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Geologic Names of North America Introduced in 1936-1955

GEOLOGICAL SURVEY BULLETIN 1056-A

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Geologic Names of North America Introduced in 1936-1955

By DRUID WILSON, WILLIAM J. SANDO, *and* RUDOLPH W. KOPF

Prepared with the assistance of BARBARA BEDETTE, JEAN L. EGGLETON, GRACE C. KEROHER, CAROLYN MANN, WILLIAM G. MELTON, JR., KATHERINE DENNISON PALMER, *and* JACK E. SMEDLEY

GEOLOGIC NAMES OF NORTH AMERICA

U.S. GEOLOGICAL SURVEY BULLETIN 1056-A

A compilation of new geologic names of North America, including Greenland, the West Indies, the Pacific Island possessions of the United States, and the Trust Territory of the Pacific Islands

U.S. GEOLOGICAL SURVEY
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FOREWORD

The "Lexicon of geologic names of the United States" by M. Grace Wilmarth, published in 1938 and reprinted in 1951 and 1957, met a long standing need and continuing demand for a compilation of geologic names. Plans made for future compilations as new names and revisions appeared were interrupted during the years of World War II. In 1952 a sustained effort was begun toward review of geologic publications necessary to furnish a background for preparation of a new edition. After the review was brought up to date in 1956, the present compilation was prepared in order to furnish to the geologic profession, as quickly as possible, some of the essential data concerning the new names that have appeared since 1935. This compilation is the first step in the preparation of a revision of the lexicon.

The geologic names currently adopted for use by the U. S. Geological Survey are indicated in boldface type, as in Wilmarth's lexicon. The names so indicated have been used by Survey geologists in reports on areas in which they have made investigations; they constitute a part of the official nomenclature of the Survey and thus apply only to its members.

W. H. BRADLEY
Chief Geologist

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GEOLOGIC NAMES OF NORTH AMERICA INTRODUCED IN 1936–1955

By Druid Wilson, William J. Sando, and Rudolph W. Kopf

Prepared with the assistance of Barbara Bedette, Jean L. Eggleton, Grace C. Keroher, Carolyn Mann, William G. Melton, Jr., Katherine Dennison Palmer, and Jack E. Smedley

INTRODUCTION

The "Lexicon of geologic names of the United States (including Alaska)" by M. Grace Wilmarth was published as U. S. Geological Survey Bulletin 896 in 1938 and reprinted in 1951 and 1957. It has had wide circulation and use. The present work, listing the new names published in the period 1936–1955 and a few earlier names not included in Wilmarth's lexicon, is the initial result of a project begun in 1952 to continue for publication the compilation of new names and revisions of old names. More than 5,000 new names have appeared since publication of Wilmarth's lexicon. In order to publish a compilation of these names as quickly as possible, they were prepared in the present brief form, which, it is planned, will be superseded by a publication with more detailed information.

A majority of geologic names are formally proposed and defined in their initial publication; some, however, appear as formal names without being defined; and a few that are undefined and sometimes obscure seem to have potential value as formal names. If the initial reference is not sufficient to establish a name, a supplemental reference, when available, is added. For a few names of obscure usage, the reference or references cited indicate the known information, or lack of it.

The names of rock units of formal or seemingly formal usage derived from names of geographic localities or features are listed. Time terms and subsurface units are included if they have been defined or distinguished as a part of formal stratigraphy. Some names currently in use for rock units in Jamaica, British West Indies, that are based on faunal or descriptive terms are also included.

Not all of the formally proposed names in Pleistocene glacial geology are entered; but the names of stages and substages, used in glacial

chronology, and the names of local deposits of till, silt, drift, and gravel, defined as rock units, are included. The names applied to moraines, eskers, terraces, and boulder trains for which physiography is an essential part of the definition are excluded, as well as the names of hypothetical glaciers, lakes, and rivers and stages of these features.

The names of igneous bodies, such as batholiths, stocks, and sills, are omitted, but the rock units composing the bodies are entered if they are named. The names of units used in economic geology, such as coal beds, oil and gas sands, pegmatites, and mining terms, are omitted, inasmuch as they are not considered a part of formal stratigraphy and are, for the most part, of only local interest. The publications listed below contain useful information on the economic names in some local and particular areas.

L. E. Workman, chm., 1954, Lexicon of geologic names in Alberta and adjacent portions of British Columbia and Northwest Territories: Calgary, Alberta, Alberta Soc. Petroleum Geologists; supplement, 1955. (No pagination).

Louise Jordan, (in preparation), Subsurface stratigraphic names of Oklahoma: Okla. Geol. Survey.

O. P. Jenkins, 1943, Glossary of the geologic units of California: Calif. Dept. Nat. Res., Div. Mines Bull. 118, pt. 4, p. 673–687.

C. W. Jennings and E. W. Hart, 1956, Exploratory wells drilled outside of oil and gas fields in California to December 31, 1953: Calif. Dept. Nat. Res., Div. Mines Special Rept. 45, p. 5–8 (glossary).

H. R. Wanless, 1939, Pennsylvanian correlations in the eastern interior and Appalachian coal fields: Geol. Soc. America Special Paper 17, p. 74–112 (glossary).

H. R. Wanless, 1946, Pennsylvanian geology of a part of the southern Appalachian coal field: Geol. Soc. America Mem. 13, p. 135–155 (glossary).

Anonymous, 1954, Names of Oklahoma coal beds: Hopper, v. 14, no. 8, p. 121–134.

Some units are listed as cyclothems in order to avoid entering several contiguous units with the same geographic name. The first appearance of a name of a cyclothem as the name of one of its components, such as a clay, limestone, sandstone, or shale, is credited as the introduction of the name. Thus, the first reference under a cyclothem may refer to one of its components. Original appearance as the name of a coal bed has been disregarded inasmuch as the names of coal beds are economic terms and are not commonly considered a part of formal geologic nomenclature.

Ages of the units are given in terms of the standard major divisions of geologic time, as used by the U. S. Geological Survey. These generally are the terms of the authors cited. The parenthetic position is reserved for the minor age or rank designations or, in a few instances, the distinctive age terms of the authors. For the sake of consistency,

the designation early or late, where used by the authors with the age of rock units, is changed to lower or upper.

The politico-geographic area covered includes the continent of North America and its adjacent islands, Greenland, Trinidad and other islands off the coast of South America that are politically a part of the West Indies, all of the possessions of the United States, and the Trust Territory of the Pacific Islands presently administered by the United States. The areas of the units are based primarily on the major political divisions, but names of the various states and territories are the only designations given for the United States, its possessions, and trust territories. The initial area for each unit contains, or is assumed to contain, the type locality.

Published variations of geologic names that are due to variations of the geographic part of the name are given cross references. The lithic and rank designations of units first described in foreign-language literature are translated, but the names are not anglicized; cross references are given, however, for later anglicizations. Various transliterations of many of the names of units described from the Trust Territory of the Pacific Islands have appeared in English, in the Romaji of Japanese publications, and in English translations of the Japanese. The published and unpublished recommendations of the Board on Geographic Names on the native place names from which the geologic names are derived have been followed, but there were no decisions on some of obscure origin. Cross references are given if the recommended forms and the published sources differ and if the transliterations are inconsistent.

Within the United States, its possessions, and trust territories, certain names have been adopted and others abandoned for use by the U. S. Geological Survey. The data for these names are given as the Survey currently defines them. Discrepancies between the data given and data in the references cited are due to subsequent published or unpublished work of Survey geologists. Decisions of the Survey to adopt or abandon names are based upon the work of its geologists during their tenure with the Survey. Therefore, recognition and adoption of names by the U. S. Geological Survey is dependent upon the work of Survey geologists in an area, the time at which the work was done, and the type of investigation made. Names adopted for use by the U. S. Geological Survey are printed in bold face type. Names abandoned for use by the Survey are preceded by a dagger (†).

Receipt of information on additional new geologic names, published in the period 1936–55, but not included in this compilation, would be appreciated by the staff of the lexicon project and would contribute to the completeness of future publications.

ACKNOWLEDGMENTS

The cooperation of George V. Cohee, chairman, and the staff of the Geologic Names Committee of the U. S. Geological Survey, in all stages of the preparation of this compilation, is gratefully acknowledged. For the unfailing fulfillment of numerous requests, appreciation is expressed to William H. Heers, librarian, and the staff of the library of the Survey, and to Ruth Reece King and the staff of the Bibliography of North American Geology. To Wendell P. Woodring appreciation is expressed for advice on some of the problems concerning the geologic names in the West Indies and Central America.

Thanks are extended to Alice S. Allen, Nell L. Bowen, and Helen V. Nicol for their early contributions to the background material of the compilation. Particular acknowledgment is made to Ruth A. M. Schmidt, to whom the organization of the project in its present form is largely due. Grateful acknowledgment is made to Blanche E. Hansen for her distinct contribution to the accuracy and consistency of the compilation and for the excellence of the typescript.

SYMBOLS

Names printed in boldface type have been adopted for use by the U. S. Geological Survey.

Names preceded by a dagger (†) have been abandoned for use by the Survey.

Names in roman type without a dagger are those that the Survey has had no occasion to consider for use.

Data within brackets have been derived from sources other than the references cited.

GEOLOGIC NAMES

Abbotsford gravel

Pleistocene: British Columbia, Canada.

J. E. Armstrong and W. C. Brown, 1953, Canada Geol. Survey Water Supply Paper 322, p. 11.

Abingdon cyclothem

Pennsylvanian: Illinois and Iowa.

J. M. Weller and H. R. Wanless *in* J. M. Weller and others, 1942, Am. Assoc. Petroleum Geologists Bull., v. 26, no. 10, p. 1586 (fig. 1), 1589.

Abiquiu tuff

Miocene: New Mexico.

H. T. U. Smith, 1937, (abs.) Geol. Soc. America Proc. 1936, p. 103; 1938, Jour. Geology, v. 46, no. 7, p. 944–952, 958.

Absalona formation

Precambrian(?): Rhode Island.

G. M. Richmond *in* G. M. Richmond and W. B. Allen, 1951, R. I. Port and Indus. Devel. Comm. Geol. Bull. 4, p. 10, 11–12.

Absaroka sequence

Mississippian (Chesterian) to Pennsylvanian (Des Moinesian): Central and western United States.

L. L. Sloss, W. C. Krumbein, and E. C. Dapples *in* C. R. Longwell, chm., 1949, Geol. Soc. America Mem. 39, p. 110–111, 121.

Absher limestone

Pennsylvanian: Illinois.

J. M. Weller, L. G. Henbest, and C. O. Dunbar *in* C. O. Dunbar and L. G. Henbest, 1942, Ill. State Geol. Survey Bull. 67, p. 17, 23 [1943].

Abuillot formation

Eocene, lower: Dominican Republic.

W. M. Small, 1948, Seismol. Soc. America Bull., v. 38, no. 1, p. 24.
P. J. Bermudez, 1949. Cushman Lab. Foram. Research Special Pub. 25, p. 19.

Abymes tuffs

Miocene: Guadeloupe (Grande Terre), French West Indies.

Louis Barrabé, 1934 [France] Office national des combustibles liquides Annales, 9e année, no. 4, p. 634, 636, 659.
Alfred Senn, 1940, Am. Assoc. Petroleum Geologists Bull., v. 24, no. 9, p. 1581.

Acalapa conglomerate

Pliocene: Istmo de Tehuantepec, Mexico.

J. B. Gibson, 1936, Soc. Geol. Mexicana Bol., tomo 9, no. 5, correlation chart.

Acatlán schists

Pre-Mesozoic: Oaxaca, Mexico.

G. P. Salas, 1949, Asociación Mexicana Geólogos Petroleros Bol., v. 1, no. 2, p. 92–97.

Ackley granite
Post-Silurian: Newfoundland, Canada.
B. L. Smith, 1953, Newfoundland Geol. Survey Rept. 2, p. 9–10.

Acme porphyry
Precambrian (Algoman): Ontario, Canada.
G. D. Furse, 1948, *in* Structural geology of Canadian ore deposits: Canadian Inst. Mining and Metallurgy, p. 487.

Active formation
Ordovician: British Columbia, Canada.
H. W. Little, 1950, Canada Geol. Survey Paper 50–19, p. 21–23.

Ada limestone
[Ordovician]: Oklahoma.
W. H. Shideler, 1937, (abs.) Geol. Soc. America Proc. 1936, p. 367–368.

Adel Mountain volcanics
Upper Cretaceous: Montana.
J. B. Lyons, 1944, Geol. Soc. America Bull., v. 55, no. 4, p. 449, 452.

Adelina marl
Oligocene: Cuba.
D. K. Palmer and P J. Bermudez, 1936, Soc. Cubana Historia Nat. Mem., v. 10, no. 4, p. 233.

Adirondack-Border series
Upper Cambrian: New York.
R. R. Wheeler, 1946. Harvard Univ. Summaries of Theses, 1942, p. 143, 145.

Adler series
See **Alder group.**

Adobe formation
Pennsylvanian (Missouri series): New Mexico.
M. L. Thompson, 1942, N. Mex. State Bur. Mines Min. Res. Bull. 17, p. 27, 61–62.

Aeolian Buttes till
Pleistocene: California.
W. C. Putnam, 1949, Geol. Soc. America Bull., v. 60, no. 8, p. 1289.

Afono trachyte
Pliocene or Pleistocene, lower: Samoa Islands (Tutuila).
R. A Daly, 1924, Carnegie Inst. Washington Pub. 340, p. 108, 129–130.

Afton bed
Middle Devonian: Michigan.
[G. M. Ehlers], 1938, Mich. Acad. Sci. Arts and Letters Sec. Geology and Mineralogy [Guidebook] 8th Ann. Field Excursion, [fig. 2] after p. 8.
W. A. Kelly, 1940, Mich Acad. Sci. Arts and Letters Sec. Geology and Mineralogy [Guidebook] 10th Ann. Field Excursion, [p. 1, figs. 3, 4, 6, 7], maps 1, 2.

Afton limestone member (of Wellington formation)
Permian: Kansas.
W. A. Ver Wiebe, 1937, Wichita Municipal Univ. Bull., v. 12, no. 5, p. 10–11.

Agamok sediments
Precambrian (Knife Lake): Minnesota.
J. W. Gruner, 1941, Geol. Soc. America Bull., v. 52, no. 10, p. 1583, 1615.

Agattu beds

Cretaceous or Tertiary: Alaska (Aleutian Islands).

R. P. Sharp, 1945, (abs.) Geol. Soc. American Bull., v. 56, no. 12, pt. 2, p. 1197; 1946, Jour. Geology, v. 54, no. 3, p. 193–197.

Agency shale member (of Pierre formation)

[Upper Cretaceous]: South Dakota.

W. L. Russell, 1930, S. Dak. Geol. Nat. History Survey Rept. Inv. 7, p. 5.

Agnostus Cove formation

Upper Cambrian (Johannian): New Brunswick, Canada.

A. O. Hayes and B. F. Howell, 1937, Geol. Soc. America Special Paper 5, p. 76–77.

Agpat formation

Precambrian: West Greenland.

H. K. E. Krueger, 1928, Meddel. om Grønland, bind 74, nr. 8, p. 119–125, pl. 8.

Agua Caliente gabbro

Precambrian (Keweenawan?): New Mexico.

Evan Just, 1937, N. Mex. School Mines Bull. 13, p. 11, 25.

Aguada formation

Miocene, lower: Puerto Rico.

A. D. Zapp, H. R. Bergquist, and C. R. Thomas, 1948, U. S. Geol. Survey Oil and Gas Inv. Prelim. Map 85, sheets, 1, 2.

Aguadilla limestone

Miocene, lower: Puerto Rico.

C. J. Maury, 1919, Am. Jour. Sci., v. 48, no. 285, p. 214 (correlation chart); 1919, Science, v. 70, no. 1825, p. 609.

Agua Nueva formation

Upper Cretaceous: Vera Cruz, Mexico.

J. M. Muir, 1934, *in* Problems of Petroleum Geology: Am. Assoc. Petroleum Geologists, p. 377, 382–383.

Agua Verde shale member (of Fayette formation)

Eocene (Jackson): Texas.

J. M. Patterson, 1942, Am. Assoc. Petroleum Geologists Bull., v. 26, no. 2, p. 259 (fig. 2), 269–270.

Agua Zarca sandstone member (of Chinle formation)

Upper Triassic: New Mexico.

G. H. Wood and S. A. Northrop, 1946, U. S. Geol. Survey Oil and Gas Inv. Prelim. Map 57.

Aguijan limestone

Pliocene: Mariana Islands (Aguijan).

Risaburo Tayama and Yasushi Ota, 1940, Geomorphology, geology, and coral reefs of Aguijan Island: Tropical Industry Inst., Palau, South Sea Islands, Bull. 6 [English translation in library of U. S. Geol. Survey, p. 16–17, 19].

Risaburo Tayama, 1952, Coral reefs in the South Seas: Japan Hydrog. Office Bull., v. 11, p. 55, table 4 [English translation in library of U. S. Geol. Survey, p. 66].

Aguja sandstone

Precambrian (Protozoic): Arizona.

[C. R.] Keyes, 1939, Pan-Am. Geologist, v. 71, no. 1, p. 69.

Ahearn member (of Chadron formation)

Oligocene, lower: South Dakota.

John Clark, 1954, Carnegie Mus. Annals, v. 33, art. 11, p. 197–198.

Ahern quartzite

See **Ahorn quartzite.**

Ahorn quartzite

Precambrian (Belt series) : Montana.

C. R. Waldron and R. H. Earhart, 1942, Mont. Bur. Mines and Geology Mem. 21, p. 243.

Charles Deiss, 1943, Geol. Soc. America Bull., v. 54, no. 2, p. 213, 217–218.

Aikens Lake granite

Precambrian: Manitoba, Canada.

G. A. Russell, 1948, Manitoba Dept. Mines and Nat. Res. Prelim. Rept. 47–1, p. 6.

Aillik formation

Precambrian: Newfoundland (Labrador), Canada.

E. H. Kranck, 1939, Newfoundland Geol. Survey Bull. 19, p. 15.

Aillik Bay quartzite

See Aillik formation.

Aimeliik formation
Aimiliiki agglomerate

See Aimiriiki (Aimiliiki) agglomerate.

Aimiriiki (Aimiliiki) agglomerate

Eocene: Caroline Islands (Babelthaup).

Risaburo Tayama and Misaburo Shimakura, 1937, On the coal of Babelthaup Island, Palau group: Geol. Soc. Japan Jour., v. 44, no 6, p. 526 [English translation in library of U. S. Geol. Survey, p. 1].

Risaburo Tayama, 1952, Coral reefs in the South Seas: Japan Hydrog. Office Bull., v. 11, p. 65, table 4 [English translation in library of U. S. Geol. Survey, p. 77].

Airai lignite bearing beds

Pliocene: Caroline Islands (Babelthaup).

Risaburo Tayama, 1939, Brief report on the geology and ore resources of Babelthaup Island (Palau Island proper): Tropical Industry Inst., Palau, South Sea Islands, Bull. 3 [English translation in library of U. S. Geol. Survey, p. 6–7, 17]; 1952 Coral reefs in the South Seas: Japan Hydrog. Office Bull., v. 11, p. 66, table 4 [English translation in library of U. S. Geol. Survey, p. 78–79].

Ajo volcanics

Tertiary, middle(?) : Arizona.

James Gilluly, 1937, Ariz. Univ. Bull., v. 8, no. 1, p. 43–45.

Ajusco formation

Miocene: Mexico and Distrito Federal, Mexico.

R. M. Berbeyer, 1953, Congreso Cient. Mexicano Mem., tomo 4, table 6.

Akaitcho flow (in Yellowknife group)

Precambrian: Northwest Territories (Mackenzie), Canada.

C. E. G. Brown and A. S. Dadson, 1953, Canadian Inst. Mining and Metallurgy Trans. v. 56, p. 70.

Aladdin sandstone

Middle Ordovician (Chazyan) : Wyoming and South Dakota.

M. R. McCoy, 1952, Billings Geol. Soc. Guidebook 3d Ann. Field Conf., p. 46–47.

Alajuela formation

See **Alhajuela sandstone member.**

Alamo formation
Pliocene: California.
A. S. Huey, 1937, (abs.) Geol. Soc. America Proc. 1936, p. 335.
Carlton Condit, 1938, Carnegie Inst. Washington Pub. 476, p. 224, 228.

Alamogordo member (of Lake Valley formation)
Mississippian (Osage): New Mexico.
L. R. Laudon and A. L. Bowsher, 1941, Am. Assoc. Petroleum Geologists Bull., v. 25, no. 12, p. 2114–2116, 2125–2133, figs. 5, 6.

Alava formation
Oligocene, lower: Cuba.
Jorge Brodermann, 1945, Soc. Cubana Ingenieros Rev., v. 42, no. 1, p. 144, 145, chart.

Albanel group
Precambrian: Quebec, Canada.
W. G. Wahl, 1947, Quebec Dept. Mines Prelim. Rept. 211, p. 7–8.

Albemarle group
Middle Silurian (Niagaran): Ontario, Canada.
T. E. Bolton, 1953, Canada Geol. Survey Paper 53–23, p. 13–18.

Albert formation
Mississippian: New Brunswick, Canada.
H. Y. Hind, 1865, A preliminary report on the geology of New Brunswick: Fredericton, New Brunswick, G. E. Fenety, p. 85, 90.
G. W. H. Norman, 1932, Canada Geol. Survey Econ. Geology Series, no. 9, p. 168–170.

Albertan system
Middle Cambrian: Western North America.
A. W. Grabau, 1921, A text book of geology, pt. 2, Historical geology: New York, D. C. Heath & Co., p. 243 (footnote); 1936, Paleozoic formations in the light of the pulsation theory, v. 1, Lower and Middle Cambrian pulsations: 2d ed., Peiping, China, Univ. Press, Natl. Univ. Peiping, p. 10, 160.

Alberts Lake granodiorite
Precambrian: Manitoba, Canada.
Jorma Kalliokoski, 1952, Canada Geol. Survey Mem. 270, p. 8.

Albion formation
Mississippian (Meramecian): Oklahoma.
1954, Ardmore Geol. Soc. [Guidebook] Field Trip October, 1954, chart facing p. 1.

Albion glacial stage
Pleistocene (Wisconsin): Colorado.
R. L. Ives, 1950, Sci. Monthly, v. 71, no. 2, p. 114; 1953, Geog. Review, v. 43, no. 2,

Albion member (of Stellarton series)
Pennsylvanian: Nova Scotia, Canada.
W. A. Bell, 1940, Canada Geol. Survey Mem. 225, p. 32–34 [1941].

Albion monzonite
Cretaceous(?): Colorado.
R. L. Ives, 1950. Sci. Monthly, v. 71, no. 2, p. 114; 1953, Geog. Review, v. 43, no. 2, p. 232 (fig. 3).

Albrechts Bay marl and limestone
See Albrechtsbugt facies.

Albrechtsbugt facies
Upper Cretaceous (Valanginian): Northeast Greenland.
Andreas Vischer, 1943, Meddel. om Grønland, bind 133, nr. 1, p. 87–91, pl. 2.

Alder group

Precambrian: Arizona.

E. D. Wilson, 1937, (abs.) Geol. Soc. America Proc. 1936, p. 112; 1939, Geol. Soc. America Bull., v. 50, no. 7, p. 1118, 1121–1122.

Aldermac syenite porphyry

Precambrian: Quebec, Canada.

H. C. Cooke, W. F. James, and J. B. Mawdsley, 1931, Canada Geol. Survey Mem. 166, p. 112.

Alectryonaria limestones

See Ostrea limestone.

Alectryonia limestone

See Ostrea limestone.

Alegria formation

Oligocene (Refugian): California.

T. W. Dibblee, Jr., 1950, Calif. Dept. Nat. Res., Div. Mines Bull. 150, p. 30–31.

Aleman formation

Upper Ordovician (Cincinnatian): New Mexico.

V. C. Kelley and Caswell Silver, 1952, N. Mex. Univ. Pubs. in Geology 4, p. 60–62, fig. 4.

Aleuts member (of Kialagvik formation)

Lower Jurassic: Alaska.

L. B. Kellum, 1945, N. Y. Acad. Sci. Trans., ser. 2, v. 7, no. 8, p. 203, 205–206.

Alexandra formation

Upper Devonian: Northwest Territories (Mackenzie), Canada.

C. H. Crickmay, 1953, New Spiriferidae from the Devonian of western Canada: Calgary, Canada, Imperial Oil Limited, p. 1, 11.

Alexo formation

Upper Devonian: Alberta, Canada.

R. deWit and D. J. McLaren, 1950, Canada Geol. Survey Paper 50–23, p. 6, 21.

Alferitz formation

Miocene, middle (Luisian): California.

Martin Van Couvering and H. B. Allen, 1943, Calif. Dept. Nat. Res., Div. Mines Bull. 118, pt. 3, p. 496–500.

Alhajuela sandstone member (of Caimito formation)

Miocene, lower: Panama Canal Zone.

Charles Schuchert, 1935, Historical geology of the Antillean-Caribbean region: New York, John Wiley and Sons, p. 586.

W. P. Woodring and T. F. Thompson, 1949, Am. Assoc. Petroleum Geologists Bull., v. 33, no. 2, p. 235–236.

Alhambra formation

Eocene, upper: California.

C. E. Weaver, 1953, Wash. [State] Univ. Pubs. in Geology, v. 7, p. 19 (chart), 50–53.

Aliamanu basalt

Quaternary: Hawaiian Islands (Oahu) (subsurface).

H. T. Stearns, 1940, Hawaii Div. Hydrography Bull. 5, p. 55.

Alisitos formation

Lower Cretaceous: Baja California, Mexico.

