
Sunday quartzite, Algonkian, Michigan and Wisconsin: Van Hise and Leith, 1132.
Sunderland formation, Pleistocene, Maryland: Miller, 780.
Sunrise series, Alaska: Brooks, 146.
Sutton formation, Jurassic, British Columbia: Clapp and Shimer, 233.
Sutton Mountain series, pre-Cambrian, Quebec: Dresser, 349.
Swauk formation, Tertiary, Washington: Weaver, 1180.
Sweetland shale, Waverlyan, Mississippi Valley: Ulrich, 1116.
Sycamore limestone, Mississippian, Oklahoma: Hutchison, 542.
Sycamore limestone, Tennessean, Oklahoma: Ulrich, 1116.
Sylamore sandstone member, Waverlyan, Ozark region: Ulrich, 1116.
Sylvan shale, Ordovician, Oklahoma: Hutchison, 542.
Sylvan shale, Silurian, Oklahoma: Ulrich, 1116.
Sylvania sandstone, Silurian, Ohio: Ulrich, 1116.
Syracuse, Silurian, New York: Ulrich, 1116.
Taku group, Devonian?, British Columbia: Cairnes, 187.
Talbot formation, Pleistocene, Maryland: Miller, 780.
Talihina chert, Ordovician, Oklahoma: Hutchison, 542.
Tallahatta sandstone, Tertiary, Mississippi: Logan, 696.
Tantalus conglomerate, Jura-Cretaceous, British Columbia: Cairnes, 187.
Tatina group, Ordovician, Alaska: Brooks, 146.
Taylor marl, Cretaceous, Texas: Gordon, 430.
Taylor sandstone, Carboniferous, West Virginia: Hennen, 486.
Tejon formation, California: Dickerson, 335.
Tejon formation, Eocene, California: Lindgren, 690.
Tellico sandstone, Ordovician, Tennessee: Ulrich, 1116.
Temblor group, Neocene, California: Anderson, 12.
Tennessean: Bassler, 76; Ulrich, 1116.
Tensleep sandstone, Carboniferous, Wyoming: Jamison, 556.
Tensleep sandstone, Pennsylvanian, Wyoming: Blackwelder, 109.
Teton formation, Triassic and Carboniferous, Wyoming: Blackwelder, 109.
Thaynes limestone, Triassic or Carboniferous, Idaho: Richards and Mansfield, 936.
Thaynes limestone, Triassic or Carboniferous, Wyoming: Blackwelder, 109.
Thebes formation, Silurian, Illinois, Missouri: Ulrich, 1116.
Theresa formation, Cambrian, New York: Cushing, 297; Miller, 794.
Theresa (typical), Ozarkian, New York: Ulrich, 1116.
Theresa (upper), Canadian, New York: Ulrich, 1116.
Thousand Creek beds, Pliocene, Nevada: Merriam, 764.
Threeforks limestone, Devonian, Wyoming: Blackwelder, 109.
Tichenor limestone, Devonian, New York: Luther, 714.
Tinton bed, Cretaceous, New Jersey: Kümmel, 632.
Tombigbee sand member, Upper Cretaceous, Georgia: Veatch and Stephenson, 1144.
Tomstown limestone, Cambrian, Maryland basin: Ulrich, 1116.

Tonoloway limestone, Silurian, Appalachian Valley: Ulrich, 1116.
Tonzona group, Silurian or Devonian, Alaska: Brooks, 146.
Tordrillo formation, Jurassic, Alaska: Brooks, 146.
Traders member, Algonkian, Michigan: Van Hise and Leith, 1132.
Trenton, Ordovician: Ulrich, 1116.
Trenton, Ordovician, New York: Gordon, 429.
Trenton gravel, Pleistocene, New Jersey: Volk, 1146.
Trenton group, Ordovician, Iowa and Minnesota: Bassler, 72.
Trenton limestone, Ordovician, New York: Miller, 794.
Tribes Hill limestone, Canadian, New York: Ulrich, 1116.
Tribes Hill limestone, Ordovician?, New York: Cushing, 297.
Tribes Hill limestone, Ordovician, New York: Miller, 794.
Tribune limestone, Tennessean, Kentucky, Indiana: Ulrich, 1116.
Tullahoma, Waverlyan, Tennessee: Ulrich, 1116.
Tullahoma formation, Mississippian, Tennessee: Bassler, 76.
Tully limestone, Devonian, New York: Ulrich, 1116.
Tulsa group, Pennsylvanian, Oklahoma: Hutchison, 542.
Tuscarora sandstone, Silurian, Appalachian Valley: Ulrich, 1116.