Manuel Santillán and Tomás Barrera, 1930, Inst. Géología México Anales, tomo 5, p. 9–10.

Alison quartzite
Precambrian: Quebec, Canada.
P. E. Auger, 1954, Canadian Mining and Metall. Bull., v. 47, no. 8, p. 530.

Allah quartzite
Paleozoic: Utah.
B. F. Stringham, 1942, Geol. Soc. America Bull., v. 53, no. 2, p. 271, pl. 1.

Allamoore limestone or formation
Precambrian: Texas.
P. B. King, 1940, Am. Assoc. Petroleum Geologists Bull., v. 24, no. 1, p. 148–149.

Allen Bay formation
Silurian and Ordovician(?): Northwest Territories (Cornwallis Island), Canada.
R. Thorsteinsson and Y. O. Fortier, 1954, Canada Geol. Survey Paper 53–24, p. 8–9.

Allenby formation
Oligocene: British Columbia, Canada.
W. S. Shaw, 1952, Canada Geol. Survey Paper 52–12, p. 7–9.

Allens Falls fanglomerate
Precambrian (Algonkian): New York.
P. D. Krynine, 1948, (abs.) Geol. Soc. America Bull., v. 59, no. 12, pt. 2, p. 1333–1334.

Allen Valley shale
Upper Cretaceous: Utah.
E. M. Spieker, 1946, U. S. Geol. Survey Prof. Paper 205–D, p. 122, 127–128.

Alley Creek beds
Oligocene: Trinidad, British West Indies.
R. J. L. Guppy, 1892, Geol. Soc. London Quart. Jour., v. 48, p. 532, 535.
R. J. L. Guppy and W. H. Dall, 1896, U. S. Natl. Mus. Proc., v. 19, no. 1110, p. 304.
H. G. Kugler, 1936, Am. Assoc. Petroleum Geologists Bull., v. 20, no. 11, p. 1444–1445, 1451 (chart).

Alma glacial substage
Pleistocene (Wisconsin): Colorado.
Q. D. Singewald, 1950, U. S. Geol. Survey Bull. 955–D, p. 120 [1951].

Almenan sub-age
Pleistocene: Kansas, Nebraska, and Iowa.
J. C. Frye and A. B. Leonard, 1955, Am. Jour. Sci., v. 253, no. 6, p. 363.

Almongui agglomerate
See Arumonogui (Almongui) agglomerate.

Almont sandstone (in Tongue River member of Fort Union formation)
Paleocene: North Dakota.
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Alofau volcanics
Pliocene(?): Samoa Islands (Tutuila).
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Alouette gravel
Recent: British Columbia, Canada.
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Alpefjord series (of Eleonore Bay formation)
Precambrian: Northeast Greenland.
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Alpine formation
Pleistocene and Recent: Utah.
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C. B. Hunt, H. D. Varnes, and H. E. Thomas, 1953, U. S. Geol. Survey Prof. Paper 257–A, p. 17–20.

Alta formation
Oligocene(?): Nevada.
V. P. Gianella, 1936, Nev. Univ. Bull., v. 30, no. 9, p. 52–59.

Alta Loma sand
Pleistocene: Texas (subsurface).
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Altar schists
Precambrian: Sonora, Mexico.
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Alumonogui agglomerate
See Arumonogui (Almongui) agglomerate.

Alum Rock rhyolite
Post-Cretaceous: California.
M. D. Crittenden, Jr., 1951, Calif. Dept. Nat. Res., Div. Mines Bull. 157, p. 47–48, pl. 3.

Alverson andesite lava
Miocene: California.
T. W. Dibblee, Jr., 1954, Calif. Dept. Nat. Res., Div. Mines Bull. 170, chap. 2, p. 22.

Alverson Canyon formation
Miocene, middle and upper: California.
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Amabel formation
Middle Silurian (Niagaran): Ontario, Canada.
T. E. Bolton, 1953, Canada Geol. Survey Paper 53–23, p. 15–17.

Amador group
Middle and Upper Jurassic: California.
W. D. Johnston, Jr., 1940, U. S. Geol. Survey Prof. Paper 194, p. 5.
N. L. Taliaferro, 1948, Calif. Dept. Nat. Res., Div. Mines Bull. 125, p. 282–284.

Amalia formation
Tertiary, middle or upper: New Mexico and Colorado.
P. F. McKinlay, [1955?], N. Mex. State Bur. Mines Min. Res. Bull. 42, p. 16–18, pl. 1.

Amana beds
Devonian: Iowa.
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M. A. Stainbrook, 1945, Geol. Soc. America Mem. 14, p. 7–8.

Amaranth formation

Jurassic or older: Manitoba and Saskatchewan, Canada.

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R. T. D. Wickenden, 1945, Canada Geol. Survey Mem. 239, p. 8.

Amargo formation

Jurassic: California.

H. S. Gale, 1946, Calif. Jour. Mines and Geology, v. 42, no. 4, p. 358

Amargosa chaos

Post-Miocene(?): California.

L. F. Noble, 1940, (abs.) Geol. Soc. America Bull., v. 51, no. 12, pt. 2, p. 1936; 1941, v. 52, no. 7, p. 963–965, 977–981.

Amasa formation

Precambrian (middle Huronian): Michigan.

Stephen Royce, 1936, Lake Superior Min. Inst. Proc. 29th Ann. Meeting, p. 78, 81, 86, 97.

Amate (Lower and Upper) formation

Miocene: Tabasco and Chiapas, Mexico.

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Amawalk granite

Upper Ordovician(?): New York.

T. W. Fluhr, 1948, Rocks and Mineral Mag., v. 23, no. 8, p. 699.

Amco horizon (of Slave Point formation)

Middle Devonian: Northwest Territories (Mackenzie), Canada.

Neil Campbell, 1950, Geol. Assoc. Canada Proc., v. 3, p. 90.

American Flat basalt

Quaternary: Nevada.

V. P. Gianella, 1936, Nev. Univ. Bull., v. 30, no. 9, p. 76–77, pl. 1.

American Lakes glacial substage

Pleistocene (Wisconsin): Colorado.

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American Ravine andesite porphyry

Miocene(?): Nevada.

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Amicalola gneiss

Precambrian: Georgia.

A. S. Furcron and K. H. Teague, 1945, Ga. Geol. Survey Bull. 51, p. 31–34.

Amoeba Lake graywackes, slates, and tuffs

Precambrian (Knife Lake): Minnesota.

J. W. Gruner, 1941, Geol. Soc. America Bull., v. 52, no. 10, p. 1583, 1603–1605.

Amole arkose

Upper Cretaceous: Arizona.

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Amole granite
[Upper Cretaceous and/or Tertiary] (Laramide) : Arizona.
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[Upper Cretaceous and/or Tertiary] (Laramide) : Arizona.
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Amole quartz monzonite
[Upper Cretaceous and/or Tertiary] (Laramide) : Arizona.
W. H. Brown, 1939, Geol. Soc. America Bull., v. 50, no. 5, p. 723–725.

Amoret limestone member (of Altamont formation)
Pennsylvanian (Desmoinesian) : Missouri, Iowa, and Kansas.
L. M. Cline and F. C. Greene *in* J. G. Grohskopf and Earl McCracken, 1949, Mo. Geol. Survey and Water Res. Rept. Inv. 10, p. 17.
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Amos Wash member (of Supai formation)
[Pennsylvanian and/or Permian] : Arizona.
R. L. Jackson, 1951, Plateau, v. 24, no. 2, p. 86–88.

Amoura shale
Oligocene or lower Miocene: Costa Rica.
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Anahuac formation
Oligocene: Texas (subsurface).
J. B. Eby, 1943, Oil Weekly, v. 111, no. 4, p. 22–23.
A. C. Ellisor, 1944, Am. Assoc. Petroleum Geologists Bull., v. 28, no. 9, p. 1355–1368.

Anaktuvuk glaciation
Pleistocene (pre-Wisconsin) : Alaska.
R. L. Detterman *in* T. L. Péwé and others, 1953, U. S. Geol. Survey Circ. 289, p. 11, 13 (table 1).

Anaverde formation
Pliocene, lower to middle: California.
O. P. Jenkins, 1938, Geologic map of California (1 : 500,000) : Calif. Dept. Nat. Res., Div. Mines, sheet 4.
R. E. Wallace, 1949, Geol. Soc. America Bull., v. 60, no. 4, p. 790–792.

Ancaster member (of Eramosa formation)
Middle Silurian (Niagaran) : Ontario, Canada.
E. W. Shaw, 1937, Royal Canadian Inst. Trans., v. 21, pt. 2, p. 339.

Ancell group
Middle Ordovician : Illinois.
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Ancha formation
Pliocene, upper, or Pleistocene: New Mexico.
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Ancon Hill rhyolite

Pre-Pliocene: Panama Canal Zone.

[T. F. Thompson], 1943, Panama Canal, Special Eng. Div., 3d Locks Proj., pt. 2, chap. 3, p. 25.

Andersons Cove slates

Ordovician: Newfoundland, Canada.

W. H. Twenhofel, 1947, Am. Jour. Sci., v. 245, no. 2, p. 92.
B. L. Smith, 1953, Newfoundland Geol. Survey Rept. 2, p. 5–6.

Andrada formation

Pennsylvanian and Permian: Arizona.

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D. L. Bryant, 1955, Dissert. Abs., v. 15, no. 7, p. 1224.

Andrecito member (of Lake Valley formation)

Mississippian (Osage): New Mexico.

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Andrew Bay volcanics

Tertiary: Alaska (Aleutian Islands).

R. R. Coats, 1947, U. S. Geol. Survey Alaskan Volcano Inv. Rept. 2, pt. 5, p. 78.

Androscoggin gneiss and schist

Cambro-Ordovician(?): Maine.

L. W. Fisher, 1936, Am. Mineralogist, v. 21, no. 5, p. 323.

Aneth formation

Upper Devonian: Sursurface in Utah, Arizona, Colorado, and New Mexico.

R. L. Knight and J. C. Cooper, 1955, Four Corners Geol. Soc. Guidebook [1st] Field Conf., p. 56, 57, 58.

Angaur (Older and Younger) limestone

Pleistocene and Recent: Caroline Islands (Angaur).

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Angmagsalik granites

Lower Paleozoic (Caledonian?): Southeast Greenland.

L. R. Wager, 1934, Meddel. om Grønland, bind 105, nr. 2, p. 20–21.

Angostura formation

Miocene, lower: Dominican Republic.

W. M. Small, 1948, Seismol. Soc. America Bull., v. 38, no. 1, p. 26.
P. J. Bermudez, 1949, Cushman Lab. Foram. Research Special Pub. 25, p. 34.

Anguille series

Mississippian: Newfoundland, Canada.

A. O. Hayes and Helgi Johnson, 1937, Newfoundland Dept. Nat. Res. Inf. Circ. 3, p. 2, map; 1938, Newfoundland Geol. Survey Bul. 12, p. 9–11.

Anita shale

Eocene, middle: California.

F. R. Kelley, 1943, Am. Assoc. Petroleum Geologists Bull., v. 27, no. 1, p. 6–7.

Anna cyclothem (including Anna shale)
Pennsylvanian (Des Moines): Kansas, Missouri, and Nebraska.
J. M. Jewett, 1941, Kans. State Geol. Survey Bull. 38, pt. 11, p. 316–317; 1945, Bull. 58, p. 30–31, 64.

Annelly gypsum member (of Wellington formation)
Permian: Kansas.
W. A. Ver Wiebe, 1937, Wichita Municipal Univ. Bull., v. 12, no. 5, p. 12.

Anse Cascon formation
Middle Silurian: Quebec, Canada.
S. A. Northrop, 1939, Geol. Soc. America Special Paper 21, p. 29–32.

Anstruther granite gneiss
Precambrian: Ontario, Canada.
Jack Satterly and D. F. Hewitt, 1955, Ontario Dept. Mines Geol. Circ. 2, p. 4.

Antelope shale
Upper Cretaceous: California.
N. L. Taliaferro, 1954, *in* Northern Calif. Geol. Soc. [Guidebook] Spring Field Trip. [p. 6], correlation chart.

Antelope shale member (of Monterey formation)
Miocene, upper: California.
E. B. Noble, 1940, Am. Assoc. Petroleum Geologists Bull., v. 24, no. 7, p. 1332 (fig. 1).
R. R. Simonson and M. L. Krueger, 1942, Am. Assoc. Petroleum Geologists Bull., v. 26, no. 10, p. 1611 (fig. 2), 1617.

Antelope Flats member (of Wellington formation)
Permian: Oklahoma.
G. O. Raasch, 1941, (abs.) Geol. Soc. America Bull., v. 52, no. 12, pt. 2, p. 1928.

Antero formation
Oligocene: Colorado.
J. H. Johnson, 1937, (abs.) Colorado Univ. Studies, v. 25, no. 1, p. 77.
J. T. Stark and others, 1949, Geol. Soc. America Mem. 33, p. 63–68.

Antes shale
Middle Ordovician (Mohawkian): Pennsylvania.
G. M. Kay, 1944, Jour. Geology, v. 52, no. 1, p. 3; no. 2, p. 114.

Antes Gap shale
See Antes shale.

Anthony cyclothem (including Anthony shale and sandstone)
Pennsylvanian (Pottsville): Ohio.
R. E. Lamborn, C. R. Austin, and Downs Schaaf, 1938, Ohio Geol. Survey, ser. 4, Bull. 39, p. 70–80.
N. K. Flint, 1951, Ohio Geol. Survey, ser. 4, Bull. 48, p. 21–23.

Anthony sandstone
Permian: Oklahoma.
Henry Schweer *in* O. E. Brown, 1937, Am. Assoc. Petroleum Geologists Bull., v. 21, no. 12, p. 1553 (fig. 9).

Antler Peak limestone
Upper Pennsylvanian and Permian: Nevada.
R. J. Roberts, 1951, Geology of the Antler Peak quadrangle, Nevada: U. S. Geol. Survey Geol. Quadrangle Map [GQ 10].

Antropoceno periodo
Quaternary: Mexico.
A. R. V. Arellano, 1953, Congreso Cient. Mexicano Mem., tomo 3, p. 181, 186.

Antwerp type granite
Precambrian: New York.
A. F. Buddington, 1939, Geol. Soc. America Mem. 7, p. 135, 145, 160–161.

Anvil Points member (of Green River formation)
Eocene, upper: Colorado.
J. W. Vanderwilt, 1947, Rocky Mtn. Assoc. Geologists Guidebook Field Conf., May 14–16, p. 16–17.

Apache formation
Miocene, upper: California.
T. W. Dibblee, Jr., *in* Chester Stock, 1948, Southern Calif. Acad. Sci. Bull., v. 46, pt. 2, p. 84.

Aplington formation
Lower Mississippian: Iowa.
M. A. Stainbrook, 1950, Jour. Paleontology, v. 24, no. 3, p. 365–372.

Apodaca formation
Pennsylvanian (Derry): New Mexico.
M. L. Thompson, 1942, N. Mex. State Bur. Mines Min. Res. Bull. 17, p. 27, 36.

Applegate group
Triassic(?): Oregon.
F. W. Libbey and others, 1942, Oreg. Dept. Geology and Mineral Industries Bull. 17, p. 21.
F. G. Wells, P. E. Hotz, and F. W. Cater, Jr., 1949, Oreg. Dept. Geology and Mineral Industries Bull. 40, p. 3–4.

Aptychi limestone or formation
Lower Cretaceous: Cuba.
M. G. Rutten, 1936, Geog. Geol. Meded. (Utrecht Univ.) Physiog.-Geol. Reeks, no. 11, p. 10–12.

Aquacatal porphyritic andesite
Cretaceous(?): Honduras.
R. H. Carpenter, 1954, Geol. Soc. America Bull., v. 65, no. 1, p. 29–30, pl. 1 (geol. map).

Aquaqua formation
Oligocene, upper, and Miocene, lower: Panama.
Karl Sapper, 1937, Mittelamerika, Handbuch der regionalen Geologie: Heidelberg, Band 8, Abt. 4a, Heft 29, p. 132–133, 134 (correlation chart).

Aquathuna limestone
Mississippi (Chesterian): Newfoundland, Canada.
J. M. Weller and others, 1948, Geol. Soc. America Bull., v. 59, no. 2, Chart 5, col. 116.

Aqua Torres formation
Permian: New Mexico.
J. T. Stark and E. C. Dapples, 1946, Geol. Soc. America Bull., v. 57, no. 12, pt. 1, p. 1154–1155, pl. 1.

Arapaho glacial stage
Pleistocene (middle Wisconsin): Colorado.
R. L. Ives, 1937, (abs.) Colo. Univ. Studies, v. 25, no. 1, p. 75; 1938, Geol. Soc. America Bull., v. 49, no. 7, p. 1059.

Arapien shale

Upper Jurassic: Utah.

S. L. Schoff, 1938, Ohio State Univ. Abs. Doctors' Dissert. 25, p. 377–378.
E. M. Spieker, 1946, U. S. Geol. Survey Prof. Paper 205–D, p. 123–125.

Arc formation

Oligocene, lower: Haiti.

Jacques Butterlin, 1954, Inst. Français d'Haïti Mem. 1, p. 63.

Arcadia member (of Trempealeau formation)

Upper Cambrian (Croixan): Wisconsin and Minnesota.

G. O. Raasch, 1952, Ill. Acad. Sci. Trans., v. 44, p. 147.

Arcente member (of Lake Valley formation)

Mississippian (Osage): New Mexico.

L. R. Laudon and A. L. Bowsher, 1941, Am. Assoc. Petroleum Geologists Bull., v. 25, no. 12, p. 2116, 2133–2136, fig. 7.

Arch marble

Paleozic(?): Virginia.

W. R. Brown, 1951, (abs.) Geol. Soc. America Bull., v. 62, no. 12, pt. 2, p. 1547; 1953, Ky. Geol. Survey, ser. 9, Special Pub. 1, [p. 9] (fig. 1).

Archer Creek formation

Paleozoic(?): Virginia.

G. H. Espenshade, 1954, U. S. Geol. Survey Bull. 1008, p. 16–17.

Arch Point basalt

Quaternary: Alaska.

G. C. Kennedy and H. H. Waldron, 1947, U. S. Geol. Survey Alaskan Volcano Inv. Rept. 2, pt. 2, p. 13.

Archusa shale member (of Cook Mountain formation)

Eocene (Claiborne group): Mississsippi.

E. P. Thomas, 1942, Miss. State Geol. Survey Bull. 48, p. 49–52.

Arcola limestone member (of Mooreville chalk)

Upper Cretaceous (Selma group): Alabama and Mississippi.

L. W. Stephenson and W. H. Monroe, 1938, Am. Assoc. Petroleum Geologists Bull., v. 22, no. 12, p. 1655–1657.

Ardian series (epoch)

Lower Pennsylvanian: North America.

R. C. Moore and M. L. Thompson, 1949, Am. Assoc. Petroleum Geologists Bull., v. 33, no. 3, p. 286–292.

Ardmore bentonite bed (in Pierre formation)

Cretaceous: South Dakota.

R. C. Spivey, 1940, S. Dak. State Geol. Survey Rept. Inv. 36, p. 3, 23–34.

Arikareean age

Miocene: North America.

H. E. Wood, 2d, and others, 1941, Geol. Soc. America Bull., v. 52, no. 1, p. 11, 12, pl. 1.

Arizonan revolution

Precambrian: Western North America.

N. E. A. Hinds, 1936, Carnegie Inst. Washington Pub. 463, pt. 2, p. 100.

Arkill limestone (in Saavedra member of Lowell formation)
Lower Cretaceous: Arizona.
A. A. Stoyanow, 1949, Geol. Soc. America Mem. 38, p. 11.

Arkwright group
Upper Devonian: New York.
I. H. Tesmer, 1954, Hobbies, v. 35, no. 2, p. 30, 31.

Arlington gravel member (of Vashon drift)
Pleistocene: Washington.
R. C. Newcomb, 1952, U. S. Geol. Survey Water-Supply Paper 1135, p. 26, 27, pl. 1.

Armagh group
Cambrian(?): Quebec, Canada.
Jacques Béland, 1952, Quebec Dept. Mines Prelim. Rept. 279, p. 3, 4.

Armagosa member (of Red Rose formation)
Upper Jurassic and Lower Cretaceous: British Columbia, Canada.
R. E. Sommers, 1955, British Columbia Bur. Mines Ann. Rept. 1954, p. A89–A90.

Armendaris group
Pennsylvanian (Des Moines): New Mexico.
M. L. Thompson, 1942, N. Mex. State Bur. Mines Min. Res. Bull. 17, p. 27, 41–47.

Armenta horizon (of Becerra formation)
Pleistocene: Distrito Federal, Mexico.
A. R. V. Arellano, 1946, 2º Congreso Mexicano de Cienc. Sociales Mem., tomo 5, p. 217.

Armuelles formation
Pleistocene: Panama and Costa Rica.
R. A. Terry, 1941, Geog. Review, v. 31, no. 3, p. 382, fig. 5.
A. A. Olsson, 1942, Bull. Am. Paleontology, v. 27, no. 106, p. 160–161(8–9).

Arntully serpentine
Pre-late Cretaceous: Jamaica, British West Indies.
G. M. Stockley, 1925, Jamaica Gazette, Supplement, v. 48, no. 5, p. 32.

Aromas red sands
Pleistocene, middle: California.
J. E. Allen, 1946, Calif. Dept. Nat. Res., Div. Mines Bull. 133, p. 18 (fig. 2), 43–45.

Arp sand member (of Reklaw formation)
Eocene (Claiborne): Texas and Louisiana.
B. W. Blanpied and R. T. Hazzard, 1939, Shreveport Geol. Soc. Guidebook 14th Ann. Field Trip, p. 128 (correlation chart).
H. B. Stenzel, 1953, Tex. Univ. Pub. 5305, p. 83–95.

Arrey formation
Pennsylvanian (Derry): New Mexico.
M. L. Thompson, 1942, N. Mex. State Bur. Mines Min. Res. Bull. 17, p. 27, 35–36.

Arrojos formation
Middle Cambrian: Sonora, Mexico.
A. A. Stoyanow, 1942, Geol. Soc. America Bull., v. 53, no. 9, p. 1263–1264.

Arroyo Blanco formation
Miocene, lower: Dominican Republic.
W. M. Small, 1948, Seismol, Soc. America Bull., v. 38, no. 1, p. 26.
P. J. Bermudez, 1949, Cushman Lab. Foram. Research Special Pub. 25, p. 27.

Arroyo Hondo formation

Eocene: California.

H. E. Vokes, 1939, N. Y. Acad. Sci. Annals, v. 38, p. 27–32.

Arroyo Hondo shale member (of Lodo formation)

Eocene: California.

R. T. White, 1938, (abs.) Geol. Soc. America Proc. 1937, p. 257; 1940, Am. Assoc. Petroleum Geologists Bull., v. 24, no. 10, p. 1738.

Arroyo Penasco formation

Upper Mississippian: New Mexico.

A. K. Armstrong, 1955, N. Mex. State Bur. Mines Min. Res. Circ. 39, p. 3, 6–9.

Arroyo Seco formation

Miocene, middle: Dominican Republic.

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P. J. Bermudez, 1949, Cushman Lab. Foram. Research Special Pub. 25, p. 29.

Arsuk group

Precambrian (Algonkian?): Southwest Greenland.

N. V. Ussing, 1911, Meddel. om Grønland, hefte 38, p. 9, pl. 1.

Arthur limestone (in Carbondale formation)

Pennsylvanian: Indiana.

J. A. Culbertson, 1932, The paleontology and stratigraphy of the Pennsylvanian strata between Caseyville, Ky. and Vincennes, Ind.; Abs. Thesis, Ill. Univ.; Urbana, Ill., p. 3, 5.

Artillery formation

Eocene, lower(?): Arizona.

S. G. Lasky and B. N. Webber, 1949, U. S. Geol. Survey Bull. 961, p. 16–22.

Artist Drive formation

Oligocene and Miocene(?): California.

L. F. Noble, 1941, Geol. Soc. America Bull., v. 52, no. 7, p. 955–956.

Arvison formation

Lower Jurassic: California.

A. F. Sanborn, [1953], Stanford Univ. Abs. Dissert., v. 27, p. 436.

Aruba formation

Upper Cretaceous: Aruba, Netherlands West Indies.

Alfred Senn, 1940, Am. Assoc. Petroleum Geologists Bull., v. 24, no. 9, p. 1569.

Arumonogui (Almongui) agglomerate

Oligocene: Caroline Islands (Babelthaup).

Risaburo Tayama, 1939, Brief report on the geology and ore resources of Babelthaup Island (Palau Island proper): Tropical Industry Inst., Palau, South Sea Islands, Bull. 3 [English translation in library of U. S. Geol. Survey, p. 7–8, 17]; 1952, Coral reefs in the South Seas: Japan Hydrog. Office Bull., v. 11, p. 65, table 4 [English translation in library of U. S. Geol. Survey, p. 78].

Arusa formation

Oligocene, upper: Panama.

Karl Sapper, 1937, Mittelamerika, Handbuch der regionalen Geologie: Heidelberg, Band 8, Abt. 4a, Heft 29, p. 132–133, 134 (correlation chart).

Arvada formation

Pleistocene: Wyoming.

L. B. Leopold and J. P. Miller, 1954, U. S. Geol. Survey Water-Supply Paper 1261, p, 8–10.

Asan limestone

Oligocene [Aquitanian] : Mariana Islands (Guam).

Risaburo Tayama, 1952, Coral reefs in the South Seas: Japan Hydrog. Office Bull., v. 11, p. 52, table 4 [English translation in library of U. S. Geol. Survey, p. 62].

Ashcroft series

Jurassic: British Columbia, Canada.

C. H. Crickmay, 1930, Calif. Univ. Pub. Dept. Geol. Sci. Bull., v. 19, no. 2, p. 34, 37.

Ashern formation

Lower Devonian or Silurian: Manitoba, Canada.

A. D. Baillie, 1950, Manitoba Dept. Mines and Nat. Res. Mines Br. Pub. 49–2, p. 9–12.

Asherville alluvium

Pleistocene(?) : Missouri.

Willard Farrar and Lyle McManamy, 1937, Mo. Geol. Survey and Water Res. 59th Biennial Rept., App. 6, p. 38–41.

Ash Hollow formation

Pliocene: Nebraska.

A. L. Lugn, 1938, Am. Jour. Sci., 5th ser., v. 36, no. 213, p. 223–224, 227; 1939, Geol. Soc. America Bull., v. 50, no. 8, p. 1261.

Ashishik basalt

Tertiary and Quaternary: Alaska (Aleutian Islands).

F. M. Byers, Jr., and others, 1947, U. S. Geol. Survey Alaskan Volcano Inv. Rept. 2, pt. 3, p. 25.

Ashland limestone

Devonian: Missouri.

E. B. Branson, 1941, Kans. Geol. Soc. Guidebook 15th Ann. Field Conf., p. 81, 83, 85.

Ashuanipi complex or series

Precambrian (Archean) : Quebec and Newfoundland (Labrador), Canada.

H. R. Rice, 1949, Canadian Mining Jour., v. 70, no. 9, p. 71.
J. M. Harrison, 1952, Canada Geol. Survey Paper 52–20, p. 6.

Asiento formation

Recent (Holocene) : Curaçao, Netherlands West Indies.

G. J. H. Molengraaff, 1929, Geologie en geohydrologie van het Eiland Curaçao: Delft, J. Waltman, Jr., p. 29.

Asitka group

Permian and older(?) : British Columbia, Canada.

C. S. Lord, 1946, Canada Geol. Survey Paper 46–6, p. 2.

As Perdido (Asuberudedo) beds

Eocene: Mariana Islands (Saipan).

Risaburo Tayama, 1952, Coral reefs in the South Seas: Japan Hydrog. Office Bull., v. 11, p. 47–48, table 4 [English translation in library of U. S. Geol. Survey, p. 57].

Asphalt Ridge sandstone

Upper Cretaceous: Utah.

P. T. Walton, 1944, Geol. Soc. America Bull., v. 55, no. 1, p. 99, 110–111.

Assean Lake series

Precambrian: Manitoba, Canada.

A. S. Dawson, 1941, Manitoba Dept. Mines and Nat. Res. Geol. Rept. 39–1, p. 20–21.

Assignack member (of Burnt Bluff formation)

Middle Silurian (Niagaran) : Ontario, Canada.

E. W. Shaw, 1937, Royal Canadian Inst. Trans., v. 21, pt. 2, p. 320.

Asuberudedo beds
See As Perdido beds.

Asuncion group
Upper Cretaceous: California.
N. L. Taliaferro, 1943, Calif. Dept. Nat. Res., Div. Mines Bull. 118, pt. 2, p. 132–134 [preprint 1941].

Asuncion limestone
See Sonson limestone.

Atalaya limestone
Upper Cretaceous: Puerto Rico.
R. C. Mitchell, 1954, Puerto Rico Univ. Agr. Expt. Sta. Tech. Paper 13, p. 47, 48.

Atan group
Lower and Middle Cambrian: British Columbia, Canada.
H. Gabrielse, 1955, Canada Geol. Survey Paper (Prelim. Map) 54–10.

Atane beds
Upper Cretaceous (Cenomanian): Northwest Greenland.
Oswald Heer, 1883, Meddel. om Grønland, hefte 5, pt. 3, p. 83, 93–112; pt. 5, p. 226–227.
Lauge Koch, 1929, Meddel. om Grønland, bind 73, afd. 2, nr. 2, p. 258–262.

Atanikerdluk beds
Miocene: Northwest Greenland.
Lauge Koch, 1929, Meddel. om Grønland, bind 73, afd. 2, nr. 2, p. 258–262.

Atarque member (of Mesaverde formation)
Upper Cretaceous: New Mexico.
W. S. Pike, Jr., 1947, Geol. Soc. American Mem. 24, p. 11, 35.

Atascosa formation
Cenozoic(?): Arizona.
B. P. Webb and K. C. Coryell, 1954, U. S. Atomic Energy Comm. RME–2009, p. 7, pl. 1.

Atchison formation
Pleistocene (Kansan): Kansas.
R. C. Moore and others, 1951, Kans. State Geol. Survey Bull. 89, p. 15.

Athertonville facies (of Brodhead formation)
Lower Mississippian: Kentucky.
P. B. Stockdale, 1939, Geol. Soc. America Special Paper 22, p. 148–154.

Athona granite
Precambrian: Saskatchewan, Canada.
A. M. Christie, 1952, Canada Geol. Survey Mem. 269, p. 39–41.

Atil sandstone
Precambrian or Lower Paleozoic: Sonora, Mexico.
Charles Schuchert, 1935, Historical geology of the Antillean-Caribbean region: New York, John Wiley and Sons, p. 138.
Manuel Maldonado-Koerdell, 1954, Asociación Mexicana Geólogos Petroleros Bol., v. 6, nos. 3–4, p. 136.

Atkinson formation
Upper Cretaceous: Subsurface in Georgia, Florida, and Alabama.
P. L. Applin and E. R. Applin, 1947, U. S. Geol. Survey Oil and Gas Inv. Prelim. Chart 26.

Atlantic muck

Pleistocene and Recent: Panama Canal Zone.

[T. F. Thompson], 1943, Panama Canal, Special Eng. Div., 3d Locks Proj., pt. 2, chap. 3, p. 23, fig. 3–2.

S. M. Jones, 1950, Geol. Soc. America Bull., v. 61, no. 9, p. 904, table 2.

Atrasado member (of Madera limestone)

Pennsylvanian: New Mexico.

V. C. Kelley and G. H. Wood, 1946, U. S. Geol. Survey Oil and Gas Inv. Prelim. Map 47.

Attewell Lake gabbro

Precambrian: Ontario, Canada.

W. D. Harding, 1951, Ontario Dept. Mines Ann. Rept., v. 56, pt. 6, p. 22–24.

Attikamagen formation

Precambrian (Proterozoic): Quebec and Newfoundland (Labrador), Canada.

H. R. Rice, 1949, Canadian Mining Jour., v. 70, no. 9, p. 71–72.

J. M. Harrison, 1952, Canada Geol. Survey Paper 52–20, p. 7–8.

Auger Lake conglomerate

Precambrian (Temiscamian?): Quebec, Canada.

W. W. Longley, 1951, Quebec Dept. Mines Geol. Rept. 47, p. 7.

Augusta Mountain formation

Middle Triassic: Nevada.

S. W. Muller, H. G. Ferguson, and R. J. Roberts, 1951, Geology of the Mount Tobin quadrangle, Nevada: U. S. Geol. Survey Geol. Quadrangle Map [GQ 7].

August Town series

Miocene, upper: Jamaica, British West Indies.

C. A. Matley, 1940, Geol. Soc. London Abs. Proc. 1373, p. 101; 1951, Geology and physiography of the Kingston district, Jamaica: Inst. of Jamaica, p. 39–40, 61–62, geol. map.

Aunuu tuff

Recent: Samoa Islands (Aunuu).

R. A. Daly, 1924, Carnegie Inst. Washington Pub. 340, p. 113, pl. B (geol. map).

H. T. Stearns, 1944, Geol. Soc. America Bull., v. 55, no. 11, p. 1285, pl. 1 (geol. map).

Aurela Ridge group

Age unknown: California.

K. J. Hsu, 1955, Calif. Univ. Dept. Geol. Sci. Bull., v. 30, no. 4, p. 231–232, 259, map 1.

Austell granite

Precambrian(?): Georgia.

G. W. Crickmay, 1952, Ga. Geol. Survey Bull. 58, p. 41–42.

Austin Glen member (of Normanskill formation)

Middle Ordovician (Chazy): New York.

Rudolf Ruedemann, 1942, N. Y. State Mus. Bull. 327, p. 28; 1942, Bull. 331, p. 102, 107–108, 115–116 [1946].

Austinville dolomite member (of Shady dolomite)

Lower Cambrian: Virginia.

Charles Butts, 1940, Va. Geol. Survey Bull. 52, pt. 1, p. 41–42, 51–52.

Australian members (of Fraser River formation)

Eocene or older: British Columbia, Canada.

Douglas Lay, 1940, British Columbia Dept. Mines Bull. 3, p. 5, 15.

Avawatz formation
Pliocene, lower: California.
P. C. Henshaw, 1939, Carnegie Inst. Washington Pub. 514, p. 5–7 [preprint].

Avon Park limestone
Eocene, middle: Florida (subsurface and surface).
P. L. Applin and E. R. Applin, 1944, Am. Assoc. Petroleum Geologists Bull., v. 28, no. 12, p. 1680, 1686–1688.
R. O. Vernon, 1951, Fla. Geol. Survey Bull. 33, p. 95–111.

Axes Creek phase (of Cherry Creek series)
Precambrian: Montana.
E. S. Perry, 1948, Mont. Bur. Mines and Geology Mem. 27, p. 2.

Axtell formation
Tertiary, upper(?): Utah.
E. M. Spieker, 1949, Utah Geol. Soc. Guidebook 4, p. 38, geol. map.

Aycross formation
Eocene, middle: Wyoming.
J. D. Love, 1939, Geol. Soc. America Special Paper 20, p. 66–73.

Ayers Cliff formation
Middle Ordovician (Trentonian or younger): Quebec, Canada, and Vermont.
C. G. Doll, 1951, Vt. Geol. Survey Bull. 3, p. 15, 22–24.

Aylor member (of Big Saline formation)
Lower Pennsylvanian: Texas.
F. B. Plummer, 1947, Jour. Geology, v. 55, no. 3, pt. 2. p. 196, 197.

Aylor Bluff member
See Aylor member.

Aymamon limestone
Miocene, lower: Puerto Rico.
A. D. Zapp, H. R. Bergquist, and C. R. Thomas, 1948, U. S. Geol. Survey Oil and Gas Inv. Prelim. Map 85, sheets 1, 2.

Babcock Hill member (of Onondago formation)
Middle Devonian: New York.
R. E. Stevenson, 1949, N. Y. State Sci. Service Rept. Inv. 3, p. 7.

Babeldaob agglomerate
See Babelthaup agglomerate.

Babelthaup agglomerate
Eocene: Caroline Islands (Babelthaup).
Risaburo Tayama, 1935, Topography, geology, and coral reefs of the Palau Islands: Tohoku Univ., Inst. Geology and Paleontology Contr. in Japanese Language, no. 18, p. 18–20 40–41 [English translation in library of U. S. Geol. Survey]; 1939, Japanese Jour. Geology and Paleontology Trans. and Abs., nos. 1–2, Abs., p. 29.

Baca formation
Eocene(?): New Mexico.
R. H. Wilpolt and others, 1946, U. S. Geol. Survey Oil and Gas Inv. Prelim. Map 61.

Bachelor Lake granite
Precambrian (Algoman?): Quebec, Canada.
W. W. Longley, 1951, Quebec Dept. Mines Geol. Rept. 47, p. 18.

Backwater Creek shale member (of Fort Scott formation)
See Blackwater Creek shale member (of Fort Scott formation).

Bacolet formation
Cretaceous(?): Tobago, British West Indies.
J. C. Maxwell, 1948, Geol. Soc. America Bull., v. 59, no. 8, p. 817–823.

Bacon limestone member (of Ferry Lake formation)
Lower Cretaceous (Glen Rose): Texas (subsurface).
W. V. Jones, 1945, Am. Assoc. Petroleum Geologists Bull., v. 29, no. 6, p. 839–844.

Bacon Ridge sandstone
Upper Cretaceous: Wyoming.
J. D. Love and others, 1948, Wyo. Geol. Survey Bull. 40, p. 1, 2–3.

Badger Bay series
Middle Ordovician(?): Newfoundland, Canada.
G. H. Espenshade, 1937, Newfoundland Geol. Survey Bull. 6, p. 6–11.

Badito quartzite member (of Hopewell series)
Precambrian: New Mexico.
Evan Just, 1937, N. Mex. School Mines Bull. 13, p. 21.

Baga shale and limestone (in Joserita member of Lowell formation)
Lower Cretaceous: Arizona.
A. A. Stoyanow, 1949, Geol. Soc. America Mem. 38, p. 12.

Baggs Hill granite
Devonian: Newfoundland, Canada.
J. R. Cooper, 1954, Canada Geol. Survey Mem. 276. p. 25.

Baie d'Espoir series
Silurian(?): Newfoundland, Canada.
W. B. Jewell, 1939, Newfoundland Geol. Survey Bull. 17, p. 6–8.

Baie Verte formation
Ordovician: Newfoundland, Canada.
H. A. Quinn, 1945, Canadian Mining Jour., v. 66, no. 5, p. 307.
K. D. Watson, 1947, Newfoundland Geol. Survey Bull. 21, p. 6–9.

Baker member (of Ladd formation)
See **Baker Canyon conglomerate member.**

Baker Canyon conglomerate member (of Ladd formation)
Upper Cretaceous: California.
W. P. Popenoe, 1937, Jour. Paleontology, v. 11, no. 5, p. 380; 1942, Am. Assoc. Petroleum Geologists Bull., v. 26, no. 2, p. 170–171.

Baker Creek member (in Yellowknife group)
Precambrian: Northwest Territories (Mackenzie), Canada.
C. E. G. Brown and A. S. Dadson, 1953, Canadian Inst. Mining and Metallurgy Trans., v. 56, p. 70.

Baker Lake porphyry
Tertiary: Colorado.
J. T. Stark and others, 1949, Geol. Soc. America Mem. 33, p. 81, 83–84.

Baker Pond gneiss
Upper Devonian(?) (Oliverian magma series): New Hampshire.
J. B. Hadley and others, 1938, Geologic map and structure sections of the New Hampshire portion of the Mt. Cube quadrangle (1:62,500): N. H. Highway Dept.
J. B. Hadley, 1942, Geol. Soc. America Bull., v. 53, no. 1, p. 137.

Bakken formation

Mississippian (Kinderhook): Subsurface in North Dakota, Montana, and Manitoba and Saskatchewan, Canada.

J. W. Nordquist, 1953, Billings Geol. Soc. Guidebook 4th Ann. Field Conf., p. 72–74, figs. 4, 5.

Balanos andesite

Eocene: Mariana Islands (Guam).

Risaburo Tayama, 1952, Coral reefs in the South Seas: Japan Hydrog. Office Bull., v. 11, p. 48, table 4 [English translation in library of U. S. Geol. Survey, p. 57].

Bald Hill agglomerate member (of Tuscan formation)

[Pliocene]: California.

R. C. Treasher, 1947, (abs.) Geol. Soc. America Bull., v. 58, no. 12, pt. 2, p. 1257.

Bald Knoll formation

Eocene, upper or Oligocene, lower: Utah.

W. N. Gilliland, 1949, Ohio State Univ. Abs. Doctors' Dissert. 57, p. 71; 1951, Nebr. Univ. Studies, new ser., no. 8, p. 43–47.

Bald Mountain formation

Precambrian: Utah.

D. J. Jones, 1955, Utah Geol. Mineralog. Survey Bull. 51, p. 13, 14.

Baldonnel formation

Triassic: British Columbia, Canada.

L. M. Clark, 1954, (abs.) Alberta Soc. Petroleum Geologists News Bull., v. 2, no. 6, p. 5.

Bald Rock granite

Late Jurassic(?): California.

Anna Hietanen, 1951, Geol. Soc. America Bull., v. 62, no. 6, p. 583, 584.

Baldwin formation

Mississippian (Chester): Illinois.

J. M. Weller *in* Stuart Weller and J. M. Weller, 1939, Ill. State Geol. Survey Rept. Inv. 59, p. 12–13.

Baldwin gneiss

Precambrian(?): California.

R. B. Güillou, 1953, Calif. Dept. Nat. Res., Div. Mines Special Rept. 31, p. 5 (fig. 2), 6–7.

Baldwin sandstone member (of Mesaverde formation)

Upper Cretaceous: Colorado.

E. C. Dapples, 1939, Econ. Geology, v. 34, no. 4, p. 371.

Balfour formation

Oligocene, lower: Colorado.

J. H. Johnson, 1937, (abs.) Colorado Univ. Studies, v. 25, no. 1, p. 77.

J. T. Stark and others, 1949, Geol. Soc. America Mem. 33, p. 61–63.

Balls Lake formation

Mississippian and/or Pennsylvanian: New Brunswick, Canada.

A. O. Hayes and B. F. Howell, 1937, Geol. Soc. America Special Paper 5, p. 113–114.

F. J. Alcock [1938], Canada Geol. Survey Mem. 216, p. 32.

Baltimore gabbro

Paleozoic (post-lower Ordovician): Maryland.

Ernst Cloos *in* Ernst Cloos and others, 1937, Md. Geol. Survey [Rept.], v. 13, pt. 1, p. 33 (table 1), pl. 1.

C. J. Cohen *in* Ernst Cloos and others, 1937, Md. Geol. Survey [Rept.], v. 13, pt. 5, p. 217, 218.

Bandelier rhyolite tuff

Quaternary: New Mexico.

H. T. U. Smith, 1937, (abs) Geol. Soc. America Proc. 1936, p. 103; 1938, Jour. Geology, v. 46, no. 7, p. 937, 959.

Bandera Quarry sandstone member (of Bandera shale)

Pennsylvanian (Des Moines): Kansas, Missouri, and Oklahoma.

J. M. Jewett, 1941, Kans. State Geol. Survey Bull. 38, pt. 11, p. 292.
R. C. Moore, J. C. Frye, and J. M. Jewett, 1944, Kans. State Geol. Survey Bull. 52, pt. 4, p. 196.

Banner silt (in Turner Valley member of Livingstone formation)

Carboniferous: Alberta, Canada.

R. J. W. Douglas, 1953, Alberta Soc. Petroleum Geologists 3d Ann. Field Conf. and Symposium, p. 68.

Bao group

Oligocene, upper: Dominican Republic.

W. M. Small, 1948, Seismol. Soc. America Bull., v. 38, no. 1, p. 26.

Barachois series

Upper Carboniferous: Newfoundland, Canada.

A. O. Hayes and Helgi Johnson, 1937, Newfoundland Dept. Nat. Res. Inf. Circ. 3, p. 2, map; 1938, Newfoundland Geol. Survey Bull. 12, p. 21–22.

Baranos andesite

See Balanos andesite.

Barata limestone (in Saavedra member of Lowell formation)

Lower Cretaceous: Arizona.

A. A. Stoyanow, 1949, Geol. Soc. America Mem. 38, p. 11.

Bar B formation

Pennsylvanian (Magdalena): New Mexico.

V. C. Kelley and Caswell Silver, 1952, N. Mex. Univ. Pubs. in Geology 4, p. 93–94, fig. 2.

Barbacoas formation

Pre-Eocene: Panama Canal Zone.

R. T. Hill, 1898, Harvard Coll. Mus. Comp. Zoology Bull., v. 28, no. 5, p. 183–187, 209.

Barberian series

Mesozoic (Early Cretacic): Arizona and New Mexico.

Charles Keyes, 1940, Pan-Am. Geologist, v. 74, no. 2, p. 105, 147–149.

Barboursville silts

Pleistocene (Illinoian): West Virginia.

D. P. Stewart, 1952, W. Va. Acad. Sci. Proc., v. 23, p. 113–115.

Barbuda limestone

Pleistocene: Barbuda, British West Indies.

P. M. Duncan, 1863, Geol. Soc. London Quart. Jour., v. 19, p. 451.
Alfred Senn, 1940, Am. Assoc. Petroleum Geologists Bull., v. 24, no. 9, p. 1581.

Baril member (of Mount Head formation)

Carboniferous: Alberta, Canada.

R. J. W. Douglas, 1953, Alberta Soc. Petroleum Geologists 3d Ann. Field Conf. and Symposium, p. 68.

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Barker Dome tongue (of Cliff House sandstone)
Upper Cretaceous: New Mexico.
P. T. Hays and A. D. Zapp, 1955, U. S. Geol. Survey Oil and Gas Inv. Map OM 144.

Barlow Ranch beds
Pleistocene, lower: California.
J. E. Eaton, 1943, Calif. Dept. Nat. Res., Div. Mines Bull. 118, pt. 2, p. 204, 205 [preprint 1941].

Barnett Hill formation
Pennsylvanian (Morrow): Oklahoma.
B. H. Harlton, 1938, Am. Assoc. Petroleum Geologists Bull., v. 22, no. 7, p. 908–912.

Barnsdall formation (of Ochelata group)
Pennsylvanian: Oklahoma.
M. C. Oakes, 1951, Tulsa Geol. Soc. Digest, v. 19, p. 119, 120.

Barrancón beds
Upper Cretaceous: Vera Cruz, Mexico.
J. M. Muir, 1936, Geology of the Tampico region, Mexico: Tulsa, Okla., Am. Assoc. Petroleum Geologists, p. 86.
Arnold Heim, 1940, Eclogae Geologicae Helvetiae, v. 33, no. 2, p. 329.

Barraute gabbro
Precambrian (Archean): Quebec, Canada.
W. W. Weber, 1951, Quebec Dept. Mines Prelim. Rept. 255, p. 12.

Barrettia limestone
Upper Cretaceous (Turonian): Jamaica, British West Indies.
C. T. Treechmann, 1922, Geol. Mag., v. 59, no. 9, table facing p. 423; no. 11, p. 505–507.
L. J. Chubb, 1955, Geol. Mag., v. 92, no. 3, p. 188–190.

Barrigada limestone
Pleistocene: Mariana Islands (Guam).
H. T. Stearns, 1940, (abs.) Geol. Soc. America Bull., v. 51, no. 12, pt. 2, p. 1948.
Risaburo Tayama, 1952, Coral reefs in the South Seas: Japan Hydrog. Office Bull., v. 11, p. 59, table 4 [English translation in library of U. S. Geol. Survey, p. 69].

Barrilaco caliche
Recent: Cuenca de Mexico, Mexico.
Kirk Bryan, 1948, Soc. Geol. Mexicana Bol., tomo 13, p. 12, pl. 1.

Barril Viejo shale
Lower Cretaceous: Coahuila, Mexico.
R. W. Imlay, 1940, Geol. Soc. America Bull., v. 51, no. 1, p. 121, 123.

Barry Lake gneiss
Precambrian (post-Keewatin?): Quebec, Canada.
R. L. Milner, 1943, Quebec Dept. Mines Geol. Rept. 14, p. 11–12.

Barrys zone (in Headland gneiss)
Precambrian: Newfoundland, Canada.
J. O. Fuller, 1941, Newfoundland Geol. Survey Bull. 15, p. 10–11.

Barslow formation
Triassic and/or older: British Columbia, Canada.
H. S. Bostock and D. A. McNaughton, 1940, Canada Geol. Survey Map 568A.

Barstovian age

Miocene: North America.

H. E. Wood, 2d, and others, 1941, Geol. Soc. America Bull., v. 52, no. 1, p. 12, pl. 1.

Bartholomew siltstone member (of Orangeville shale)

Mississippian: Pennsylvania.

Wallace de Witt, Jr., 1951, Geol. Soc. America Bull., v. 62, no. 11, p. 1364.

Bartolo conglomerate

Miocene and Pliocene: California.

G. J. Bellemin, 1940, Am. Assoc. Petroleum Geologists Bull., v. 24, no. 4, p. 652 (fig. 2), 653, 658.

Barton River formation

Silurian: Vermont, and Quebec, Canada.

C. G. Doll, 1951, Vt. Geol. Survey Bull. 3, p. 15, 25–32.

Bascom formation

Ordovician: Vermont and Massachusetts.

W. M. Cady, 1945, Geol. Soc. America Bull., v. 56, no. 5, p. 524, 542–545.

Baseline sandstone

Upper Cretaceous: Nevada and Arizona.

C. R. Longwell, 1949, Geol. Soc. America Bull., v. 60, no. 5, p. 929, 932–933.

Basic City shale member (of Tallahatta formation)

Eocene: Mississippi.

G. F. Brown and R. W. Adams, 1943, Miss. State Geol. Survey Bull. 55, p. 43–44, 55–56.

Basin rhyolite

Tertiary: Colorado.

J. T. Stark and others, 1949, Geol. Soc. America Mem. 33, p. 81, 100–101.

Basin Creek member (of Katalla formation)

Oligocene: Alaska.

D. J. Miller, D. L. Rossman, and C. A. Hickcox, 1945, Preliminary report on petroleum possibilities in the Katalla area, Alaska: U. S. Geol. Survey, p. 9–10; Topographic map and sections of the Katalla area, Alaska: U. S. Geol. Survey War-Minerals Inv. Prelim. Map.

Basin Ridge group

Tertiary: Colorado.

J. T. Stark and others, 1949, Geol. Soc. America Mem. 33, p. 81, 95–101.

Bassignac tuffs

Miocene, middle: Martinique, French West Indies.

Jean Giraud, 1918, Esquisse géologique de la Martinique avec carte géologique: Hanoi-Haiphong, Imprimerie d'Extrême-Orient, p. 13–17, 19.

Alfred Senn, 1940, Am. Assoc. Petroleum Geologists Bull., v. 24, no. 9, p. 1581, 1597.

Bassin Zim formation

Oligocene, lower: Haiti.

Jacques Butterlin, [1952], Résumé de thèse présentée à la Sorbonne, La géologie de la République d'Haïti et ses rapports avec celle des régions voisines (mimeo.), p. 4; 1954, Inst. Français d-Haïti Mém. 1, p. 63.