Tusquitee quartzite, Cambrian, Tennessee: Emmons and Laney, 373.
Tuxpam beds, Miocene, Mexico: Dumble, 355.
Twin Creek limestone, Jurassic, Wyoming: Blackwelder, 109.
Tyler slate, Algonkian, Michigan and Wisconsin: Van Hise and Leith, 1132.
Tymochtee, Silurian, Ohio: Ulrich, 1116.
Tyrone, Ordovician, Kentucky: Ulrich, 1116.
Uinta formation, Eocene, Wyoming: Sinclair and Granger, 1024.
Ungalik conglomerate, Cretaceous, Alaska: Smith and Eakin, 1033.
Uniontown limestone, Carboniferous, West Virginia: Hennen, 486; Krebs, 630.
Uniontown member, Pennsylvanian, Pennsylvania: Shaw and Munn, 1012.
Uniontown sandstone, Carboniferous, West Virginia: Hennen, 486; Krebs, 630.
Uniontown sandstone member, Pennsylvanian, Pennsylvania: Munn, 813.
Upper Freeport limestone member, Carboniferous, Pennsylvania: Phalen and Martin, 862.
Ute limestone, Cambrian, Idaho: Richards and Mansfield, 936.
Utica shale, Ordovician, New York: Miller, 794; Ruedemann, 962; Ulrich, 1116.
Valcour limestone, Ordovician, Champlain Valley: Ulrich, 1116.
Valcour limestone, Ordovician, New York: Cushing, 297.
Valdez group, Alaska: Brooks, 146.
Valley Spring gneiss, pre-Cambrian, Texas: Paige, 835.
Valleytown formation, Cambrian, Tennessee: Emmons and Laney, 373.
Vancouver group, British Columbia: Clapp and Shimer, 233.
Vancouver group, Jurassic and Triassic?, British Columbia: Clapp, 232.
Vanport limestone, Carboniferous, Pennsylvania: Raymond, 900.
Vanport limestone member, Pennsylvanian, Pennsylvania: Shaw and Munn, 1012; Shaw *et al.*, 1014.
Vernon, Silurian, New York: Ulrich, 1116.
Vicksburg formation, Oligocene: Ulrich, 1116.
Vicksburg formation, Oligocene, Georgia: Veatch and Stephenson, 1144.
Vicksburg limestone, Tertiary, Mississippi: Logan, 696.
Vincentown sand, Cretaceous, New Jersey: Kümmel, 632.
Vinita formation, Pennsylvanian, Oklahoma: Ohern, 831.
Viola limestone, Ordovician, Oklahoma: Hutchison, 542; Ulrich, 1116.
Virginia slate, Algonkian, Minnesota: Van Hise and Leith, 1132.
Virgin Valley beds, Miocene, Nevada: Merriam, 764.
Vulcan formation, Algonkian, Michigan: Van Hise and Leith, 1132.
Walden formation, Pennsylvanian, Tennessee: Phalen, 859, 860.
Waldron, Silurian, Indiana: Ulrich, 1116.
Wall Creek sandstone lentil, Cretaceous, Wyoming: Wegemann, 1184.
Walsingham formation, Pliocene, Bermuda Islands: Bullen, 163.
Wann formation, Pennsylvanian, Oklahoma: Ohern, 831.
Wapanucka limestone, Pennsylvanian, Oklahoma: Hutchison, 542.
Wapiabi shales, Cretaceous, Alberta: Malloch, 730.
Wappinger limestone, Cambro-Ordovician, New York: Berkey, 94; Gordon, 429.
Wapsipinicon limestone, Devonian, Iowa: Ulrich, 1116.
Warsaw formation, Tennessean, Mississippi Valley: Ulrich, 1116.
Warsaw shale, Mississippian, Missouri: Fenneman, 382.
Wasatch formation, Eocene, Wyoming: Sinclair and Granger, 1024.
Washington fireclay shale, Carboniferous, West Virginia: Krebs, 630.
Washington formation, Permian, Pennsylvania: Munn, 813; Shaw and Munn, 1012.
Washington limestone, Carboniferous, West Virginia: Hennen, 486; Krebs, 630.
Washington limestone member, Permian, Pennsylvania: Shaw and Munn, 1012.
Washington sandstone, Carboniferous, West Virginia: Krebs, 630.
Washington sandstone member, Permian, Pennsylvania: Shaw and Munn, 1012.

Watauga, Cambrian, Appalachian Valley: Ulrich, 1116.
Waterloo quartzite, Algonkian, Wisconsin: Van Hise and Leith, 1132.
Watertown limestone, Ordovician, New York: Cushing, 297; Ulrich, 1116.