Bastion formation

Lower Cambrian: Northwest Greenland.

Lauge Koch, 1929, Meddel. om Grønland, bind 73, afd. 2, nr. 1, p. 27; nr. 2, p. 225.

Batamote andesite

Pliocene(?) : Arizona.

James Gilluly, 1937, Ariz. Univ. Bull., v. 8, no. 1, p. 48–49.

Bat Cave limestone

Lower Ordovician (Canadian) : New Mexico.

V. C. Kelley, 1951, Am. Assoc. Petroleum Geologists Bull., v. 35, no. 10, p. 2201 (table).
V. C. Kelley and Caswell Silver, 1952, N. Mex. Univ. Pubs. in Geology 4, p. 45–52, 53, fig. 4.

Bates limestone

Cambro-Ordovician(?) : Maine.

L. W. Fisher, 1936, Am. Mineralogist, v. 21, no. 5, p. 321, 323.

Bath beds (in Oceanic formation)

Eocene, upper : Barbados, British West Indies.

Alfred Senn, 1948, Eclogae Geologicae Helvetiae, v. 40, no. 2, p. 205, table 1.

Battell member (of Monastery formation)

Lower Cambrian : Vermont.

P. H. Osberg, 1952, Vt. Geol. Survey Bull. 5, p. 43, 44.

Battery Point formation

Middle Devonian : Quebec, Canada.

J. A. Dresser and T. C. Denis, 1944, Quebec Dept. Mines Geol. Rept. 20, v. 2, p. 300.

Battery Rock cyclothem (including Battery Rock sandstone or conglomerate)

Pennsylvanian : Kentucky and Illinois.

D. D. Owen, 1856, Ky. Geol. Survey Rept. for 1854 and 1855, p. 49.
J. M. Weller, 1940, Ill. State Geol. Survey Rept. Inv. 71, p. 37–38.

Battle formation

Middle Pennsylvanian : Nevada.

R. J. Roberts, 1951, Geology of the Antler Peak quadrangle, Nevada : U. S. Geol. Survey Geol. Quardrangle Map [GQ 10].

Battle formation

Upper Cretaceous : Saskatchewan, Canada.

G. M. Furnival, 1942, Canada Geol. Survey Paper (Prelim. Map) 42–5.

Battle Ax basalts

Pliocene to Pleistocene : Oregon.

T. P. Thayer, 1936, Jour. Geology, v. 44, no. 6, p. 706, 709 (fig. 2), 713 (fig. 3).

Battlemill beds

Cambrian and Ordovician : Ontario, Canada.

A. W. Grabau, 1936, Paleozoic formations in the light of the pulsation theory, v. 2, Cambrovician pulsation, pt. 1, Caledonian and St. Lawrence geosynclines : Peiping, China, University Press, Natl. Univ. Peking, p. 409.

Battle Mountain formation

Pennsylvanian : Colorado.

C. A. Arnold, 1941, Mich. Univ. Mus. Paleontology Contr., v. 6, no. 4, p. 60, 68.
K. G. Brill, Jr., 1942, Am. Assoc. Petroleum Geologists Bull., v. 26, no. 8, p. 1379–1392.

Battle Spring formation

Eocene, lower and middle : Wyoming.

G. N. Pipiringos, 1955, Wyo. Geol. Assoc. Guidebook 10th Ann. Field Conf., p. 101, 103.

Baum limestone member (of Paluxy sand)
Lower Cretaceous: Oklahoma.
C. W. Tomlinson, 1952, *in* Ardmore Geol. Soc. [Guidebook] Field Trip, p. 3, 4.

Baxter Hollow granite
Age not stated: Wisconsin.
R. M. Gates, 1942, Am. Mineralogist, v. 27, no. 10, p. 699–711.

Bay mud
Quaternary: California.
P. D. Trask and J. W. Rolston, 1951, Geol. Soc. America Bull., v. 62, no. 9, p. 1079, 1082, 1105–1109.

Bayard paleosol complex
Oligocene, upper, to Miocene: Nebraska.
C. B. Schultz and T. M. Stout, 1955, Nebr. Univ. State Mus. Bull., v. 4, no. 2, p. 46, fig. 10.

Bay d'Est formation
Precambrian (Proterozoic) or Lower Cambrian: Newfoundland, Canada.
W. H. Twenhofel, 1947, Am. Jour. Sci., v. 245, no. 2, p. 92.

Bay du Nord group
Lower or Middle Devonian: Newfoundland, Canada.
J. R. Cooper, 1954, Canada Geol. Survey Mem. 276, p. 10–11.

Bay of Islands complex
Post-Middle Ordovician, pre-Mississippian: Newfoundland, Canada.
J. R. Cooper, 1936, Newfoundland Geol. Survey Bull. 4, p. 7–8.

Bayou Calamus lentil (in Verda member of Yazoo clay)
Eocene (Jackson): Louisiana.
J. Huner, Jr., 1939, La. Dept. Conserv. Geol. Bull. 15, p. 159–161.

Bayou Lenann member (of Pendleton formation)
Eocene, lower (Wilcox): Louisiana and Texas.
Richard Wasem and L. J. Wilbert, Jr., 1943, Jour. Paleontology, v. 17, no. 2, p. 186, fig. 4.

Bay Point formation
Pleistocene: California.
L. G. Hertlein and U. S. Grant, IV, 1939, Calif. Jour. Mines and Geology, v. 35, no. 1, p. 63 (fig. 4), 71–72.

Baytree member (of Cardium formation)
Upper Cretaceous: Alberta, Canada.
Joseph Gleddie, 1949, Am. Assoc. Petroleum Geologists Bull., v. 33, no. 4, p. 522.

Bead Lake formation
Precambrian: Washington.
M. C. Schroeder, 1952, Wash. Dept. Conserv. Devel., Div. Mines and Geology Bull. 40, p. 7, 10–11.

Bealville fanglomerate
Oligocene: California.
T. W. Dibblee, Jr., and C. W. Chesterman, 1953, Calif. Dept. Nat. Res., Div. Mines Bull. 168, p. 12, 36–37.

Bear [formation]
Paleocene: Montana.
G. G. Simpson, 1937, U. S. Natl. Mus. Bull. 169, p. 17, 20.

Bear Canyon sandstone member (of Kreyenhagen formation)
Eocene, upper: California.
I. F. Wilson, 1943, Calif. Jour. Mines and Geology, v. 39, no. 2, p. 211, 226 (fig. 5).

Bear Island granodiorite
Age uncertain: Maryland.
Ernst Cloos *in* Ernst Cloos and C. W. Cooke, 1953, Geologic map of Montgomery County and the District of Columbia (1 : 62,500) : Md. State Dept. Geology, Mines, and Water Res.

Bear Mountain granite
[Precambrian]: Texas.
R. E. McAdams, 1936, Am. Mineralogist, v. 21, p. 129, 133, 134, 135.

Bear Point limestone
Middle Cambrian: Northwest Territories (Devon Island), Canada.
V. E. Kurtz, A. H. McNair, and D. B. Wales, 1952, Am. Jour. Sci., v. 250, no. 9, p. 648–649.

Bear River formation
Devonian: Nova Scotia, Canada.
H. M. Ami, 1900, Royal Soc. Canada Trans., ser. 2, v. 6, sec. 4, p. 206–207.

Bear Rock formation
Silurian or Devonian: Northwest Territories (Mackenzie), Canada.
J. S. Stewart, 1944, Canadian Inst. Mining and Metallurgy Trans., v. 47, p. 163; 1945, Canada Geol. Survey Paper 45–29, p. 5.

Bear Spring formation
Middle Devonian: Texas.
V. E. Barnes, P. E. Cloud, Jr., and L. E. Warren, 1947, Geol. Soc. America Bull., v. 58, no. 2, p. 136–138.

Bear Springs basalt
Tertiary, upper: New Mexico.
H. L. Jicha, Jr., 1954, N. Mex. State Bur. Mines Min. Res. Bull. 37, p. 39, 48–49.

Bearwallow schist
Age not stated: North Carolina.
C. E. Hunter and P. W. Mattocks, 1936, TVA Div. Geology Bull. 4, p. 13–14.

Beattie syenite porphyry
Precambrian: Quebec, Canada.
Stanley Davidson and A. F. Banfield, 1944, Econ. Geology, v. 39, no. 8, p. 537–540.

Beattie Peak formation
Upper Jurassic or Lower Cretaceous: British Columbia, Canada.
W. H. Matthews, 1947, British Columbia Dept. Mines Bull. 24, p. 11.

Beaver Bight formation
Middle Ordovician(?): Newfoundland, Canada.
G. H. Espenshade, 1937, Newfoundland Geol. Survey Bull. 6, p. 7–9.

Beaver Brook shale
Cambrian: Newfoundland, Canada.
G. R. Heyl, 1937, Newfoundland Geol. Survey Bull. 8, p. 9.

Beaver Dam black shale member (of Needmore shale)
Middle Devonian: Pennsylvania.
Bradford Willard *in* Bradford Willard, F. M. Swartz, and A. B. Cleaves, 1939, Pa. Geol. Survey, ser. 4, Bull. G 19, p. 141, 153.

Beaverdam sand

Pleistocene (early Aftonian): Maryland.

W. C. Rasmussen and T. H. Slaughter, 1955, Md. Dept. Geology, Mines and Water Res. Bull. 16, p. 113–115.

Beaver Divide conglomerate member (of Chadron formation)

Oligocene, lower: Wyoming.

R. L. Nace, 1939, Wyo. Geol. Survey Bull. 27, p. 32–34, pl. 1.

Beaverhead formation

Upper Cretaceous, Paleocene, and Eocene: Montana.

A. J. Eardley, 1950, (abs.) Geol. Soc. America Bull., v. 61, no. 12, pt. 2, p. 1552.
W. R. Lowell and M. R. Klepper, 1953, Geol. Soc. America Bull., v. 64, no. 2, p. 235–243.

Beaverhead granite

Eocene: Montana and Idaho.

Robert Scholten, K. A. Keenmon, and W. O. Kupsch, 1955, Geol. Soc. America Bull.. v. 66, no. 4, p. 370–372, pl. 1.

Beaverhill formation

See Beaverhill Lake formation.

Beaverhill Lake formation

Devonian: Alberta, Canada (subsurface).

D. B. Layer, chm., 1950, Am. Assoc. Petroleum Geologists Bull., v. 34, no. 9, p. 1823–1824.

Beaverlodge series

Precambrian: Saskatchewan, Canada.

F. J. Alcock, 1936, Canada Geol. Survey Mem. 196, p. 16–18.

Bécancour River formation

Ordovician: Quebec, Canada.

T. H. Clark, 1947, Quebec Dept. Mines Prelim. Rept. 204, p. 13–15.

Becerra formation

Pleistocene, upper: Cuenca de Mexico, Mexico.

Helmut de Terra, 1947, Ciencia, v. 8, nos. 6–9, p. 154–155.

Beckett limestone or formation

Middle Ordovician: Missouri.

E. R. Larson, 1951, Am. Assoc. Petroleum Geologists Bull., v. 35, no. 9, p. 2049–2052.

Becks limestone

Devonian: Utah.

N. C. Williams, 1940, Compass, v. 20, no. 2, p. 76 (fig. 1), 77.

Beck Spring dolomite

Precambrian (Pahrump series): California.

D. F. Hewett, 1940, Washington Acad. Sci. Jour., v. 30, no. 6, p. 240.

Bedford Canyon formation

Triassic: California.

E. S. Larsen, Jr., 1948, Geol. Soc. America Mem. 29, p. 18–22.

Bee member (of Richfield formation)

Precambrian to Lower Cambrian(?): British Columbia, Canada.

A. H. Lang, 1938, Canada Geol. Survey Paper 38–16, p. 8.

Beebe School formation
Middle Devonian: Michigan.
W. A. Kelly and G. W. Smith, 1947, Am. Assoc. Petroleum Geologists Bull., v. 31, no. 3, p. 460–461.

Beechatuda tongue (of Cliff House sandstone)
Upper Cretaceous: New Mexico.
P. T. Hays and A. D. Zapp, 1955, U. S. Geol. Survey Oil and Gas Inv. Map OM 144.

Beecher member (of Bluebell formation)
Upper Ordovician and Silurian: Utah.
Paul Billingsley *in* J. M. Boutwell, 1933, 16th Internat. Geol. Cong. [United States] Guidebook 17, Excursion C–1, p. 110 (fig. 14).
J. K. Rigby, 1952, Utah Geol. Mineralog. Survey Bull. 45, p. 23, 27, fig. 6.

Beecher member (of Dunleith formation)
Middle Ordovician: Illinois.
J. S. Templeton and H. B. Willman, 1952, Tri-State Geol. Soc. Guidebook 16th Ann. Field Conf., p. 33, figs. 3, 9.

Beehive rhyolite
Tertiary: Arizona.
W. H. Brown, 1939, Geol. Soc. America Bull., v. 50, no. 5, p. 740–741.

Beehive Mesa alluvium
Pleistocene or Recent: California.
B. F. Howell, Jr., 1954, Calif. Dept. Nat. Res., Div. Mines Bull. 170, map sheet 10.

Beeman formation
Pennsylvanian (Missourian): New Mexico.
L. C. Pray, 1954, N. Mex. Geol. Soc. Guidebook 5th Field Conf., p. 93.

Bee Tree shale
Pennsylvanian: Kentucky.
A. F. Crider, 1916, Ky. Geol. Survey [Rept.], 4th ser., v. 4, pt. 1, p. 138, 142.
H. R. Wanless, 1946, Geol. Soc. America Mem. 13, p. 88, 136.

Beirdneau sandstone member (of Jefferson formation)
Devonian: Utah.
J. S. Williams, 1948, Geol. Soc. America Bull., v. 59, no. 11, p. 1139, 1140.

Belanger member (of Bearpaw formation)
Upper Cretaceous: Saskatchewan, Canada.
G. M. Furnival, 1941, Royal Soc. Canada Trans., v. 35, sec. 4, p. 58–60.

Belcher Island series
Precambrian (Proterozoic): Quebec, Canada.
J. A. Dresser and T. C. Denis, 1944, Quebec Dept. Mines Geol. Rept. 20, v. 2, p. 47.

Belden shale or **formation**
Pennsylvanian: Colorado.
K. G. Brill, Jr., 1942, Am. Assoc. Petroleum Geologists Bull., v. 26, no. 8, p. 1385–1386.

Beldens formation
Middle Ordovician (Chazyan): Vermont.
W. M. Cady, 1945, Geol. Soc. America Bull., v. 56, no. 5, p. 524, 550–552.

Belem formation
Miocene, upper: Tabasco, Mexico.
J. B. Gibson, 1936, Soc. Geol. Mexicana Bol., tomo 9, no. 5, correlation chart.
G. P. Salas and Ernesto Lopez Ramos, 1951, Asociación Mexicana Geólogos Petroleros Bol., v. 3, nos. 1–2, p. 39–40.

Belkofski tuff

Tertiary, upper: Alaska.

G. C. Kennedy and H. H. Waldron, 1947, U. S. Geol. Survey Alaskan Volcano Inv. Rept. 2, pt. 2, p. 12.

Bella Union granite

Age not stated: Sonora, Mexico.

W. R. Wade and Alfred Wandtke, 1920, Am. Inst. Mining and Metall. Engineers Trans. v. 63, p. 383.

Bell Canyon formation

Permian (Guadalupe series): Texas.

P. B. King *in* R. K. DeFord and E. R. Lloyd, 1940, Am Assoc. Petroleum Geologists Bull., v. 24, no. 1, p. 8.

P. B. King, 1942, Am. Assoc. Petroleum Geologists Bull., v. 26, no. 4, p. 581–582, pl. 2.

Belle Bay volcanics

Ordovician(?): Newfoundland, Canada.

D. E. White, 1940, Econ. Geology, v. 35, no. 8, p. 968.

Bell Hill dolomite

Middle Silurian: Utah.

F. W. Osterwald, 1953, U. S. Geol. Survey Trace Elements Inv. Rept. TEI-330, p. 105.

Bell River anorthosite

Precambrian: Quebec, Canada.

B. C. Freeman, 1938, Jour. Geology, v. 46, p. 682.

Bell Top formation

Miocene: New Mexico.

F. E. Kottlowski, 1953, N. Mex. Geol. Soc. Guidebook 4th Field Conf., p. 145, 148 (chart).

Bellwood dolomite

Silurian (Niagaran): Illinois.

T. E. Savage *in* C. K. Swartz and others, 1942, Geol. Soc. America Bull., v. 53, no. 4, p. 536, Chart 3.

Belridge diatomite

Miocene, upper: California.

S. S. Siegfus, 1939, Am. Assoc. Petroleum Geologists Bull., v. 23, no. 1, p. 25.

Belton sandstone member (of Chanute formation)

Pennsylvanian (Missouri series): Missouri.

J. R. Clair, 1943, Mo. Geol. Survey and Water Res. 2d ser., v. 27, p. 20–25, pl. 1.

Bena gravels

Miocene: California.

T. W. Dibblee, Jr., and C. W. Chesterman, 1953, Calif. Dept. Nat. Res., Div. Mines Bull. 168, p. 12, 38–40.

Benbolt limestone

Middle Ordovician: Virginia.

B. N. Cooper and C. E. Prouty, 1943, Geol. Soc. America Bull., v. 54, no. 6, p. 868–871.

Ben Bow limestone

Eocene: Jamica, British West Indies.

C. A. Matley and Frank Raw, 1942, Geol. Mag., v. 79, no. 4, p. 246, 250–251.

Ben Day porphyry

Tertiary, lower: Texas.

R. L. Ives, 1941, Am. Jour. Sci., v. 239, no. 5, p. 344, 347.

Bengal limestone

Miocene: Jamica, British West Indies.

V. A. Zans and H. R. Versey *in* V. A. Zans, 1954, Jamaica Geol. Survey Dept. Ann. Rept. 1952–53, p. 2.

Ben Hur limestone

Middle Ordovician: Virginia.

R. L. Miller and W. P. Brosge, 1950, U. S. Geol. Survey Oil and Gas Inv. Prelim. Map 104.

Benitie group

Eocene(?): Trinidad, British West Indies.

E. H. Cunningham-Craig, 1905, Trinidad Legislative Council Paper no. 25 of 1905, p. 7.

Benner limestone

Middle Ordovician (Mohawkian): Pennsylvania.

G. M. Kay, 1941, (abs.) Geol. Soc. America Bull., v. 52, no. 12, pt. 2, p. 1969.

Bennett formation

Pliocene, lower: California.

O. P. Jenkins, 1938, Geologic map of California (1 : 500,000) : Calif. Dept. Nat. Res., Div. Mines, sheet 4.

Benson dolomite member (of Tribes Hill formation)

Lower Ordovician: New York.

R. R. Wheeler, 1941, (abs.) Geol. Soc. America Bull., v. 52, no. 12, pt. 2, p. 1938–1939; 1942, Am. Jour. Sci., v. 240, no. 7, p. 518, 522.

Benson facies (of Cow Bayou member of Logansport formation)

Paleocene (Midway): Louisiana.

G. E. Murray, 1948, La. Dept. Conserv. Geol. Bull. 25, p. 112–114.

Bentley formation

Pleistocene: Louisiana.

H. N. Fisk, 1938, La. Dept. Conserv. Geol. Bull. 10, p. 78, 157–160.

Bent Mountain member (of Bluestone formation)

Mississippian (Chester): West Virginia and Virginia.

B. N. Cooper, 1944, Va. Geol. Survey Bull. 60, p. 186.

Berdoo granite

Precambrian: California.

W. J. Miller, 1946, Geol. Soc. America Bull., v. 57, no. 5, p. 473.

Bergen shale member (of Lykins formation)

Permian: Colorado.

L. W. LeRoy, 1946, Colo. School Mines Quart., v. 41, no. 2, p. 31, 33, 35.

Berino member (of Magdalena formation)

Pennsylvanian: Texas.

L. A. Nelson, 1937, Colo. Univ. Studies, v. 25, no. 1, p. 89; 1940, Am. Assoc. Petroleum Geologists Bull., v. 24, no. 1, p. 167, 168–170.

Bernal formation

Permian: New Mexico.

V. C. Kelley, 1949, N. Mex. Univ. Pubs. in Geology 2, fig. 2.
G. O. Bachman, 1953, U. S. Geol. Survey Oil and Gas Inv. Map OM 137.

Bernetz gneiss

Precambrian (post-Keewatin): Quebec, Canada.

W. W. Longley, 1946, Quebec Dept. Mines Geol. Rept. 24, p. 12.

Berry formation

Eocene to Miocene, lower: California.

R. R. Thorup, 1941, (abs.) Geol. Soc. America Bull., v. 52, no. 12, pt. 2, p. 1958; 1943, Calif. Dept. Nat. Res., Div. Mines Bull. 118, pt. 3, p. 464, 465.

Berryessa formation

Cretaceous: California.

M. D. Crittenden, Jr., 1951, Calif. Dept. Nat. Res., Div. Mines Bull. 157, p. 22 (fig. 4), 33–35, pl. 1 (geol. map).

Bessmer sandstone or quartzite

Precambrian (Proterozoic): Michigan.

W. A. Seaman *in* A. K. Snelgrove, W. A. Seaman, and V. L. Ayres, 1944, Mich. Dept. Conserv. Geol. Survey Div. Progress Rept. 10, p. 16.

Betheden formation

Paleocene or Eocene: Mississippi.

F. F. Mellen, 1939, Miss. State Geol. Survey Bull. 38, p. 26–28.

Beulah Church sand lentil (in Slaughter Creek member of Pendleton formation)

Eocene, lower (Wilcox): Louisiana and Texas.

Richard Wasem and L. J. Wilbert, Jr., 1943, Jour. Paleontology, v. 17, no. 2, p. 187, fig. 4.

Bevier cyclothem or formation (including Bevier clay)

Pennsylvanian (Des Moines): Missouri and Kansas.

G. E. Abernathy, 1937, Kans. Geol. Soc. Guidebook 11th Ann. Field Conf., p. 18, 19, 23; 1938, Kans. Acad. Sci. Trans., v. 41, p. 193, 195.

Biche limestone

Miocene, lower and middle: Trinidad, British West Indies.

H. G. Kugler, 1936, Am. Assoc. Petroleum Geologists Bull., v. 20, no. 11, p. 1451 (chart).

H. H. Renz, 1942, 8th Am. Sci. Cong. Proc., v. 4, p. 555.

Bidarka formation

Lower Jurassic: Alaska.

L. B. Kellum, 1945, N. Y. Acad. Sci. Trans., ser. 2, v. 7, no. 8, p. 203, 208.

Bide Arm formation

Ordovician: Newfoundland, Canada.

Frederick Betz, Jr., 1939, Newfoundland Geol. Survey Bull. 16, p. 19–20.

Bidwell member (of Cataract formation)

Lower Silurian (Alexandrian): Ontario, Canada.

E. W. Shaw, 1937, Royal Canadian Inst. Trans., v. 21, pt. 2, p. 320.

Big Branch gneiss

Precambrian: Texas.

V. E. Barnes, 1940, *in* Geol. Soc. America [Guidebook] 53d Ann. Meeting, p. 53 (geol. map).

Big Butt quartzite

Precambrian: North Carolina, Georgia, and Tennessee.

G. W. Stose and A. J. Stose, 1946, (abs.) Geol. Soc. America Bull., v. 57, no. 12. pt. 2, p. 1233; 1949, v. 60, no. 2, p 272–273, 284–285.

Bigelow glacial substage

Pleistocene (Tazewell): Colorado.

R. L. Nelson, 1954, Jour. Geology, v. 62, no. 4, p. 329–331.

Big Falls picritic basalt
Pleistocene(?): Hawaiian Islands (Maui).
G. A. Macdonald *in* H. T. Stearns and G. A. Macdonald, 1942, Hawaii Div. Hydrography Bull. 7, p. 231, 238–241.

Big Megantic nordmarkite or granite
Devonian: Quebec, Canada.
J. A. Dresser and T. C. Denis, 1944, Quebec Dept. Mines Geol. Rept. 20, v. 2, p. 462.

Bignell loess
Pleistocene and Recent: Nebraska.
C. B. Schultz and T. M. Stout, 1945, Am. Jour. Sci., v. 243, no. 5, p. 241–244.

Big Oak Flat shale and sandstone member (of Panoche group)
Upper Cretaceous: California.
I. F. Wilson, 1943, Calif. Jour. Mines and Geology, v. 39, no. 2, p. 203–204, 226 (fig. 5).

Big Run sandstone
Pennsylvanian (Monongahela): Ohio.
A. T. Cross, W. H. Smith, and Thomas Arkle, Jr., 1950, Field guide for the special field conference on the stratigraphy, sedimentation and nomenclature of the Upper Pennsylvanian and Lower Permian strata (Monongahela, Washington and Greene series) in the northern portion of the Dunkard Basin of Ohio, West Virginia, and Pennsylvania: W. Va. Geol. and Econ. Survey, Section 12–A, [pl. 1].

Big Saline group
Pennsylvanian (Lampasas): Texas.
M. G. Cheney, 1940, Am. Assoc. Petroleum Geologists Bull., v. 24, no. 1, p. 66, 83.

Big Spring member (of Conococheague limestone)
See Big Spring Station member.

Big Spring Station member (of Conococheague limestone)
Upper Cambrian (Dresbachian): Maryland and Pennsylvania.
Ernst Cloos, 1951, Md. Dept. Geology, Mines and Water Res., Washington County [Rept. 14], p. 45, 55–56.
J. L. Wilson, 1952, Geol. Soc. America Bull., v. 63, no. 3, p. 307–308.

Big Valley member (of Wabamun formation)
Upper Devonian: Alberta, Canada (subsurface).
J. S. Wonfor and J. M. Andrichuck, 1953, Alberta Soc. Petroleum Geologists News Bull., v. 1, no. 9, p. 3.

Big Wash andesite
Tertiary: Arizona.
B. E. Thomas, 1949, Econ. Geology, v. 44, no. 8, p. 667–669.

Bijou formation
Miocene to Pliocene (Barstovian-Clarendonian): South Dakota.
R. E. Stevenson and L. A. Carlson, 1950, Areal geology of the Bonesteel quadrangle (1:62,500):S. Dak. State Geol. Survey.
R. E. Stevenson, 1953, S. Dak. Acad. Sci. Proc., v. 42, p. 86–89

Bijuco nepheline syenite
Age not stated: Panama.
Karl Sapper, 1937, Mittelamerika, Handbuch der regionalen Geologie: Heidelberg, Band 8, Abt. 4a, Heft 29, p. 134.

Bilk Creek sandstone member (of Wanakah formation)
Upper Jurassic: Colorado.
M. I. Goldman and A. C. Spencer, 1941, Am. Assoc. Petroleum Geologists Bull., v. 25, no. 9, p. 1750, fig. 3.

Billings formation
Ordovician: Ontario, Canada.
A. E. Wilson, 1937, Royal Soc. Canada Trans., ser. 3, v. 31, sec. 4, p. 46; 1940, Canada Geol. Survey Map 588A.

Billings member (of Burnt Bluff formation)
Middle Silurian (Niagaran): Ontario, Canada.
E. W. Shaw, 1937, Royal Canadian Inst. Trans., v. 21, pt. 2, p. 320.

Billings member (of Wellington formation)
Permian: Oklahoma.
G. O. Raasch, 1941, (abs.) Geol. Soc. America Bull., v. 52, no. 12, pt. 2, p. 1928.

Billy Lake quartz porphyry
Precambrian (Algoman?): Quebec, Canada.
W. W. Longley, 1951, Quebec Dept. Mines Geol. Rept. 47, p. 17–18.

Binghamton drift
Pleistocene (Wisconsin): New York and Pennsylvania.
Paul MacClintock and E. T. Apfel, 1944, Geol. Soc. America Bull., v. 55, no. 10, p. 1155–1159.

Birchy schist
Precambrian: Newfoundland, Canada.
J. O. Fuller, 1941, Newfoundland Geol. Survey Bull. 15, p. 14.

Bird River intrusive complex
Precambrian (Archean): Manitoba, Canada.
J D. Bateman, 1943, Canadian Inst. Mining and Metallurgy Trans., v. 46, p. 161.

Birkmose member (of Franconia formation)
Upper Cambrian: Wisconsin and Minnesota.
R. R. Berg, 1951, Minn. Geologist, v. 8, no. 4, p. [1].

Birse member (of Stony Mountain formation)
Upper Ordovician (Richmond): Manitoba, Canada.
V. J. Okulitch, 1943, Royal Soc. Canada Trans., sec. 4, v. 37, p. 63–64.

Bishop tuff
Pleistocene: California.
C. M. Gilbert, 1938, Geol. Soc. America Bull., v. 49, no. 12, p. 1830–1860.

Bishop Creek granite
Upper Jurassic or Lower Cretaceous(?): California.
G. A. Schroter, 1938, Eng. and Mining Jour., v. 139, no. 4, p. 43.

Bishops Cap member (of Magdalena formation)
Pennsylvanian: Texas.
L. A. Nelson, 1937, Colo. Univ. Studies, v. 25, no. 1, p. 89; 1940, Am. Assoc. Petroleum Geologists Bull., v. 24, no. 1, p. 166–168.

Bishops Lodge member (of Tesuque formation)
Miocene, middle(?): New Mexico.
F. E. Kottlowski, 1953, N. Mex. Geol. Soc. Guidebook 4th Field Conf., p. 148 (chart).

Bissex Hill marl

Oligocene, upper: Barbados, British West Indies.

G. F. Franks and J. B. Harrison, 1898, Geol. Soc. London Quart. Jour., v. 54. p. 544, 546.

Alfred Senn, 1940, Am. Assoc. Petroleum Geologists Bull., v. 24, no. 9, p. 1580, 1590.

Bisteneau member (of Hall Summit formation)

Paleocene (Midway): Louisiana.

D. P. Meagher and L. C. Aycock, 1942, La. Dept. Conserv. Geol. Pamph. 3, p. 12–16.

G. E. Murray, Jr., and E. P. Thomas, 1945, Am. Assoc. Petroleum Geologists Bull., v. 29, no. 1, p. 59.

Bitterwater formation

Pliocene and Quaternary, upper: California.

O. P. Jenkins, 1938, Geologic map of California (1 : 500,000): Calif. Dept. Nat. Res., Div. Mines, sheet 4.

Bjørne Ø conglomerate

Age not stated: Northeast Greenland.

Curt Teichert, 1933, Meddel. om Grønland, bind 95, nr. 1, p. 38–44, 60, pl. 1.

Blaa Mountain formation

Middle to Upper Triassic (Ladinian-Karnian): Northwest Territories (Ellesmere Island), Canada.

J. C. Troelsen, 1950, Meddel. om Grønland, bind 149, nr. 7, p. 74.

Black Butte till

Eocene: Montana.

H. W. Scott, 1938, Jour. Geology, v. 46, no. 4, p. 628–635.

Black Canyon group

Tertiary(?) (pre-Pliocene): Nevada.

C. R. Longwell, 1936, Geol. Soc. America Bull., v. 47, no. 9, p. 1417–1419.

Black Eagle sandstone (in Bearpaw formation)

Upper Cretaceous: Alberta and Saskatchewan, Canada.

L. S. Russell, 1950, Geol. Soc. America Bull., v. 61, no. 1, p. 31–32.

Blackfoot Canyon facies (of Belt series)

Precambrian: Alberta, Canada; and Montana.

C. L. Fenton and M. A. Fenton, 1937, Geol. Soc. America Bull., v. 48, no. 12, p. 1877.

Blackford formation

Middle Ordovician: Virginia.

Charles Butts, 1940, Va. Geol. Survey Bull. 52, pt. 1, p. 126, 131–134.

Blackhead formation

Precambrian: Newfoundland, Canada.

A. O. Hayes, 1931, Econ. Geology, v. 26, no. 1, p. 46 (table), 47 (map).

Black Island member (of Winnipeg formation)

Ordovician: Saskatchewan and Manitoba, Canada.

W. O. Kupsch, 1953, Saskatchewan Dept. Nat. Res. Rept. 10, p. 11.

G. J. Genik, 1954, Alberta Soc. Petroleum Geologists News Bull., v. 2, no. 5, p. 1.

Blackiston formation

Upper Devonian: Indiana, Kentucky, and Ohio.

Guy Campbell, 1946, Geol. Soc. America Bull., v. 57, no. 9, p. 837, 842–847, 868–869, 875–879.

Blackjack Creek cyclothem (including Blackjack Creek limestone)
Pennsylvanian (Des Moines): Missouri, Iowa, Kansas, and Nebraska.
L. M. Cline, 1941, Am. Assoc. Petroleum Geologists Bull., v. 25, no. 1, p. 36–37.
J. M. Jewett, 1945, Kans. State Geol. Survey Bull. 58, p. 22–23, 62.

Blackjack Knob member (of Theodosia formation)
Lower Ordovician: Missouri and Arkansas.
J. S. Cullison, 1944, Mo. Univ. School Mines and Metallurgy Bull., Tech. Ser., v. 15, no. 2, p. 25, 27.

Black Knob dolomite (in Pacheta member of Lowell formation)
Lower Cretaceous: Arizona.
A. A. Stoyanow, 1949, Geol. Soc. America Mem. 38, p. 12.

Black Knob quartzite (in Pacheta member of Lowell formation)
Lower Cretaceous: Arizona.
A. A. Stoyanow, 1949, Geol. Soc. America Mem. 38, p. 12.

Black Lake lagunal facies
Middle Devonian: Michigan.
[G. M. Ehlers], 1938, Mich. Acad. Sci. Arts and Letters Sec. Geology and Mineralogy [Guidebook] 8th Ann. Field Excursion, [fig. 2] after p. 8.
W. A. Kelly, 1940, Mich. Acad. Sci. Arts and Letters Sec. Geology and Mineralogy [Guidebook] 10th Ann. Field Excursion, [fig. 1].

Black Point ash
Recent: Hawaiian Islands (Oahu).
H. T. Stearns, 1940, Hawaii Div. Hydrography Bull. 5, p. 53.

Black Point basalt
Quaternary: Alaska.
G. C. Kennedy and H. H. Waldron, 1947, U. S. Geol. Survey Alaskan Volcano Inv. Rept. 2, pt. 2, p. 13.

Black Point dolomite member (of Cherry Creek series)
Precambrian: Montana.
E. S. Perry, 1948, Mont. Bur. Mines and Geology Mem. 27, p. 7.

Black Point formation
Mississippian: Newfoundland, Canada.
L. J. Weeks, 1955, Canada Geol. Survey Map 1043A.

Black Point limestone
Age not stated: Hawaiian Islands (Oahu).
H. T. Stearns, 1940, Hawaii Div. Hydrography Bull. 5, p. 53.

Black Point limestone
Mississippian: Newfoundland, Canada.
A. O. Hayes and Helgi Johnson, 1938, Newfoundland Geol. Survey Bull, 12, p. 13.

Black Prince limestone
Upper Mississippian or Lower Pennsylvanian(?): Arizona.
T. M. Romslo, 1949, U. S. Bur. Mines Rept. Inv. 4504, p. 5.
James Gilluly, J. R. Cooper, and J. S. Williams, 1954, U. S. Geol. Survey Prof. Paper 266, p. 13–15.

Black River group
Precambrian: Quebec, Canada.
J. W. Ambrose and H. C. Gunning, 1939, Canada Geol. Survey Paper (Prelim. Map) 39–12.

Black Shale Brook formation
Upper Cambrian (Johannian) : New Brunswick, Canada.
A. O. Hayes and B. F. Howell, 1937, Geol. Soc. America Special Paper 5, p. 77–79.

Blacktail formation
Cenozoic(?) : Arizona.
H. E. Enlows, 1955, Geol. Soc. America Bull., v. 66, no. 10, p. 1217.

Blacktail granite gneiss
Precambrian (pre-Beltian) : Montana.
E. W. Heinrich, 1948, (abs.) Geol. Soc. America Bull., v. 59, no. 12, pt. 2, p. 1329.

Blacktail Deer Creek basalts
Miocene, lower : Montana.
Robert Scholten, K. A. Keenmon, and W. O. Kupsch, 1955, Geol. Soc. America Bull.. v. 66, no. 4, p. 374, pl. 1.

Black Trout diorite
Precambrian (Archean or Proterozoic) : Manitoba, Canada.
A. P. Fawley, 1949, Manitoba Dept. Mines and Nat. Res. Rept. and Map 48–6, p. 12–13.

Blackwater Creek shale member (of Fort Scott formation)
Pennsylvanian (Des Moines) : Missouri.
J. R. Clair, 1943, Mo. Geol. Survey and Water Res., 2d ser., v. 27, pl. 2.

Blake River group
Precambrian : Quebec, Canada.
H. C. Gunning and J. W. Ambrose, 1937, Canadian Inst. Mining and Metallurgy Trans., v. 40, p. 344–345.

Blancan age
Pliocene : North America.
H. E. Wood, 2d, and others, 1941, Geol. Soc. America Bull., v. 52, no. 1, p. 12–13, pl. 1.

Bianco sandstone (in Puente formation)
Miocene, middle : California.
M. L. Krueger, 1943, Calif. Dept. Nat. Res., Div. Mines Bull. 118, pt. 3, p. 363.
A. O. Woodford, T. G. Moran, and J. S. Shelton, 1946, Am. Assoc. Petroleum Geologists Bull., v. 30, no. 4, p. 521.

Blauwbaai conglomerate
Pleistocene : Curaçao, Netherlands West Indies.
G. J. H. Molengraaff, 1929, Geologie en geohydrologie van het Eiland Curaçao : Delft, J. Waltman, Jr., p. 92, strat. table.

Blessington gabbroic anorthosite.
Precambrian : Ontario, Canada.
J. M. Harrison, 1944, Geol. Soc. America Bull., v. 55, no. 12, p. 1409.

Blind Boy member (of Red Rose formation)
Upper Jurassic and Lower Cretaceous : British Columbia, Canada.
R. E. Sommers, 1955, British Columbia Bur. Mines Ann. Rept. 1954, p. A89–A90.

Blind Creek formation
Permian : British Columbia, Canada.
H. S. Bostock, 1940, Canada Geol. Survey Map 341A.

Blocher formation
Middle Devonian : Indiana.
Guy Campbell, 1946, Geol. Soc. America Bull., v. 57, No. 9, p. 841–842, 845.

Blomsterbaek limestone member (of Cape Wood formation)
Middle Cambrian: Northwest Territories (Ellesmere Island), Canada; and North Greenland.
J. C. Troelsen, 1950, Meddel. om Grønland, bind 149, nr. 7, p. 43, 46.

Blomsterbukta quartzite and shale
Middle Cambrian(?): Northeast Greenland.
A. B. Cleaves and E. F. Fox, 1935, Geol. Soc. America Bull., v. 46, no. 3, p. 473–474, pl. 43.

Blondeau limestone conglomerate
Ordovician (Chazyan): Quebec, Canada.
A. W. Grabau, 1936, Paleozoic formations in the light of the pulsation theory, v. 2, Cambrovician pulsation, pt. 1, Caledonian and St. Lawrence geosynclines: Peiping, China, University Press, Natl. Univ. Peking, p 415, 422.

Bloomsdale formation
Middle Ordovician: Missouri.
E. R. Larson, 1951, Am. Assoc. Petroleum Geologists Bull., v. 35, no. 9, p. 2046–2048.

Blounts Creek member (of Fleming formation)
Miocene: Louisiana.
H. N. Fisk, 1940, La. Dept. Conserv. Geol. Bull. 18, p. 118, 168–170.

Blow-me-down complex
Upper Ordovician or Devonian: Newfoundland, Canada.
A. K. Snelgrove, F. W. Roebling, III, and J. L. Kemmerer, Jr., 1934, Am. Mineralogist, v. 19, no. 1, p. 22–23.

Bluebell limestone
Cambrian or Ordovician: British Columbia, Canada.
Anonymous, 1954, Canadian Mining Jour., v. 75, no. 5, p. 177.

Bluebonnet member (of Lake Waco formation)
Cretaceous (Gulf): Texas.
W. S. Adkins and F. E. Lozo *in* F. E. Lozo, 1951, Fondren Sci. Series, no. 4, p. 122–123, fig. 25.

Blue Creek Canyon group
Cambrian: Oklahoma.
W. E. Ham, 1949, Okla. Geol. Survey Circ. 26, p. 19.

Blue Mountain gravel
Quaternary: Arizona.
Donaldson Koons, 1948, Plateau, v. 20, no. 4, p. 54 (fig. 1), 58–59.

Blue Ridge member (of Graminia formation)
Devonian: Alberta, Canada (subsurface).
A. L. Choquette, 1955, Alberta Soc. Petroleum Geologists Jour., v. 3, no. 5, p. 70–73.

Bluesky formation
Lower Cretaceous: Alberta, Canada (subsurface).
P. C. Badgley, 1952, Canada Geol. Survey Paper 52–11, p. 9, 12.

Blue Springs muscovite schist
Precambrian: New Mexico.
J. T. Stark and E. C. Dapples, 1941, (abs.) Geol. Soc. America Bull., v. 52, no. 12, pt. 2, p. 1936; 1946, v. 57, no. 12, pt. 1, p. 1130–1133.

Bluestone facies (of New Providence formation)
Lower Mississippian: Kentucky.
P. B. Stockdale, 1939, Geol. Soc. America Special Paper 22, p. 125–132.

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Bluewater formation
Permian: New Mexico and Arizona.
S. B. Talmage and T. P. Wootton, 1937, N. Mex. State Bur. Mines Min. Res. Bull. 12, p. 30.

Bluff Head volcanics
Post-Middle Ordovician, pre-Mississippian: Newfoundland, Canada.
J. R. Cooper, 1936, Newfoundland Geol. Survey Bull. 4, p. 22.

Bluff Mesa formation
Lower Cretaceous: Texas.
Elliot Gillerman, 1953, U. S. Geol. Survey Bull. 987, p. 12, 16–18.

Blyklippen series
Middle Pennsylvanian: Northeast Greenland.
Emil Witzig, 1954, Meddel. om Grønland, bind 72, afd. 2, nr. 5, p. 8–9, 24.

Boardman formation
Lower Ordovician (Canadian): Vermont.
Phillip Fowler, 1950, Vt. Geol. Survey Bull. 2, p. 13, 24–27.

Boar Head formation
Lower Carboniferous: New Brunswick, Canada.
A. O. Hayes and B. F. Howell, 1937, Geol. Soc. America Special Paper 5, p. 108–109.

Boarman member (of Mifflin formation)
Middle Ordovician: Illinois.
J. S. Templeton and H. B. Willman, 1952, Tri-State Geol. Soc. Guidebook 16th Ann. Field Conf., figs. 3, 10, 16.

Boca de Serpiente formation
Eocene, upper: Trinidad, British West Indies.
C. J. Maury, 1929, Jour. Geology, v. 37, no. 2, p. 181.

Boca Santo Preto conglomerate
Recent (Holocene): Curaçao, Netherlands West Indies.
G. J. H. Molengraaff, 1929, Geologie en geohydrologie van het Eiland Curaçao: Delft, J. Waltman, Jr., p. 30, 92, strat. table.

Bode conglomerate
Precambrian: Northwest Territories (Mackenzie), Canada.
Neil Campbell, 1947, Canadian Inst. Mining and Metallurgy Trans., v. 50, p. 511–514.

Bofay formation
Cretaceous: Hidalgo, Mexico.
F. S. Simons, 1951, Stanford Univ. Abs. Dissert., v. 26, p. 333.

Boggs Mountain flows
Quaternary: California.
J. C. Brice, 1953, Calif. Dept. Nat. Res., Div. Mines Bull. 166, p. 12, pl. 7.

Bogota cyclothem (including Bogota limestone and shale)
Pennsylvanian: Illinois.
W. A. Newton and J. M. Weller, 1937, Ill. State Geol. Survey Rept. Inv. 45, p. 19–24.

Boice shale
Mississippian: Nebraska (subsurface).
E. C. Reed, 1946, Am. Assoc. Petroleum Geologists Bull., v. 30, no. 3, p. 348–349.

Bois Blanc formation

Middle Devonian: Michigan.

G. M. Ehlers *in* K. K. Landes, G. M. Ehlers, and G. M. Stanley, 1945, Mich. Dept. Conserv. Geol. Survey Div. Pub. 44, Geol. Ser. 37, p. 34, 35, 80–109.

Bolander group

Pennsylvanian (Des Moines): New Mexico.

M. L. Thompson, 1942, N. Mex. State Bur. Mines Min. Res. Bull. 17, p. 27, 51–55.

Bolanos andesite

See Balanos andesite.

Bolarian series

Middle Ordovician: Virginia, Kentucky, West Virginia, Maryland, Pennsylvania, and New York, and Ontario, Canada.

Marshall Kay, 1947, (abs.) Geol. America Bull., v. 58, no. 12, pt. 2, p. 1198–1199; 1948, Am. Assoc. Petroleum Geologists Bull., v. 32, no. 8, p. 1401, 1402.

Boleo formation

Pliocene, lower: Baja California, Mexico.

I. F. Wilson, 1948, Am. Assoc. Petroleum Geologists Bull., v. 32, no. 9, p. 1774–1780.

Boley conglomerate member (of Vamoosa formation)

Pennsylvanian (Virgil): Oklahoma.

R. R. Ries, 1954, Okla. Geol. Survey Bull. 71, p. 82–83.

Bon Accord conglomerate

Eocene: Trinidad, British West Indies.

H. G. Kugler and others, [1939], Geological conference in Trinidad; notes on the excursions: Petroleum Assoc. Trinidad, p. 9.

H. H. Renz, 1942, 8th Am. Sci. Cong. Proc., v. 4, p. 541.

Bon Accord formation

Lower Cretaceous: Trinidad, British West Indies.

H. G. Kugler, 1950, Asociación Venezolana de Geología y Petróleo Bol., tomo 2, no. 1, p. 48 (correlation chart).

Bonita Park formation

Cenozoic: Arizona.

H. E. Enlows, 1955, Geol. Soc. America Bull., v. 66, no. 10, p. 1217.

Bonnetian age and stage

Middle Cambrian: North America.

B. F. Howell and J. F. Mason, 1938, Jour. Paleontology, v. 12, no. 3, p. 297.

Bonneville formation

Pleistocene and Recent: Utah.

K. C. Bullock, 1951, Utah Geol. Mineralog. Survey Bull. 41, p. 21.

C. B. Hunt, H. D. Varness, and H. E. Thomas, 1953, U. S. Geol. Survey Prof. Paper 257–A, p. 20–21.

Bonsall tonalite

Upper Cretaceous: California.

C. S. Hurlbut, Jr., 1935, Am. Mineralogist, v. 20, no. 9, p. 611–613.

Bontour formation

Upper Cretaceous: Trinidad, British West Indies.

G. D. Harris *in* G. A. Waring, 1926, Johns Hopkins Univ. Studies in Geology, no. 7, p. 97.

H. G. Kugler, 1953, Vereinigung Schweizer Petroleum Geologen u. Ingenieure Bull., v. 20, no. 59, p. 38.

Bony Falls member (of Black River formation)
Middle Ordovician: Michigan.
R. C. Hussey, 1952, Mich. Dept. Conserv. Geol. Survey Div. Pub. 46, Geol. Ser. 39, p. 13–14.

Boone Gap facies (of New Providence formation)
Lower Mississippian: Kentucky.
P. B. Stockdale, 1939, Geol. Soc. America Special Paper 22, p. 119–121.

Boott member (of Littleton formation)
Lower Devonian: New Hampshire.
M. P. Billings and others, 1945, Geologic map and structure sections of the Mt. Washington quadrangle, New Hampshire (1:62,500): N. H. State Plan. Devel. Comm. and Highway Dept.; 1946, Geol. Soc. America Bull., v. 57, no. 3, p. 264–265.

Boquilla formation
Pliocene, upper: Chihuahua, Mexico.
L. C. Pray, 1953, *in* Geological sciences at the California Institute of Technology: Calif. Inst. Technology, p. 32.

Boracho sandstone
Cretaceous (Comanche): Texas.
W. E. Tipton, 1951, *in* W. Tex. Geol. Soc. Guidebook Fall Field Trip, Oct. 26–27, p. 29 (geol. map).

Børglum River limestone
Middle or Upper Ordovician (Champlainian or Cincinnatian): North Greenland.
J. C. Troelsen, 1949, Meddel. om Grønland, bind 149, nr. 2, p. 18-19, pl. 1.

Boring agglomerate
Pliocene, upper, or Pleistocene, lower: Oregon.
R. C. Treasher, 1942, Oreg. State Dept. Geology and Mineral Industries G. M. I. Short Paper 7, p. 10.

Boring lava
Pliocene, upper, or Pleistocene, lower: Oregon.
R. C. Treasher, 1942, Oreg. State Dept. Geology and Mineral Industries G. M. I. Short Paper 7, p. 10.

Borradaile member (of Mannville formation)
Lower Cretaceous: Alberta, Canada (subsurface).
A. W. Nauss, 1945, Am. Assoc. Petroleum Geologists Bull., v. 29, no. 11, p. 1615.

Borrego formation
Pliocene, upper: California.
L. A. Tarbet and W. H. Holman, 1944, (abs.) Am. Assoc. Petroleum Geologists Bull., v. 28, no. 12, p. 1782.

Bose gravel
Pleistocene to Recent: British Columbia, Canada.
J. E. Armstrong and W. C. Brown, 1953, Canada Geol. Survey Water Supply Paper 322, p. 11.

Boskydell marine horizon (in Pottsville formation)
Pennsylvanian: Illinois.
H. R. Wanless, 1939, Geol. Soc. America Special Paper 17, p. 34.

Bossier formation
Upper Jurassic (Cotton Valley group) : Subsurface in Louisiana and Texas.
F. M. Swain, 1944, Am. Assoc. Petroleum Geologists Bull., v. 28, no. 5, p. 582–594.

Boston glacial substage
Pleistocene (Wisconsin) : Massachusetts.
S. S. Judson, Jr., 1949, Peabody Foundation for Archaeology Papers, v. 4, no. 1, p. 12–23.

Boswarlis beds
Mississippian (Meramecian) : Newfoundland, Canada.
J. M. Weller and others, 1948, Geol. Soc. America Bull., v. 59, no. 2, Chart 5, col. 116.

Botetourt limestone member (of Edinburg formation)
Middle Ordovician: Virginia.
B. N. Cooper and G. A. Cooper, 1946, Geol. Soc. America Bull., v. 57, no. 1, p. 80.

Botwood formation
Silurian: Newfoundland, Canada.
W. H. Twenhofel and R. R. Shrock, 1937, Geol. Soc. America Bull., v. 48, no. 12, p. 1749, 1767.

Boucher formation
Middle Cambrian: Vermont.
Phillip Fowler, 1950, Vt. Geol. Survey Bull. 2, pl. 1.

Boucher tongue
Lower and/or Middle Cambrian: Arizona.
E. D. McKee, 1945, Carnegie Inst. Washington Pub. 563, p. 14, 29, 101–102.