Waubakee formation, Silurian, Wisconsin: Cleland, 255.
Waubakee limestone, Silurian, Wisconsin: Ulrich, 1116.
Waukesha dolomite, Silurian, Wisconsin: Ulrich, 1116.
Wausau graywacke, Algonkian, Wisconsin: Van Hise and Leith, 1132.
Waverlyan: Ulrich, 1116.
Waverlyan period, Mississippian, Tennessee: Bassler, 76.
Wawa tuff, Archean, Ontario: Van Hise and Leith, 1132.
Waynesboro formation, Cambrian, Maryland basin: Ulrich, 1116.
Waynesburg limestone, Carboniferous, West Virginia: Krebs, 630.
Waynesburg limestone member, Pennsylvanian, Pennsylvania: Shaw and Munn, 1012.
Waynesburg sandstone, Carboniferous, West Virginia: Hennen, 486; Krebs, 630.
Waynesburg sandstone member, Permian, Pennsylvanian: Shaw and Munn, 1012.
Waynesville, Silurian, Ohio, Indiana: Ulrich, 1116.
Weber (?) formation, Pennsylvania, Idaho: Richards and Mansfield, 936.
Weber quartzite, Pennsylvanian, Wyoming: Blackwelder, 109.
Wellesley formation, Devonian or Carboniferous, Alaska: Brooks, 146.
Wells chert, Canadian, Tennessee: Ulrich, 1116.
Wenonah sand, Cretaceous, New Jersey: Kümmel, 632.
West End rhyolite, Tertiary, Nevada: Spurr, 1050.
West River dark shale, Devonian, New York: Luther, 714.
West Union, Silurian, Ohio: Ulrich, 1116.
Weverton sandstone, Cambrian, Maryland basin: Ulrich, 1116.
Wewe slate, Algonkian, Michigan: Van Hise and Leith, 1132.
Wewoka formation, Pennsylvanian, Oklahoma: Girty, 419.
Wheaton River volcanics, Tertiary?, British Columbia: Cairnes, 187.
White River beds, Tertiary, Montana, and North Dakota: Leonard, 678.
Whitewater, Silurian, Ohio, Kentucky, Indiana: Ulrich, 1116.
Wichita formation, Permian, Texas: Gordon, 431.
Wicomico formation, Pleistocene, Maryland: Miller, 780.
Wilberns formation, Cambrian, Texas: Paige, 835.
Wilbur limestone, Silurian, New York: Berkey, 94.
Wilcox formation, Eocene, Georgia: Veatch and Stephenson, 1144.
Wilcox ("Sabine") formation, Eocene, Texas: Gordon, 430.
Williamson, Silurian, New York: Ulrich, 1116.
Wills Creek formation, Silurian, Appalachian Valley: Ulrich, 1116.
Wilmore formation, Ordovician, Kentucky: Ulrich, 1116.
Wilmore limestone, Ordovician, Kentucky: Ulrich, 1116.
Wilmore sandstone member, Carboniferous, Pennsylvania: Phalen and Martin, 862.
Wind River formation, Tertiary, Wyoming: Woodruff, 1243.
Wind River sandstones, Eocene, Wyoming: Sinclair and Granger, 1024.
Wind River series, Eocene, Wyoming: Sinclair and Granger, 1024.
Wind River shales, Eocene, Wyoming: Sinclair and Granger, 1024.
Wind River tuffs, Eocene, Wyoming: Sinclair and Granger, 1024.
Windsor group, Mississippian, Nova Scotia: Williams, 1207.
Wiscoy beds, Devonian, New York: Luther, 714.
Wishards sill, Idaho: Pardee, 843.
Wolcott limestone, Silurian, New York: Ulrich, 1116.
Woodbine sand, Cretaceous, Texas: Gordon, 430.
Woodbury clay, Cretaceous, New Jersey: Kümmel, 632.
Woodford chert, Devonian, Oklahoma: Hutchison, 542.
Woodford formation, Waverlyan, Oklahoma: Ulrich, 1116.
Woods Run limestone, Carboniferous, Pennsylvania: Raymond, 900.
Woodside limestone, Triassic or Carboniferous, Idaho: Richards and Mansfield, 936.
Woodside shale, Triassic or Carboniferous, Wyoming: Blackwelder, 109.
Woodstock formation, Eocene, Maryland: Miller, 780.
Wykoff limestone, Silurian, Iowa, Minnesota: Ulrich, 1116.
Wyoming formation, Triassic?, Colorado: Ransome, 889.
Yegua beds, Eocene, Texas: Dumble, 353.
Yellville formation, Canadian, Missouri, Arkansas: Ulrich, 1116.