Boulder Wash group
Precambrian or Tertiary: Nevada.
C. R. Longwell, 1936, Geol. Soc. America Bull., v. 47, no. 9, p. 1407–1409.

Bouldin member (of Lake Waco formation)
Cretaceous (Gulf) : Texas.
W. S. Adkins and F. E. Lozo *in* F. E. Lozo, 1951, Fondren Sci. Series, no. 4, p. 120–122, fig. 25.

Boulter gabbro
Precambrian: Ontario, Canada.
D. F. Hewitt, 1955, Ontario Dept. Mines Ann. Rept., v. 63, pt. 6, p. 12.

Boulter granite
Precambrian: Ontario, Canada.
D. F. Hewitt, 1955, Ontario Dept. Mines Ann. Rept., v. 63, pt. 6, p. 15.

Bourg du Marin limestone
Oligocene: Martinique, French West Indies.
Alfred Senn, 1940, Am. Assoc. Petroleum Geologists Bull., v. 24, no. 9, p. 1581, 1596.

Bourinot group
Middle Cambrian: Nova Scotia, Canada.
R. D. Hutchinson, 1952, Canada Geol. Survey Mem. 263, p. 8–10.

Bourlamaque granodiorite
Precambrian: Quebec, Canada.
H. C. Cooke, W. F. James, and J. B. Mawdsley, 1931, Canada Geol. Survey Mem. 166, p. 133.

Bowen formation
Middle Ordovician: Virginia.
B. N. Cooper and C. E. Prouty, 1943, Geol. Soc. America Bull., v. 54, no. 6, p. 876–877.

Bowen Island group
Triassic(?) and/or older: British Columbia, Canada.
J. E. Armstrong, 1954, Canada Geol. Survey Paper 53–28, p. 1–2.

Bowes member (of Piper formation)
Middle Jurassic: Montana (subsurface and surface).
J. W. Nordquist, 1955, Billings Geol. Soc. Guidebook 6th Ann. Field Conf., p. 97, 102–103.

Bow Lake flow (in Yellowknife group)
Precambrian: Northwest Territories (Mackenzie), Canada.
C. E. G. Brown and A. S. Dadson, 1953, Canadian Inst. Mining and Metallurgy Trans., v. 56, p. 70–71.

Bowmanstown chert
Middle Devonian: Pennsylvania.
F. M. Swartz *in* Bradford Willard, F. M. Swartz, and A. B. Cleaves, 1939, Pa. Geol. Survey, ser. 4, Bull. G 19, p. 52, fig. 17.

Bowser member (of Tuxedni formation)
Middle Jurassic: Alaska.
C. E. Kirschner and D. L. Minard, 1948, U. S. Geol. Survey Oil and Gas Inv. Prelim. Map 95 [1949].

Box member (of Percha shale formation)
Upper Devonian: New Mexico.
F. V. Stevenson, 1944, Dallas Digest Joint Ann. Meeting, p. 95; 1945, Jour. Geology, v. 53, no. 4, p. 241–244.

Box Butte member (of Sheep Creek formation)
Miocene: Nebraska.
R. C. Cady, 1940, Am. Jour. Sci., v. 238, no. 9, p. 663–667.

Box Canyon member (of Mutual quartzite)
Precambrian: Utah.
N. C. Williams, 1953, Am. Assoc. Petroleum Geologists Bull., v. 37, no. 12, p. 2737, 2738.

Box Springs complex
Precambrian(?): California.
W. J. Miller, 1946, Geol. Soc. America Bull., v. 57, no. 5, p. 477.

Boysen formation
Upper Cambrian: Wyoming.
Charles Deiss, 1938, Geol. Soc. America Bull., v. 49, no. 7, p. 1104.

Brackett member (of Stowe formation)
Lower Cambrian(?): Vermont.
P. H. Osberg, 1952, Vt. Geol. Survey Bull. 5, p. 66.

Bradley granodiorite
Upper Jurassic: California.
W. J. Miller, 1944, Calif. Jour. Mines and Geology, v. 40, No. 1, p. 52–59.

Bradshaw formation
Triassic and/or older: British Columbia, Canada.
H. S. Bostock and D. A. McNaughton, 1940, Canada Geol. Survey Map 568A.

Brady soil
Pleistocene (Wisconsin): Nebraska.
C. B. Schultz and T. M. Stout, 1948, Geol. Soc. America Bull., v. 59, no. 6, p. 570.

Bradyan interglacial substage
Pleistocene (Wisconsin): North America.
A. B. Leonard, 1951, Jour. Geology, v. 59, no. 4, p. 325.

Bralorne intrusives
Jurassic(?): British Columbia, Canada.
C. E. Cairnes, 1937, Canada Geol. Survey Mem. 213, p. 21–27.

Brandt sandstone (in Kingsley member of Wellsburg monothem)
Upper Devonian (Chautauquan): Pennsylvania.
K. E. Caster, 1938, Jour. Paleontology, v. 12, no. 1, p. 45 (fig. 7), 47.

Bransford sandstone member (of Gassaway formation)
Lower Mississippian: Tennessee and Alabama.
Guy Campbell, 1946, Geol. Soc. America Bull., v. 57, no. 9, p. 884, 885.

Brassier-Dollard biotite granite
Precambrian (Archean): Quebec, Canada.
A. S. MacLaren, 1950, Canada Geol. Survey Map 997A.

Brasso clay (in Manzanilla formation)
Miocene, middle: Trinidad, British West Indies.
G. A. Waring, 1926, Johns Hopkins Univ. Studies in Geology, no. 7, p. 69, 71, pl. 6 (geol. map).

Brasso conglomerate member (of Manzanilla formation)
Miocene, middle: Trinidad, British West Indies.
G. A. Waring, 1926, Johns Hopkins Univ. Studies in Geology, no. 7, p. 69–70.

Brasso formation
Oligocene, middle, to Miocene, middle: Trinidad, British West Indies.
A. B. Thompson, 1925, Oil field exploration and development, v. 1, Oil field principles: New York, D. VanNostrand Co., p. 389, 391.
H. H. Renz, 1942, 8th Am. Sci. Cong., v. 4, p. 545–549, 554–557.

Brawley formation
Pleistocene: California.
T. W. Dibblee, Jr., 1954, Calif. Dept. Nat. Res., Div. Mines Bull. 170, chap. 2, p. 24.

Breakheart basalt
Ordovician: Newfoundland, Canada.
G. R. Heyl, 1936, Newfoundland Geol. Survey Bull. 3, p. 8.

Breault member (of Nicolet River formation)
Ordovician: Quebec, Canada.
T. H. Clark, 1947, Quebec Dept. Mines Prelim. Rept. 204, p. 9, 12.

Breeches Lake granite
Devonian or younger: Quebec, Canada.
T. H. Clark *in* H. C. Cooke and T. H. Clark, 1937, Canada Geol. Survey Mem. 211, p. 76.

Breezy Hill limestone member (of Cherokee shale in Kansas; of Senora formation in Oklahoma)
Pennsylvania: Kansas and Oklahoma.
W. G. Pierce and W. H. Courtier, 1937, Kans. Geol. Soc. Guidebook 11th Ann. Field Conf., p. 17; 1938, Kans. State Geol. Survey Bull. 24, p. 33, 35.

Breien member (of Hell Creek formation)
Cretaceous: North Dakota.
W. M. Laird and R. H. Mitchell, 1942, N. Dak. Geol. Survey Bull. 14, p. 14–15.

Breitenbush series
Eocene(?) to Oligocene: California.
T. P. Thayer, 1936, Jour. Geology, v. 44, no. 6, p. 704, 705, 709 (fig. 2), 713 (fig. 3).

Bremo quartzite
Silurian or younger: Virginia.
G. W. Stose and A. J. Stose, 1948, Am. Jour. Sci., v. 246, no. 7, p. 397–401, 408.

Brent Island limestone
Ordovician(?): Newfoundland, Canada.
J. R. Cooper, 1937, Newfoundland Geol. Survey Bull. 9, p. 6.

Brew group
Lower Cretaceous: British Columbia, Canada.
S. Duffell and K. C. McTaggart, 1952, Canada Geol. Survey Mem. 262, p. 34–35.

Brian Boru formation
Lower Cretaceous(?): British Columbia, Canada.
R. E. Sommers, 1955, British Columbia Bur. Mines Ann. Rept. 1954, p. A89–A90.

Brian Head formation
Miocene(?): Utah.
H. E. Gregory, 1944, Am. Jour. Sci., v. 242, no. 11, p. 591–597.

Briarcliff dolomite
Upper Cambrian: New York.
E. B. Knopf, 1946, (abs.) Geol. Soc. America Bull., v. 57, no. 12, pt. 2. 1212.

Brickeys member (of Mifflin formation)
Middle Ordovician: Illinois.
J. S. Templeton and H. B. Willman, 1952, Tri-State Geol. Soc. Guidebook 16th Ann. Field Conf., figs. 3, 10, 16.

Bridgerian age
Eocene: North America.
H. E. Wood, 2d, and others, 1941, Geol. Soc. America Bull., v. 52, no. 1, p. 10, pl. 1.

Bridgewater conglomerate
Pleistocene: Nova Scotia, Canada.
J. W. Goldthwaite, 1924, Canada Geol. Survey Mem. 140, p. 101–102.

Bridport dolomite
Lower Ordovician (Beekmantownian): Vermont.
W. M. Cady, 1945, Geol. Soc. America Bull., v. 56, no. 5, p. 524, 545–548.

Bridwell formation
Pliocene, middle: Texas.
G. L. Evans, 1949, W. Tex. Geol. Soc. Guidebook Field Trip 2, Nov. 6–9, p. 6–7.

Brier Hill sandstone
Permian: Pennsylvania.
W. O. Hickok, IV, and F. T. Moyer, 1940, Pa. Geol. Survey, ser 4, Bull. C 26, p. 152.

Brigand Hill limestone
Miocene, lower: Trinidad, British West Indies.
H. H. Suter, 1951, Colonial Geology and Min. Res., v. 2, no. 3, p. 204 (table 12) [1952].

Briggs formation

Permian: Texas.

C. C. Albritton, 1937, Jour. Paleontology, v. 11, no. 1, p. 19; 1938, Geol. Soc. America Bull., v. 49, no. 12, pt. 1, p. 1753–1757, pl. 1.

Brigham Hill graywacke

Lower Cambrian: Vermont.

E. C. Jacobs, 1935, (abs.) Geol. Soc. America Proc. 1934, p. 85; [1937], Vt. State Geologist 20th Rept., p. 100–101.

Brightseat formation

Paleocene: Maryland and District of Columbia.

R. R. Bennett and G. G. Collins, 1952, Washington Acad. Sci. Jour., v. 42, no. 4, p. 114–116.

Brimstone Hill limestone

Pleistocene, lower: St. Kitts, British West Indies.

K. W. Earle, [1924?], Reports on the geology of St. Kitts–Nevis, British West Indies and the geology of Anguilla, British West Indies: London, The Crown Agents for the Colonies, p. 13.

Brimstone Hill tuffs

Pleistocene, lower: St. Kitts, British West Indies.

K. W. Earle, [1924?], Reports on the geology of St. Kitts–Nevis, British West Indies and the geology of Anguilla, British West Indies: London, The Crown Agents for the Colonies, p. 7, 11.

Brindson Lake granite

Precambrian: Saskatchewan, Canada.

M. L. Miller, 1951, Saskatchewan Geol. Survey (Precambrian Geology Ser.) Rept. 3, p. 17–18.

Brisco glacial substage

Pleistocene (Wisconsin): Colorado.

Q. D. Singewald, 1950, U. S. Geol. Survey Bull., 955–D, p. 120 [1951].

Brister member (of Big Saline formation)

Lower Pennsylvanian: Texas.

F. B. Plummer, 1947, Jour. Geology, v. 55, no. 3, pt. 2, p. 196, 198.

Brister Bluff lentil (in Big Saline formation)

See Brister member (of Big Saline formation).

Briton member (of Mfflin formation)

Middle Ordovician: Illinois.

J. S. Templeton and H. B. Willman, 1952, Tri-State Geol. Soc. Guidebook 16th Ann. Field Conf., figs. 3, 10, 16.

Broadalbin passage beds

Upper Cambrian or Lower Ordovician (Cambrovician): New York.

W. J. Miller, 1911, N. Y. State Mus. Bull. 153, p. 29.

A. W. Grabau, 1936, Paleozoic formations in the light of the pulsation theory, v. 2, Cambrovician pulsation, pt. 1, Caledonian and St. Lawrence geosynclines: Peiping, China, University Press, Natl. Univ. Peking, p. 325–327, 350.

Broad Cove formation

Pennsylvanian: Nova Scotia, Canada.

G. W. H. Norman, 1935, Canada Geol. Survey Mem. 177, p. 48–49.

Broadwater formation

Pleistocene, lower: Nebraska.

C. B. Schultz and T. M. Stout, 1945, Am. Jour. Sci., v. 243, no. 5, p. 232–236.

Brock group
Precambrian: Northwest Territories (Mackenzie), Canada.
J. D. Bateman, 1952, Geol. Assoc. Canada Proc., v. 5, p. 101.

Brocklebank granite
Upper Devonian (?): Vermont.
C. G. Doll, [1945?], Vt. State Geologist 24th Rept., p. 20–21.

Brockville beds
Cambrian and Ordovician: Ontario, Canada.
A. W. Grabau, 1936, Paleozoic formations in the light of the pulsation theory, v. 2, Cambrovician pulsation, pt. 1, Caledonian and St. Lawrence geosynclines: Peiping, China, University Press, Natl. Univ. Peking, p. 407, 424, 425, 550, 551.

Brodhead formation
Lower Mississippian: Kentucky.
P. B. Stockdale, 1939, Geol. Soc. America Special Paper 22, p. 135–191.

Brodhead member (of Marcellus formation)
Devonian: Pennsylvania.
Bradford Willard, 1938, Pa. Geol. Survey, ser. 4, Bull. G 11, p. 17.

Brodhead Creek member (of Marcellus formation)
See Brodhead member (of Marcellus formation).

Brodhead Creek member (of Tully formation)
Upper Devonian: Pennsylvania.
R. E. Stevenson and W. S. Skinner, 1949, Pa. Acad. Sci. Proc., v. 23, p. 30–31.

Broken Jug limestone
Lower Cretaceous (Bisbee group): New Mexico.
S. G. Lasky, 1938, Am. Assoc. Petroleum Geologists Bull., v. 22, no. 5, p. 531, fig. 2.

Bronco volcanics
Cretaceous or lower Tertiary: Arizona.
James Gilluly, 1945, Am. Jour. Sci., v. 243, no. 12, p. 645, 648.

Brønland Fjord dolomite
Cambrian (?): North Greenland.
J. C. Troelsen, 1949, Meddel. om Grønland, bind 149, nr. 2, p. 13–15, pl. 1.

Brook lentil (in Big Saline formation)
See Brook Ranch member (of Big Saline formation).

Brook Ranch member (of Big Saline formation)
Lower Pennsylvanian: Texas.
F. B. Plummer, 1947, Jour. Geology, v. 55, no. 3, pt. 2, p. 196, 197, 198.

Brooks Lake glaciation
Pleistocene (Wisconsin): Alaska.
E. H. Muller *in* T. L. Péwé and others, 1953, U. S. Geol. Survey Circ. 289, p. 2, 13 (table 1).

Broom Creek group
Pennsylvanian or Permian: Wyoming, Colorado, and South Dakota.
G. E. Condra, E. C. Reed, and O. J. Scherer, 1940, Nebr. Geol. Survey Bull. 13, p. 2, 4, 19, 45.

Browne glaciation
Pleistocene (pre-Wisconsin): Alaska.
Clyde Wahrhaftig *in* T. L. Péwé and others, 1953, U. S. Geol. Survey Circ. 289, p. 7, 13 (table 1).

Browning sandstone (in Carbondale formation)
Pennsylvanian: Illinois.
H. R. Wanless, 1939, Geol. Soc. America Special Paper 17, p. 26, 78.

Brownridge sediments
Precambrian (Keewatin): Ontario, Canada.
Jack Satterly, 1943, Ontario Dept. Mines Ann. Rept., v. 50, pt. 2, p. 27–28.

Brownridge volcanics
Precambrian (Keewatin): Ontario, Canada.
Jack Satterly, 1943, Ontario Dept. Mines Ann. Rept., v. 50, pt. 2, p. 28–29.

Browns Point formation
Miocene: Washington.
S. L. Glover, 1940, (abs.) Geol. Soc. America Bull., v. 51, no. 12, pt. 2, p. 2022.

Bruja Island dolerite
Miocene, lower: Panama Canal Zone.
[T. F. Thompson], 1943, Panama Canal, Special Eng. Div., 3d Locks Proj., pt. 2, chap. 3, p. 26.
S. M. Jones, 1950, Geol. Soc. America Bull., v. 61, no. 9, p. 901, table 2.

Brush Hollow limestone
Cenozoic (probably Quaternary): Colorado.
W. F. Tanner, [1955], Okla. Acad. Sci. Proc., v. 35 (1954), p. 95.

Brushy Canyon formation
Permian (Guadalupe series): Texas.
P. B. King *in* R. K. DeFord and E. R. Lloyd, 1940, Am. Assoc. Petroleum Geologists Bull., v. 24, no. 1, p. 8.
P. B. King, 1942, Am. Assoc. Petroleum Geologists Bull., v. 26, no. 4, p. 577–579, pl. 2.

Brussels formation
Pleistocene (Sangamon? and Illinoian): Illinois and Missouri.
W. W. Rubey, 1952, U. S. Geol. Survey Prof. Paper 218, p. 82–87.

Bruton formation
Pennsylvanian (Virgil): New Mexico.
M. L. Thompson, 1942, N. Mex. State Bur. Mines Min. Res. Bull. 17, p. 27, 79–82.

Bryan sandstone
Eocene (Claiborne): Texas.
H. B. Stenzel, 1939, Tex. Univ. Bur. Econ. Geology Pub. 3945, pt. 2, p. 853 [1940].
A. A. L. Mathews, 1950, Tex. Eng. Expt. Sta. Research Rept. 14, p. 3, geol. map.

Bryantsville breccia (in Levias member of Ste. Genevieve limestone)
Mississippian: Indiana.
J. B. Patton, 1949, Ind. Dept. Conserv. Div. Geology Progress Rept. 3, p. 8.
C. A. Malott, 1952, Stratigraphy of the Ste. Genevieve and Chester formations of southern Indiana: Ann Arbor, Mich., The Edwards Letter Shop, p. 9.

Bucaro formation
See Bucarú formation.

Bucarú formation.
Eocene: Panama.
Karl Sapper, 1937, Mittelamerika, Handbuch der regionalen Geologie: Heidelberg. Band 8, Abt. 4a, Heft 29, p. 134 (correlation chart).
A. A. Olsson, 1942, 8th Am. Sci. Cong. Proc., v. 4, p. 235–236.

Buck Hill volcanic series
Eocene to Miocene(?): Texas.
S. S. Goldich and C. L. Seward, 1948, W. Tex. Geol. Soc. [Guidebook] Fall Field Trip, p. 13–18.

Buckhorn asphalt
Pennsylvanian: Oklahoma.
H. J. Smith, 1938, The cephalopod fauna of the Buckhorn asphalt: Dept. Geology and Paleontology, Chicago Univ., p. 1, 3.

Buckhorn conglomerate
Lower Cretaceous(?): Utah.
W. L. Stokes, 1944, Geol. Soc. America Bull., v. 55, no. 8, p. 958, 965–966.

Buckhorn member (of Dunleith formation)
Middle Ordovician: Illinois.
J. S. Templeton and H. B. Willman, 1952, Tri-State Geol. Soc. Guidebook 16th Ann. Field Conf., figs. 3, 9.

†Buckingham marl
Miocene, upper: Florida.
W. C. Mansfield, 1938, (abs.) Geol. Soc. America Bull., v. 49, no. 12, pt. 2, p. 1916; 1939, Fla. Dept. Conserv. Geol. Bull. 18, p. 11–16.

Buckinghorse formation
Lower Cretaceous: British Columbia, Canada.
C. O. Hage, 1944, Canada Geol. Survey Paper 44–30, p. 9–11.

Buckner formation in Mississippi
Buckner member (of Haynesville formation) in Arkansas, Louisiana, and Texas
Upper Jurassic: Subsurface in Arkansas, Louisiana, Mississippi, and Texas.
H. K. Shearer, 1938, Am. Assoc. Petroleum Geologists Bull., v. 22, no. 6, p. 724.
W. B. Weeks, 1938, Am. Assoc. Petroleum Geologists Bull., v. 22, no. 8, p. 961, 966.

Buck Ridge schist
Age not stated: North Carolina.
C. E. Hunter and P. W. Mattocks, 1936, TVA Div. Geology Bull. 4, p. 14.

Bucks granodiorite
Late Jurassic(?): California.
Anna Hietanen, 1951, Geol. Soc. American Bull., v. 62, no. 6, pl. 1.

Buckskin schist
Pre-Ordovician(?): Washington.
E. A. Youngberg and T. L. Wilson, 1952, Econ. Geology, v. 47, no. 1, p. 3.

Buckskinian series
Cretaceous (Mid-Cretacic): Kansas.
[C. R.] Keyes, 1941, Pan-Am. Geologist, v. 76, no. 4, p. 304 (chart).

Buck Spring formation
Cambrian: Wyoming.
A. B. Shaw, 1954, Wyo. Geol. Assoc. Guidebook 9th Ann. Field Conf., chart 2.

Buelna formation
Lower Cambrian: Sonora, Mexico.
Christina Lochman, 1948, Jour. Paleontology, v. 22, no. 4, p. 455.
G. A. Cooper and A. R. V. Arellano, 1952, Smithsonian Misc. Coll., v. 119, no. 1, p. 4–5.

Bufa rhyolite series
Tertiary, lower: Chihuahua, Mexico.
R. T. Donald, 1935, Eng. and Mining Jour., v. 136, no. 12, p. 614.

Buffalo Hump formation
Precambrian (Beltian): Washington.
Ian Campbell and J. S. Loofbourow, Jr., 1946, (abs.) Geol. Soc. America Bull., v. 57, no. 12, pt. 2, p. 1250.

Buit Lake granite
Precambrian (post-Grenville): Quebec, Canada.
W. W. Longley, 1946, Quebec Dept. Mines Geol. Rept. 24, p. 16–17.

Buldir volcanics
Quaternary(?): Alaska (Aleutian Islands).
R. R. Coats, 1953, U. S. Geol. Survey Bull. 989–A, p. 8, 13–14.

Bulger Lake granite
Precambrian: Manitoba, Canada.
G. C. Milligan and W. F. Take, 1954, Manitoba Dept. Mines and Nat. Res. Mines Br. Pub. 53–1, p. 40–41.

Bulitan stage
Paleocene: California.
V. S. Mallory, 1953, (abs.) Jour. Paleontology, v. 27, no. 6, p. 903.

Bulitian stage.
See Bulitan stage.

Bull Arm felsite member (of Musgravetown group)
Precambrian (upper Proterozoic) or Lower Cambrian: Newfoundland, Canada.
A. O. Hayes, 1948, Newfoundland Geol. Survey Bull. 32, p. 16.

Bull Creek sand (in Hell Creek member of Lance formation)
Cretaceous: South Dakota.
E. P. Rothrock, 1937, S. Dak. State Geol. Survey Rept. Inv. 28, p. 10.

Bull Creek sandy limestone (in Greenhorn formation)
Upper Cretaceous: Montana and Wyoming.
M. N. Bramlette and W. W. Rubey *in* R. C. Moore, 1949, Geol. Soc. America Mem. 39, p. 27 (fig. 18).

Bull-Domingo agglomerate
Age not stated: Colorado.
W. C. Peters, 1953, Econ. Geology, v. 48, no. 7, p. 599–600.
D. L. Reynolds, 1954, Am. Jour. Sci., v. 252, no. 10, p. 587.

Bullhead group
Lower Cretaceous: British Columbia, Canada.
R. T. D. Wickenden and George Shaw, 1943, Canada Geol. Survey Paper 43–13, p. 2–3.

Bullington member (of Magdalena formation)
Pennsylvania: New Mexico.
L. L. Ray and J. F. Smith, Jr., 1941, Geol. Soc. America Bull., v. 52, no. 2, p. 184.

Bullion Canyon volcanics
Tertiary: Utah.
Eugene Callaghan, 1939, Am. Geophys. Union Trans. 20th Ann. Meeting, pt. 3, p. 441–446.

Bull Mountain andesitic series
Tertiary: Arizona.
B. E. Thomas, 1949, Econ. Geology, v. 44, no. 8, p. 667–668.

Bull Shoals Mountain chert bed (in Powell dolomite)
Lower Ordovician: Arkansas.
J. S. Cullison, 1944, Mo. Univ. School Mines and Metallurgy Bull., Tech. Ser., v. 15, no. 2, p. 39.

Bumpnose limestone member (of Crystal River limestone)
Eocene (Jackson): Florida.
W. E. Moore, 1955, Fla. Geol. Survey Bull. 37, p. 36–42.

Bunje cyclothem
Pennsylvanian: Illinois.
H. R. Wanless, 1955, Am. Assoc. Petroleum Geologists Bull., v. 39, no. 9, p. 1764 (table 2).

Burchards limestone
Middle Ordovician (Chazyan): Vermont.
Marshall Kay and W. M. Cady, 1947, Science, v. 105, no. 2736, p. 601.

Burica sandstones
Miocene, upper, or Pliocene, lower: Panama and Costa Rica.
R. A. Terry, 1941, Geog. Review, v. 31, no. 3, fig. 5.
A. A. Olsson, 1942, Bull. Am. Paleontology, v. 27, no. 106, p. 173–175 (21–23).

Burin series
Ordovician(?): Newfoundland, Canada.
R. E. Van Alstine, 1948, Newfoundland Geol. Survey Bull. 23, p. 13.

Burkes Garden limestone member (of Benbolt limestone)
Middle Ordovician: Virginia.
B. N. Cooper and C. E. Prouty, 1943, Geol. Soc. America Bull., v. 54, no. 6, p. 869–871.

Burleigh granite gneiss
Precambrian: Ontario, Canada.
Jack Satterly and D. F. Hewitt, 1955, Ontario Dept. Mines Geol. Circ. 2, p. 4.

Burlington granite
Devonian: Newfoundland, Canada.
D. M. Baird, 1951, Canada Geol. Survey Paper 51–21, p. 45.

Burnais formation
Silurian and/or Middle Devonian: British Columbia, Canada.
G. G. L. Henderson, 1954, British Columbia Dept. Mines Bull. 35, p. 25–27.

Burnam limestone
Upper Ordovician: Texas.
V. E. Barnes, P. E. Cloud, Jr., and Helen Duncan, 1953, Am. Assoc. Petroleum Geologists Bull., v. 37, no. 5, p. 1030–1043.

Burnt limestone
Lower Cretaceous (Comanchean): Texas.
Charles Schuchert, [1943], Stratigraphy of the eastern and central United States: New York, John Wiley and Sons, p. 957.

Burnt Canyon breccia
Quaternary: California.
C. R. Allen, 1954, Calif. Dept. Nat. Res., Div. Mines Bull. 170, map sheet 20.

Burnt Canyon limestone
Middle Cambrian: Nevada and Utah.
H. E. Wheeler, 1948, Nev. Univ. Bull., Geology and Mining Ser., no. 47, p. 36–38, fig. 5.

Burnt Gulch conglomerate
Miocene or Pliocene: Wyoming.
E. B. Branson and C. C. Branson, 1941, Am. Assoc. Petroleum Geologists Bull., v. 25, no. 1, p. 143.

Burnt Lava flow
Recent: California.
M. A. Peacock, 1931, Geog. Review, v. 21, no. 2, p. 269–270.
H. A. Powers, 1932, Am. Mineralogist, v. 17, no. 7, p. 272, 275, pl. 1.

Burrego formation
Pennsylvanian (Missouri series): New Mexico.
M. L. Thompson, 1942, N. Mex. State Bur. Mines Min. Res. Bull. 17, p. 27, 65.

Burro Canyon formation
Lower Cretaceous: Colorado, Arizona, and Utah.
W. L. Stokes and D. A. Phoenix, 1948, U. S. Geol. Survey Oil and Gas Inv. Prelim. Map 93.

Burroughs beds
Pennsylvanian: Illinois.
C. L. Cooper, 1946, Ill. State Geol. Survey Bull. 70, p. 12 (footnote), 13.
J. R. Ball, 1952, Ill. State Geol. Survey Bull, 77, p. 37–38.

Burrows dolomite
Middle Cambrian (Albertan): Nevada.
H. E. Wheeler, 1940, Nev. Univ. Bull., Geology and Mining Ser., no. 34, p. 12, 27–29.

Burrows shale
Middle Cambrian: Nevada.
Charles Deiss, 1937, (abs.) Geol. Soc. America Proc. 1936, p. 274.

Bursum formation
Permian (Wolfcamp age): New Mexico.
R. H. Wilpolt and others, 1946, U. S. Geol. Survey Oil and Gas Inv. Prelim. Map 61.

Burtons Head group
Middle Ordovician(?): Newfoundland, Canada.
G. H. Espenshade, 1937, Newfoundland Geol. Survey Bull. 6, p. 10, 14.

Busby quartzite member (of Langston formation)
Cambrian: Utah and Idaho.
G. B. Maxey, 1955, Dissert. Abs., v. 15, no. 4, p. 558.

Butcherknife basalt
Tertiary or younger: Texas.
S. S. Goldich and M. A. Elms, 1949, Geol. Soc. America Bull., v. 60, no. 7, p. 1165–1168, pl. 1.

Butte Creek beds
Oligocene, upper, or Miocene, lower: Oregon.
W. D. Lowry, 1947, Geol. Soc. Oreg. Country News Letter, v. 13, no. 1, p. 5.

Butterly dolomite
Cambrian (Arbuckle group): Oklahoma.
C. E. Decker, 1939, Geol. Soc. America Bull., v. 50, no. 7, p. 1317–1318, table 1.

Buttermilk Falls limestone
Devonian: Pennsylvania.
Bradford Willard, 1938, Pa. Geol. Survey, ser. 4, Bull. G 11, p. 5, 14, 16.

Butternut shale
Devonian: New York.
G. A. Cooper, 1941, Washington Acad. Sci. Jour., v. 31, no. 5, p. 180–181.

Buttrill Ranch member (of Dagger Flat formation)
Upper Cambrian: Texas.
J. L. Wilson, 1954, Jour. Paleontology, v. 28, no. 3, p. 251, 252.

Butts Ranch shale member (of Panoche group)
Upper Cretaceous: California.
I. F. Wilson, 1943, Calif. Jour. Mines and Geology, v. 39, no. 2, p. 203–204, 226 (fig. 5).

Buzzard Peak conglomerate member (of Topanga formation)
Miocene, middle: California.
A. O. Woodford, T. G. Moran, and J. S. Shelton, 1946, Am. Assoc. Petroleum Geologists Bull., v. 30, no. 4, p. 515, 518–519, 529–531.

Byron schist
Age not stated: Maine.
Kern Jackson, 1953, Maine State Geologist Rept. 1951–1952, p. 54–56.

Caballero formation
Mississippian (Kinderhook): New Mexico.
L. R. Laudon and A. L. Bowsher, 1941, Am. Assoc. Petroleum Geologists Bull., v. 25, no. 12, p. 2116–2117, 2122–2125.

Caballo Blanco rhyolite tuff
Tertiary: New Mexico.
F. J. Kuellmer and others, 1953, *in* N. Mex. Geol. Soc. Guidebook 4th Field Conf., p. 50 (geol. map).

Cabaniss group
Pennsylvanian (Des Moines series): Oklahoma.
M. C. Oakes, 1953, Am. Assoc. Petroleum Geologists Bull., v. 37, no. 6, p. 1525–1526.

Cable Canyon sandstone
Upper Ordovician (Cincinnatian): New Mexico.
V. C. Kelley, 1951, Am. Assoc. Petroleum Geologists Bull., v. 35, no. 10, p. 2201 (table).
V. C. Kelley and Caswell Silver, 1952, N. Mex. Univ. Pubs. in Geology 4, p. 58–59, fig. 4.

Caborca series
Upper Pennsylvanian: Sonora, Mexico.
Charles Schuchert, 1935, Historical geology of the Antillean-Caribbean region: New York, John Wiley and Sons, p. 138.

Cabot group
Precambrian: Newfoundland, Canada.
E. R. Rose, 1950, Canada Geol. Survey Paper (Prelim. Map) 50–24.

Cabresto metaquartzite
Precambrian: New Mexico.
P. F. McKinlay, [1955?], N. Mex. State Bur. Mines Min. Res. Bull. 42, p. 8.

Cacalote sandstone
Pre-Cretaceous: Oaxaca, Mexico.
Tomás Barrera, 1946, Guía geológica de Oaxaca: Mexico, Univ. Nac., Inst. Geología, p. 34, pl. 1.

Cacatro member (of Cipero formation)
Oligocene: Trinidad, British West Indies.
R. M. Stainforth, 1948, Am. Assoc. Petroleum Geologists Bull., v. 32, no. 7, p. 1300–1301.

Cache Lake gabbro
Precambrian: Quebec, Canada.
R. B. Graham, 1951, Quebec Dept. Mines Prelim. Rept. 259, p. 3.

Cachenian stage
Late Cretaceous: California.
P. O. Goudkoff, 1945, Am. Assoc. Petroleum Geologists Bull., v. 29, no. 7, p. 991–993.

Caddo Pool formation
Pennsylvanian (Lampasas): Texas (subsurface).
M. G. Cheney, 1940, Am. Assoc. Petroleum Geologists Bull., v. 24, no. 1, p. 66, 86.

Cadillac granite
Upper Paleozoic: Maine.
G. H. Chadwick, 1938, (abs.) Geol. Soc. America Proc. 1937, p. 73.

Cadillac group
Precambrian: Quebec, Canada.
H. C. Gunning and J. W. Ambrose, 1937, Canadian Inst. Mining and Metallurgy Trans., v. 40, p. 345–346.

Cadotte member (of Peace River formation)
Lower Cretaceous: Alberta, Canada.
F. H. McLearn, 1944, Canada Geol. Survey Paper 44–17, p. 2, fig. 1.

Cahuenga beds
Cretaceous(?): California.
G. J. Neuerburg, 1953, Calif. Dept. Nat. Res., Div. Mines Special Rept. 33, p. 6 (table 1), 19–20, pl. 1.

Caimito formation
Miocene, upper: Dominican Republic.
C. J. Maury, 1931, Science, v. 73, no. 1880, p. 43.

Caimitoan stage
Miocene, upper: Dominican Republic.
C. J. Maury, 1931, Science, v. 73, no. 1880, p. 43.

Cairn formation
Devonian: Alberta, Canada.
D. J. McLaren, 1955, Canada Geol. Survey Bull. 35, p. 17–19.

Calamity formation
Quaternary: Texas.
C. C. Albritton, Jr., and Kirk Bryan, 1938, (abs.) Geol. Soc. America Bull., v. 49, no. 12, p. 1863; 1939, v. 50, no. 9, p. 1434–1440.

Caldwell Canyon volcanics
Tertiary (post-Oligocene?): Wyoming.
J. D. Love, 1939, Geol. Soc. America Special Paper 20, p. 85–86.

Calef member (of Eliot formation)
Paleozoic (probably Ordovician and Silurian): New Hampshire.
Jacob Freedman, 1950, Geol. Soc. America Bull., v. 61, no. 5, p. 456.

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Calico phase (of Amargosa chaos)
Post-Miocene(?): California.
L. F. Noble, 1940, (abs.) Geol. Soc. America Bull., v. 51, no. 12, pt. 2, p. 1936; 1941, v. 52, no. 7, p. 968–972.

Caliente formation
Miocene, middle: California.
T. W. Dibblee, Jr., *in* Chester Stock, 1948, Southern Calif. Acad. Sci. Bull., v. 46, pt. 2, p. 84.

Call sandstone member (of Panoche group)
Upper Cretaceous: California.
I. F. Wilson, 1943, Calif. Jour. Mines and Geology, v. 39, no. 2, p. 202–203, 226 (fig. 5).

Callahan flow
Recent: California.
M. A. Peacock, 1931, Geog. Review, v. 21, no. 2, p. 269–270.
C. A. Anderson, 1941, Calif. Univ. Dept. Geol. Sci. Bull., v. 25, no. 7, p. 370.

Calmar member (of Winterburn formation)
Devonian: Alberta, Canada (subsurface).
D. B. Layer, chm., 1950, Am. Soc. Petroleum Geologists Bull., v. 34, no. 9, p. 1815.

Caloso formation
Mississippian (Kinderhook): New Mexico.
V. C. Kelley and Caswel Silver, 1952, N. Mex. Univ. Pubs. in Geology 4, p. 83, 86–87.
A. K. Armstrong, 1955, N. Mex. State Bur. Mines Min. Res. Circ. 39, p. 3, 32.

Calumet granodiorite
Eocene, lower: Colorado.
C. H. Behre, Jr., E. F. Osborn, and E. H. Rainwater, 1936, Econ. Geology, v. 31, no. 8, p. 786–792.

Calvert ash bed (of Ash Hollow member of Ogallala formation)
Pliocene: Kansas.
J. S. Carey and others, 1952, Kans. State Geol. Survey Bull. 96, pt. 1, p. 9–11, 24–27.

Calvertian substage
Miocene, middle: Central Atlantic Coastal Plain.
D. S. Malkin, 1953, Jour. Paleontology, v. 27, no. 6, p. 767–768.

Camajan breccias (in Habana formation)
Upper Cretaceous (Maestrichtian): Cuba.
H. J. MacGillavry, 1937, Geog. Geol. Meded. (Utrecht Univ.) Physiog.-Geol. Reeks, no. 14, p. 20–21.

Camargo formation
Upper Ordovician (Richmond): Tennessee.
C. W. Wilson, Jr., 1948, Geol. Soc. America Bull., v. 59, no. 8, p. 742.

Camelback formation
Tertiary: Arizona.
D. A. Holm, 1938, Oil Possibilities of Arizona: Ariz. State Land Dept., p. 32–33.

Cameo member (of Price River formation)
Upper Cretaceous: Colorado.
R. G. Young, 1955, Geol. Soc. America Bull., v. 66, no. 2, p. 191.

Cameron beds (of Tolchaco gravels)
Quaternary: Arizona.
Parry Reiche, 1937, Am. Jour. Sci., 5th ser., v. 34, no. 200, p. 131–133.

Cameron Island granite
Precambrian: Saskatchewan, Canada.
D. A. W. Blake, 1951, Canada Geol. Survey Paper 51–7, p. 6.

Camino Cielo sandstone member (of Juncal formation)
Eocene, middle: California.
B. M. Page, J. G. Marks, and G. W. Walker, 1951, Am. Assoc. Petroleum Geologists Bull., v. 35, no. 8, p. 1751–1752.

Camp member (of Denmark formation)
Middle Ordovician (Trentonian): New York.
P. A. Chenoweth, 1952, Geol. Soc. America Bull., v. 63, no. 6, p. 530.

Campana diabase and gabbro
Upper Mesozoic or Tertiary, lower: Sonora, Mexico.
W. G. Valentine, 1936, Geol. Soc. America Bull., v. 47, no. 1, p. 81–82.

Campanuladal sandstones and limestones
Age unknown: North Greenland.
P. J. Adams and J. W. Cowie, 1953, Meddel. om Grønland, bind 111, nr. 7, p. 9, 10.

Camp Davis formation
Pliocene, lower: Wyoming.
A. J. Eardley and others, 1944, Hoback–Gros Ventre-Teton Field Conference [geologic map]. Privately printed.
Leland Horberg, Vincent Nelson, and Victor Church, 1949, Geol. Soc. America Bull., v. 60, no. 1, p. 187, 190.

Camp Williams unit
Oligocene(?) to Pliocene(?): Utah.
L. W. Slentz, 1955, Utah Geol. Soc. Guidebook 10, p. 24, 26–27.

Canada Head formation
Middle and Upper Ordovician: Newfoundland, Canada.
Frederick Betz, Jr., 1939, Newfoundland Geol. Survey Bull. 16, p. 22–23.

Cañas gypsum member (of Yeso formation)
Permian: New Mexico.
C. E. Needham and R. L. Bates, 1943, Geol. Soc. America Bull., v. 54, no. 11, p. 1660.

Cañas Arriba formation
Oligocene, lower: Puerto Rico.
R. C. Mitchell, 1954, Puerto Rico Univ. Agr. Expt. Sta. Tech. Paper 13, p. 36 (table 2), 54.

Candler formation
Paleozoic(?): Virginia.
W. R. Brown, 1951, (abs.) Geol. Soc. America Bull., v. 62, no. 12, pt. 2, p. 1547; 1953, Ky. Geol. Survey, ser. 9, Special Pub. 1, [p. 9] (fig. 1).

Canebrake conglomerate
Pliocene: California.
T. W. Dibblee, Jr., 1954, Calif. Dept. Nat. Res., Div. Mines Bull. 170, chap. 2, p. 23.

Cane Hill member (of Hale formation)
Pennsylvanian: Arkansas.
L. G. Henbest, 1953, Am. Assoc. Petroleum Geologists Bull., v. 37, no. 8, p. 1938–1939.

Canelo redbeds
Cretaceous(?): Arizona.
J. H. Feth, 1948, Am. Assoc. Petroleum Geologists Bull., v. 32, no. 1, p. 83, fig. 1.

Cane Spring formation

Upper Triassic: Nevada.

S. W. Muller, H. G. Ferguson, and R. J. Roberts, 1951, Geology of the Mount Tobin quadrangle, Nevada: U. S. Geol. Survey Geol. Quadrangle Map [GQ 7].

Caney Creek member (of Brodhead formation)

Lower Mississippian: Kentucky.

P. B. Stockdale, 1939, Geol. Soc. America Special Paper 22, p. 159–160.

Caney Point marl member (of White Bluff formation)

Eocene (Jacksonian): Arkansas.

H. S. Puri, 1952, Jour. Paleontology, v. 26, no. 2, p. 202, 209.
L. J. Wilbert, Jr., 1953, Ark. Div. Geology Bull. 19, p. 56–69.

Canímar formation

Miocene, middle: Cuba.

Jorge Brodermann, 1945, Soc. Cubana Ingenieros Rev., v. 42, no. 1, p. 133, chart facing p. 144.
P. J. Bermudez, 1950, Soc. Cubana Historia Nat. Mem., v. 19, no. 3, p. 295–296.

Canisteo shale member (of Perrysburg formation)

Upper Devonian: New York.

J. F. Pepper and Wallace de Witt, Jr., 1951, U. S. Geol. Survey Oil and Gas Inv. Chart OC 45.

Canjilon till

Quaternary: New Mexico.

H. T. U. Smith, 1937, (abs.) Geol. Soc. America Proc. 1936, p. 103; 1938, Jour. Geology, v. 46, no. 7, p. 937, 959.

Cano member (of Mesaverde formation)

Upper Cretaceous: New Mexico.

C. E. Stearns, 1953, Geol. Soc. America Bull., v. 64, no. 4, p. 463, 466, pl. 1.

Canoas siltstone member (of Kreyenhagen shale)

Eocene: California.

B. L. Clark, 1943, Calif. Dept. Nat. Res., Div. Mines Bull. 118, pt. 2, p. 189 [preprint 1941].
J. A. Cushman and S. S. Siegfus, 1942, San Diego Soc. Nat. History Trans., v. 9, no. 34, p. 391.

Canoe Brook formation

Lower Cambrian: Nova Scotia, Canada.

R. D. Hutchinson, 1952, Canada Geol. Survey Mem. 263, p. 39–40.

Cañones andesite

Quaternary: New Mexico.

H. T. U. Smith, 1937, (abs.) Geol. Soc. America Proc. 1936, p. 103; 1938, Jour. Geology, v. 46, no. 7, p. 937, 959.

Canso series

Pennsylvanian: Nova Scotia, Canada.

W. A. Bell, [1938], Canada Geol. Survey Mem. 215, p. 5.

Cantarranas formation

Cretaceous: Honduras.

R. H. Carpenter, 1954, Geol. Soc. America Bull., v. 65, no. 1, p. 27.

Cantinas sandstone
Upper Cretaceous: California.
N. L. Taliaferro, 1943, Calif. Dept. Nat. Res., Div. Mines Bull. 118, pt. 2, p. 132 [preprint 1941].

Canutillo formation
Devonian: Texas.
L. A. Nelson, 1937, Colo. Univ. Studies, v. 25, no. 1, p. 89; 1940, Am. Assoc. Petroleum Geologists Bull., v. 24, no. 1, p. 164.

Canyon basalt
Miocene and/or Pliocene: Wyoming.
A. D. Howard, 1937, Geol. Soc. America Special Paper 6, p. 36–39, 78.

Canyon sandstone (in Fort Creek formation)
Upper Devonian: Northwest Territories (Mackenzie), Canada.
J. S. Stewart, 1945, Canada Geol. Survey Paper 45–29, p. 20.

Canyon sandstone member (of Gething formation)
Lower Cretaceous: British Columbia, Canada.
F. H. McLearn and E. J. W. Irish, 1944, Canada Geol. Survey Paper 44–15, p. 8.

Canyon series (of Eleonore Bay formation)
Precambrian and (?)Lower Cambrian (Greenlandian): Northeast Greenland.
Erdhart Frankl, 1953, Meddel. om Grønland, bind 113, nr. 4, p. 16, 80, 82, 155.

Canyon Fjord formation
Middle Pennsylvanian: Northwest Territories (Ellesmere Island), Canada.
J. C. Troelsen, 1950, Meddel. om Grønland, bind 149, nr. 7, p. 65–66.

Canyon Springs sandstone member (of Sundance formation)
Upper Jurassic: Wyoming and South Dakota.
R. M. Imlay, 1947, Am. Assoc. Petroleum Geologists Bull., v. 31, no. 2, p. 247–251.

Capdevila formation
Eocene, lower: Cuba.
R. H. Palmer, 1938, Field guide to geological excursion in Cuba: Habana, Cuba, Carasa y Cía, p. [16].
P. J. Bermudez, 1950, Soc. Cubana Historia Nat. Mem., v. 19, no. 3, p. 227–229.

Cape limestone
Upper Ordovician: Illinois and Missouri.
A. M. Gutstadt, 1954, Dissert. Abs., v. 14, no. 10, p. 1683.

Cape series
Precambrian: Miquelon Island, French North America.
Edgar Aubert de la Rüe, 1941, Exposé sur la géologie et les gîtes minéraux des Iles Saint-Pierre et Miquelon: St. Pierre, Imp. du Govt., p. 9.

Cape Anguille sandstone
Mississippian: Newfoundland, Canada.
A. O. Hayes and Helgi Johnson, 1938, Newfoundland Geol. Survey Bull. 12, p. 11.

Cape Baird limestone
Ordovician: Northwest Territories (Ellesmere Island), Canada.
J. C. Troelsen, 1950, Meddel. om Grønland, bind 149, nr. 7, p. 59.

Cape Biot formation
Upper Triassic: Northeast Greenland.
Lauge Koch, 1929, Meddel. om Grønland, bind 73, afd. 2, nr. 1, p. 104, 111; nr. 2, p. 249–250.

Cape Brown and Hurry Inlet series
Permian or Lower Triassic: East Greenland.
Otto Nordenskjöld, 1907, Meddel. om Grønland, hefte 28, pt. 5, p. 178–184.

Cape Brule granite
Devonian: Newfoundland, Canada.
D. M. Baird, 1951, Canada Geol. Survey Paper 51–21, p. 49–52.

Cape Bull series
See Kap Bull series.

Cape Calhoun series
Middle and Upper Ordovician (Black River-Richmond): North Greenland.
G. T. Troedsson, 1926, Meddel. om Grønland, bind 71, nr. 1, p. 12, 111–115.

Cape Clay formation
Lower Ordovician (Upper Ozarkian): North Greenland.
Christian Poulsen, 1927, Meddel. om Grønland, bind 70, nr. 2, p. 245, 341–342.

Cape Columbia group
Precambrian or Paleozoic: Northwest Territories (Ellesmere Island). Canada.
R. G. Blackadar, 1954, Canada Geol. Survey Paper 53–10, p. 8, 9.

Cape Dalton formation
Eocene: East Greenland.
Lauge Koch, 1929, Meddel. om Grønland, bind 73, afd. 2, nr. 2, p. 262.

Cape Edward Holm complex
Tertiary: Southeast Greenland.
L. R. Wager and W. A. Deer *in* L. R. Wager, 1937, Geog. Jour., v. 90, no. 5, p. 416.
L. R. Wager, 1947, Meddel. om Grønland, bind 134, nr. 5, p. 41–44, 46, pl. 6.

Cape Fear coquina
Pleistocene: North Carolina.
B. W. Wells, 1944, Elisha Mitchell Sci. Soc. Jour., v. 60, no. 2, p. 132.

Cape Fletcher series
Paleozoic: Northeast Greenland.
Otto Nordenskjöld, 1907, Meddel. om Grønland, hefte 28, pt. 5, p. 184–185, 196–208.

Cape Franklin conglomerate
See Kap Franklin conglomerate.

Cape Frederick VII formation
Cambrian (Lower Ozarkian?): North Greenland.
Christian Poulsen, 1927, Meddel. om Grønland, bind 70, nr. 2, p. 244, 341.

Cape Graah formation
Devonian: Northeast Greenland.
Lauge Koch, 1929, Meddel. om Grønland, bind 73, afd. 2, nr. 2, p. 242–243.

Cape Greg gneisses
Lower Paleozoic (Caledonian?): Northeast Greenland.
E. H. Kranck, 1935, Meddel. om Grønland, bind 95, nr. 7, p. 48–57.

Cape Gustav Holm series
See Kap Gustav Holm series.

Cape Hamburg formation
Lower Cretaceous (Neocomian) : Northeast Greenland.
Lauge Koch, 1929, Meddel. om Grønland, bind 73, afd. 2, nr. 2, p. 256–257.

Cape Ingersoll dolomite
Precambrian or Cambrian (Eo-Cambrian) : North Greenland, and Northwest Territories (Ellesmere Island), Canada.
J. C. Troelsen, 1950, Meddel. om Grønland, bind 149, nr. 7, p. 35–37.

Cape Kent formation
Lower Cambrian : North Greenland.
Christian Poulsen, 1927, Meddel. om Grønland, bind 70, nr. 2, p. 242, 339–340.

Cape Kolthoff series
See Kap Kolthoff series.

Cape Leiper dolomite
Precambrian or Cambrian (Eo-Cambrian) : North Greenland, and Northwest Territories (Ellesmere Island), Canada.
J. C. Troelsen, 1950, Meddel. om Grønland, bind 149, nr. 7, p. 35.

Cape Leslie sandstone
Jurassic : East Greenland.
Edvard Bay, 1895, Meddel. om Grønland, hefte 19, pt. 6, p. 162–163; pt. 9, p. 264.
Otto Nordenskjöld, 1907, Meddel. om Grønland, hefte 28, pt. 5, p. 188–189.

Cape Maurer formation
Upper Jurassic (Portlandian) : Northeast Greenland.
Lauge Koch, 1929, Meddel. om Grønland, bind 73, afd. 2, nr. 2, p. 256.

Cape Oswald formation
Precambrian or Lower Cambrian : Northeast Greenland.
Christian Poulsen, 1930, Meddel. om Grønland, bind 74, nr. 12, p. 300–305.

Cape Parry alkaline complex
Tertiary (?) : Northeast Greenland.
G. W. Tyrell, 1932, Geol. Mag., v. 69, p. 520, 526–527.

Cape Rawson beds
Precambrian (Huronian?) : North Greenland, and Northwest Territories (Ellesmere Island), Canada.
W. H. Feilden and C. E. deRance, 1878, Geol. Soc. London Quart. Jour., v. 34, p. 556, pl. 24.

Cape Rosier beds
Cambrian and Ordovician : Quebec, Canada.
E. M. Kindle, 1938, Bull. Am. Paleontology, v. 24, no. 82, p. 46 (12).

Cape Rouge series
Mississippian : Newfoundland, Canada.
G. R. Heyl, 1937, Newfoundland Geol. Survey Bull. 8, p. 14.

Cape Russell member (of Cape Wood formation)
Middle Cambrian : North Greenland, and Northwest Territories (Ellesmere Island), Canada.
J. C. Troelsen, 1950, Meddel. om Grønland, bind 149, nr. 7, p. 43–46.

Cape St. John group
Ordovician: Newfoundland, Canada.
D. M. Baird, 1951, Canada Geol. Survey Paper 51–21, p. 31–37.

Cape San Juan limestone
Upper Cretaceous: Puerto Rico.
C. J. Maury, 1929, Science, new ser., v. 70, no. 1825, p. 609.

Cape Schuchert formation
Middle Silurian (upper Llandovery): North Greenland.
Lauge Koch, 1929, Meddel. om Grønland, bind 73, afd. 2, nr. 2, p. 237–238.

Cape Spencer flow
Triassic: Nova Scotia, Canada.
Sydney Powers and A. C. Lane, 1916, Am. Inst. Mining Engineers Trans., v. 54, p. 446.

Cape Stewart formation
Upper Triassic (Rhaetic): Northeast Greenland.
Alfred Rosenkrantz *in* Lauge Koch, 1929, Meddel. om Grønland, bind 73, afd. 2, nr. 1 p. 143.
Lauge Koch, 1929, Meddel. om Grønland, bind 73, afd. 2, nr. 2, p. 251–252.

Cape Stosch formation
Permian: Northeast Greenland.
Lauge Koch, 1929, Meddel. om Grønland, bind 73, afd. 2, nr. 1, p. 115–118.

Cape Tyson formation
Middle Silurian (Tarannon-Wenlock): North Greenland.
Lauge Koch, 1929, Meddel. om Grønland, bind 73, afd. 2, nr. 2, p. 239–241.

Cape Wardlaw complex
Pre-Devonian: Northeast Greenland.
Arne Noe-Nygaard, 1934, Meddel. om Grønland, bind 103, nr. 1, p. 14–16.

Cape Weber formation
Middle or Upper Ordovician (Black River or Richmond?): Northeast Greenland.
Lauge Koch, 1929, Meddel. om Grønland, bind 73, afd. 2, nr. 1, p. 22–23.

Cape Webster formation
Middle Ordovician (Chazyan?): North Greenland.
Lauge Koch, 1929, Meddel. om Grønland, bind 73, afd. 2, nr. 2, p. 233.

Cape With formation
Lower Jurassic(?): Northwest Territories (Ellesmere Island), Canada.
J. C. Troelsen, 1950, Meddel. om Grønland. bind 149, nr. 7, p. 75.

Cape Wood formation
Middle Cambrian: North Greenland.
Christian Poulsen, 1927, Meddel. om Grønland, bind 70, nr. 2, p. 242–243, 340.

Capilano group
Recent: British Columbia, Canada.
J. E. Armstrong and W. C. Brown, 1953, Canada Geol. Survey Water Supply Paper 322, p. 11, map.

Capisisit Lake granite
Precambrian: Quebec, Canada.
J. E. Gilbert, 1950, Canadian Mining Jour., v. 71, no. 5, p. 76; 1951, Quebec Dept. Mines Geol. Rept. 48, p. 31–32.

Capita shale member (of Domengine formation)
Eocene: California.
M. B. Payne, 1951, Calif. Dept. Nat. Res., Div. Mines Special Rept. 9, p. 15.

Caplin Cove member (of Logy formation)
Precambrian: Newfoundland, Canada.
J. O. Fuller, 1941, Newfoundland Geol. Survey Bull. 15, p. 13.

"Caprinula" limestone
See Titanosarcolites limestone.

Capsisit Lake granite
See Capisisit Lake granite.

Capta zone (in Headland gneiss)
Precambrian: Newfoundland, Canada.
J. O. Fuller, 1941, Newfoundland Geol. Survey Bull. 15, p. 11–12.

Capulin basalts
Recent: New Mexico.
Helen Stobbe, 1948, (abs.) Geol. Soc. America Bull., v. 59, no. 12, pt. 2, p. 1354–1355.
R. F. Collins, 1949, Geo. Soc. America Bull., v. 60, no. 6, p. 1023, 1031, pl. 1.

Caraba facies (of Caimito formation)
Oligocene, upper, to Miocene, lower: Panama Canal Zone.
S. M. Jones, 1950, Geol. Soc. America Bull., v. 61, no. 9, p. 901.

Caracol formation
Upper Cretaceous: Coahuila, Mexico.
R. W. Imlay, 1937, Geol. Soc. America Bull., v. 48, no. 5, p. 616–620.

Carbon Butte shales
Precambrian (Kwaguntan): Arizona.
Charles Keyes, 1938, Pan-Am. Geologist, v. 70, no. 2, p. 107, 113.

Carbonear formation
Precambrian (Upper Proterozoic): Newfoundland, Canada.
R. D. Hutchinson, 1954, Canada Geol. Survey Mem. 275, p. 12–13.

Carbonera formation
Lower Cretaceous: Durango, Mexico.
R. W. Imlay, 1940, Geol. Soc. America Bull., v. 51, no. 1, p. 124.

Carcajou series
Upper Devonian: Northwest Territories (Mackenzie) and Yukon, Canada.
G. S. Hume and T. A. Link, 1945, Canada Geol. Survey Paper 45–16, p. 33.

Cardenas lava series
Precambrian: Arizona.
Charles Keyes, 1938, Pan-Am. Geologist, v. 70, no. 2, p. 110–111.

Cardenasan series
See Cardenas lava series.

Cardigan gneiss
Precambrian(?): Arizona.
James Gilluly, 1937, Ariz. Univ. Bull., v. 8, no. 1, p. 14–20.

Careaga sand or sandstone

Pliocene, upper: California.

C. R. Canfield, 1939, Am. Assoc. Petroleum Geologists Bull., v. 23, no. 1, p. 54.
S. G. Wissler and F. E. Dreyer, 1943, Calif. Dept. Nat. Res., Div. Mines Bull. 118, pt. 2, p. 235 [preprint 1941].

Careage sand
Carega sand

See **Careaga sand or sandstone.**

Caribou complex

Precambrian: Ontario, Canada.

G. M. Friedman, 1953, (abs.) Geol. Soc. America Bull., v. 64, no. 12, pt. 2, p. 1425.

Caribou Hills glaciation

Pleistocene (pre-Wisconsin): Alaska.

D. B. Krinsley *in* T. L. Péwé and others, 1953, U. S. Geol. Survey Circ. 289, p. 5, 13 (table 1).

Caridad conglomerate

Age not stated: Sonora, Mexico.

W. R. Wade and Alfred Wandtke, 1920, Am. Inst. Mining and Metall. Engineers Trans., v. 63, p. 383.

Caridad quartz monzonite

Age not stated: Sonora, Mexico.

W. R. Wade and Alfred Wandtke, 1920, Am. Inst. Mining and Metall. Engineers Trans., v. 63, p. 383.

Carillon limestone

Cambrian and Ordovician: Quebec, Canada.

A. W. Grabau, 1936, Paleozoic formations in the light of the pulsation theory, v. 2, Cambrovician pulsation, pt. 1, Caledonian and St. Lawrence geosynclines: Peiping, China, University Press, Natl. Univ. Peking, p. 415, 424, 425, 550, 551.

Carimona member (of Platteville formation)

Middle Ordovician: Minnesota.

M. P. Weiss, 1955, Jour. Paleontology, v. 29, no. 5, p. 759–763.

Carl sandstone member (of Shenango formation)

Mississippian (middle Meramec or younger): Pennsylvania.

P. A. Dickey, R. E. Sherrill, and L. S. Matteson, 1943, Pa. Geol. Survey, ser. 4, Bull. M 25, p. 16.

Carlisle Center formation

Lower or Middle Devonian: New York.

Winifred Goldring and R. H. Flower, 1944, Am. Jour. Sci., v. 242, no. 6, p. 340.

Carlotta formation

Pliocene to Pleistocene: California.

B. A. Ogle, 1953, Calif. Dept. Nat. Res., Div. Mines Bull. 164, p. 13 (fig. 3), 35–39, pl. 1.

Carlsbad formation

Upper Ordovician: Ontario, Canada.

A. E. Wilson, 1937, Royal Soc. Canada Trans., ser. 3, v. 31, sec. 4, p. 46, 57; 1940, Canada Geol. Survey Map 588A.

Carlton slate

Precambrian: Minnesota.

A. E. Sandberg, 1938, Geol. Soc. America Bull., v. 49, no. 5, p. 798, 810.
F. F. Grout and others, 1951, Geol. Soc. America Bull., v. 62, no. 9, p. 1021, 1036.

Carman quartzite

Middle Ordovician (Chazyan): Vermont, and Quebec, Canada.

Marshall Kay, 1945 (abs.) Geol. Soc. America Bull., v. 56, no. 12, pt. 2, p. 1172.

Carmel River member (of Bécancour River formation)

Ordovician: Quebec, Canada.

T. H. Clark, 1947, Quebec Dept. Mines Prelim. Rept. 204, p. 14.

Carmen [formation]

Eocene (Jackson): Vera Cruz, Mexico.

J. B. Gibson, 1936, Soc. Geol. Mexicana Bol., tomo 9, no. 5, correlation chart.

Carmen formation

Pliocene, middle: Baja California, Mexico.

I. F. Wilson, 1948, Am. Assoc. Petroleum Geologists Bull., v. 32, no. 9, p. 1768.

Carnahan Bayou member (of Fleming formation)

Miocene: Louisiana.

N. H. Fisk, 1940, La. Dept. Conserv. Geol. Bull. 18, p. 118, 154–158

Carnavon member (of Mount Head formation)

Carboniferous: Alberta, Canada.

R. J. W. Douglas, 1953, Alberta Soc. Petroleum Geologists 3d Ann. Field Conf. and Symposium, p. 68.

Carolinas limestone

Pliocene or Pleistocene: Mariana Islands (Tinian).

Risaburo Tayama, 1936, Geomorphology, geology, and coral reefs of Tinian Island together with Aguijan and Naftan Islands: Tōhoku Univ., Inst. Geology and Paleontology Contr. in Japanese Language, no. 21, p. 21–26, 31 [English translation in library of U. S. Geol. Survey, p. 20–25, 31–32]; 1952, Coral reefs in the South Seas: Japan Hydrog. Office Bull., v. 11, table 4.

Caroline limestone

Pleistocene: Caroline Islands (Fais).

Risaburo Tayama, 1939, Correlation of the strata of the South Sea Islands: Geol. Soc. Japan Jour., v. 46, no. 549, p. 347 (correlation table) [English translation in library of U. S. Geol. Survey]; 1952, Coral reefs in the South Seas: Japan Hydrog. Office Bull., v. 11, p. 68, table 5 [English translation in library of U. S. Geol. Survey, p. 82].

Carpenter limestone member (of Grayson formation)

Upper Cretaceous: Texas.

Elliot Gillerman, 1953, U. S. Geol. Survey Bull. 987, p. 27, 29, 30.

Carpenter sediments

Precambrian (Keewatin): Ontario, Canada.

G. L. Fletcher and T. N. Irvine, 1954, Ontario Dept. Mines Ann. Rept., v. 63, pt. 5, p. 15.

Carpenter volcanics

Precambrian (Keewatin): Ontario, Canada.

G. L. Fletcher and T. N. Irvine, 1954, Ontario Dept. Mines Ann. Rept., v. 63, pt. 5, p. 15.

Carriacou limestone

Miocene, lower (Aquitanian): The Grenadines (Carriacou), British West Indies.

E. Lehner, 1935, Artesian water supply of Carriacou: St. Georges, Grenada, Govt. Printing Office, p. 5, geol. map.

C. T. Trechmann, 1935, Geol. Mag., v. 72, no. 12, p. 530, 532, 533, 539, 553.

Carrizozo lava flow
Recent: New Mexico.
J. E. Allen, 1951, *in* Roswell Geol. Soc. Guidebook 5th Field Conf., p. [8].

Carson conglomerate
Tertiary, lower: New Mexico.
Evan Just, 1937, N. Mex. School Mines Bull, 13, p. 31, 48–49.

Carsonville granite
Precambrian: Virginia.
A. J. Stose, 1942 (abs.) Am. Geophys. Union Trans. 23d Ann. Meeting, pt. 2, p. 342.

Carthew member (of Altyn formation)
Precambrian (Belt): Alberta, Canada and Montana.
C. L. Fenton and M. A. Fenton, 1937, Geol. Soc. America Bull., v. 48, no. 12, p. 1883–1884.

Casa Larga marls
Eocene, upper: Panama Canal Zone.
[T. F. Thompson], 1943, Panama Canal, Special Eng. Div., 3d Locks Proj., pt. 2, chap. 3, p. 8.

Cascajo conglomerate member (of San Joaquin formation)
Pliocene, upper: California.
W. P. Woodring, Ralph Stewart, and R. W. Richards, 1940, U. S. Geol. Survey Prof. Paper 195, p. 49–54 [1941].

Cascan formation
Pleistocene: Oregon.
E. T. Hodge, 1938, Geol. Soc. America Bull., v. 49, no. 6, p. 879–886.

Casitas formation
Pleistocene: California.
J. E. Upson, 1951, U. S. Geol. Survey Water-Supply Paper 1108, p. 21–23.

Cassa group
Permian: Wyoming, Colorado, and South Dakota.
G. E. Condra, E. C. Reed, and O. J. Scherer, 1940, Nebr. Geol. Survey Bull. 13, p. 2, 4, 19, 45.

Cassadaga stage
Upper Devonian (Chautauquan): New York.
G. A. Cooper and others, 1942, Geol. Soc. America Bull., v. 53, no. 12, pt. 1, p. 1734, Chart 4.

Cassel Hill member (of Catahoula formation)
Miocene: Louisiana.
W. D. Chawner, 1936, La. Dept. Conserv. Geol. Bull. 9, p. 121–122.

Cass Fjord formation
Lower Ordovician (Upper Ozarkian): North Greenland.
Christian Poulsen, 1927, Meddel. om Grønland, bind 70, nr. 2, p. 244, 341.

Castaic formation
Miocene: California.
J. C. Crowell, 1955, Calif. Dept. Nat. Res., Div. Mines Bull, 170, map sheet 7.

Castalia sand
Pleistocene: North Carolina.
B. W. Wells, 1944, Elisha Mitchell Sci. Soc. Jour., v. 60, no. 2, p. 130–131.

Castiyo limestone
See Kasutesyo limestone.

Castle rhyolite
Tertiary: Wyoming.
R. E. Wilcox, 1944, Geol. Soc. America Bull., v. 55, no. 9, p. 1053.

Castor Creek member (of Fleming formation)
Miocene: Louisiana.
H. N. Fisk, 1940, La. Dept. Conserv. Geol. Bull. 18, p. 118, 164–168.

Castro shale member (of Alhambra formation)
Eocene, upper: California.
C. E. Weaver, 1953, Wash. [State] Univ. Pubs. in Geology, v. 7, p. 19 (chart), 53–54.

Cataract basalt
Tertiary: Wyoming.
R. E. Wilcox, 1944, Geol. Soc. America Bull., v. 55, no. 9, p. 1055–1056.

Cataract Falls sandstone (in Ste. Genevieve formation)
Mississippian: Indiana.
C. A. Malott, 1945, (abs.) Ind. Acad. Sci. Proc., v. 55, p. 77 [1946].

Cathedral Valley agglomerate
Tertiary, upper: Alaska.
G. C. Kennedy and H. H. Waldron, 1947, U. S. Geol. Survey Alaskan Volcano Inv. Rept. 2, pt. 2, p. 12.

Cativa marl (in Gatun formation)
Miocene, middle: Panama.
H. N. Coryell and Suzanne Fields, 1937, Am. Mus. Novitates no. 956, p. 1.

Cat Mountain rhyolite
Tertiary: Arizona.
W. H. Brown, 1939, Geol. Soc. America Bull., v. 50, no. 5, p. 729–731.

Caughnawaga member (of Laval formation)
Middle Ordovician (Chazy): Quebec, Canada.
T. H. Clark, 1944, Royal Soc. Canada Trans., sec. 4, v. 38, p. 29.

Cave Creek formation
Cenozoic: Arizona.
H. E. Enlows, 1955, Geol. Soc. America Bull., v. 66, no. 10, p. 1217.

Cayes limestone member (of Saint Bartholomew formation)
Eocene, middle: St. Bartholomew, French West Indies.
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Cayuse limestone
Precambrian (Belt series): Montana.
Charles Deiss, 1943, Geol. Soc. America Bull., v. 54, no. 2, p. 213, 215–216.

Cebada fine-grained member (of Careaga sandstone)
Pliocene, upper: California.
W. P. Woodring, M. N. Bramlette, and K. E. Lohman, 1943, Am. Assoc. Petroleum Geologists Bull., v. 27, no. 10, p. 1356–1358.

Cedar City tongue (of Kayenta formation)
Jurassic(?): Utah.
Paul Averitt and others, 1955, Am. Assoc. Petroleum Geologists Bull., v. 39, no. 12, p. 2521–2522.

Cedar Keys limestone

Paleocene: Florida (subsurface).

W. S. Cole, 1944, Fla. Geol. Survey Bull. 26, p. 27–28.

Cedar Mountain formation

Lower Cretaceous: Utah.

W. L. Stokes, 1944, Geol. Soc. America Bull., v. 55, no. 8, p. 966–967.

Cedar Mountain group

Lower Cretaceous: Utah and Colorado.

W. L. Stokes, 1944, Geol. Soc. America Bull., v. 55, no. 8, p. 989, fig. 2.

Cedar Rapids granite

Precambrian (post-Keewatin): Quebec, Canada.

W. W. Longley, 1946, Quebec Dept. Mines Geol. Rept. 24, p. 11, 13.

Cedral formation

Miocene, upper: Istmo de Tehuantepec, Mexico.

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Manuel Alvarez, Jr., 1951, Am. Assoc. Petroleum Geologists Bull., v. 35, no. 2, p. 376.

Cedros beds

Pliocene and Pleistocene: Trinidad, British West Indies.

C. J. Maury, 1925, Bull. Am. Paleontology, v. 10, no. 42, p. 169 (17).
R. A. Liddle, [1928], The geology of Venezuela and Trinidad: Fort Worth, Tex., J. P. MacGowan, p. 487–488.

Cedros Point beds

See Cedros beds.

Céloron granite

Precambrian (post-Keewatin): Quebec, Canada.

W. W. Longley, 1946, Quebec Dept. Mines Geol. Rept. 24, p. 13–14.

Centerpoint volcanic facies (of Eagleford formation)

Cretaceous: Arkansas, Louisiana, and Texas.

R. T. Hazzard, 1939, Shreveport Geol. Soc. Guidebook 14th Ann. Field Trip, p. 143, 147–148.

Central series

Precambrian: Ontario, Canada.

L. C. Graton and others, 1933, Canadian Inst. Mining and Metallurgy Trans., v. 36, p. 3.

Central Fee unit (in Sycamore Canyon member of Puente formation)

Miocene, upper: California.

C. J. Kundert, 1952, Calif. Dept. Nat. Res., Div. Mines Special Rept. 18, p. 6–7.

Central Plain tuff formation

Oligocene: Antigua, British West Indies.

Alfred Senn, 1940, Am. Assoc. Petroleum Geologists Bull., v. 24, no. 9, p. 1581, 1594, 1596.

Centre Hill complex

Precambrian: Ontario, Canada.

Jack Satterly, 1952, Ontario Dept. Mines Ann. Rept., v. 60, pt. 8, p. 19.

Centre Lake leuco-granite gneiss

Precambrian: Ontario, Canada.

Jack Satterly and D. F. Hewitt, 1955, Ontario Dept. Mines Geol. Circ. 2, p. 5.

Centrum limestone

Ordovicion and Silurian: North Greenland.

P. J. Adams and J. W. Cowie, 1953, Meddel. om Grønland, bind 111, nr. 7, p. 9, 12–14, 17.

Cerbat complex

Precambrian (Archean): Arizona.

B. E. Thomas, 1949, Econ. Geology, v. 44, no. 8, p. 666.

Cerro Gigante basalt

Miocene, lower: Panama.

S. M. Jones, 1950, Geol. Soc. America Bull., v. 61, no. 9, p. 898 (correlation table), 901.

Cerro Ladron facies (of El Doctor limestone)

Lower Cretaceous: Queretaro, Mexico.

B. W. Wilson, J. P. Hernández M., and E. Meave T., 1955, Soc. Geol. Mexicana Bol., tomo 18, no. 1, p. 5, fig. 2.

Cerro Prieto formation

Lower Cambrian: Sonora, Mexico.

G. A. Cooper and A. R. V. Arellano, 1952, Smithsonian Misc. Coll., v. 119, no. 1, p. 5.

Cerros shale member (of Lodo formation)

Paleocene and Eocene: California.

R. T. White, 1938, (abs.) Geol. Soc. America Proc. 1937, p. 257; 1940, Am. Assoc. Petroleum Geologists Bull., v. 24, no. 10, p. 1738.

Cerrotejonian stage

Pliocene, early: California.

D. E. Savage, 1955, Calif. Univ. Pubs. Geol. Sci., v. 31, no. 1, p. 11–19.

Cerro Topila beds

Tertiary (Neogene): Tamaulipas and Vera Cruz, Mexico.

Walther Staub, 1928, Eclogae Geologicae Helvetiae, v. 21, no. 1, p. 123–124.

Chacha limestone

Pleistocene: Mariana Islands (Saipan).

Risaburo Tayama, 1939, Correlation of the strata of the South Sea Islands: Geol. Soc. Japan Jour., v. 46, no. 549, p. 346 (correlation table) [English translation in library of U. S. Geol. Survey]; 1952, Coral reefs in the South Seas: Japan Hydrog. Office Bull., v. 11, p. 57–58, table 4 [English translation in library of U. S. Geol. Survey, p. 68–69.]

Chadbourne series

Precambrian: Quebec, Canada.

H. J. Conolly and R. C. Hart, 1936, Canadian Inst. Mining and Metallurgy Trans., v. 39, p. 11.

Chadronian age

Oligocene: North America.

H. E. Wood, 2d, and others, 1941, Geol. Soc. America Bull., v. 52, no. 1, p. 11, pl. 1.

Chagres alluvium

Pleistocene and Recent: Panama and Panama Canal Zone.

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Chalk Hills member (of Catahoula formation)

Miocene: Louisiana.

W. D. Chawner, 1936, La. Dept. Conserv. Geol. Bull. 9, p. 122–124.

Chalma shale (of Chicontepec formation)
Eocene, lower: Tamaulipas, Mexico.
Arnold Heim, 1940, Eclogae Geologicae Helvetiae, v. 33, no. 2, p. 330.

Chalmers quartz monzonite
Tertiary: Colorado.
J. T. Stark and others, 1949, Geol. Soc. America Mem. 33, p. 81, 84–86.

Chalybeate limestone member (of Porters Creek clay formation)
Paleocene (Midway group): Mississippi.
F. S. MacNeil, 1946, U. S. Geol. Survey Strategic Minerals Inv. Prelim. Rept. 3–195, p. 9.

Chambless limestone
Lower Cambrian: California.
J. C. Hazzard, 1938, (abs.) Geol. Soc. America Proc. 1937, p. 241.

Champion revolution
Precambrian: Michigan.
W. A. Seaman *in* A. K. Snelgrove, W. A. Seaman, and V. L. Ayres, 1944, Mich. Dept. Conserv. Geol. Survey Div. Progress Rept. 10, p. 13–14, table 1.

Chana member (of Pecatonica formation)
Middle Ordovician: Illinois.
J. S. Templeton and H. B. Willman, 1952, Tri-State Geol. Soc. Guidebook 16th Ann. Field Conf., figs. 3, 12.

Chance Harbour granite
Post middle Carboniferous: New Brunswick, Canada.
H. R. Belyea, 1944, Acadian Naturalist, v. 1, no. 3, p. 88.

Chances Branch dolomite member (of Maynardville limestone)
Upper Cambrian: Virginia.
R. L. Miller and J. O. Fuller, 1947, U. S. Geol. Survey Oil and Gas Inv. Prelim. Map 76.

Chandler formation
Lower and Upper Cretaceous: Alaska.
George Gryc. W. W. Patton, Jr., and T. G. Payne, 1951, Washington Acad. Sci. Jour.. v. 41, no. 5, p. 164.

Chandler Falls member (of Trenton formation)
Middle Ordovician: Michigan.
R. C. Hussey, 1952, Mich. Dept. Conserv. Geol. Survey Div. Pub. 46, Geol. Ser. 39, p. 13–14.

Chaney Ranch sandstone formation
Eocene: California.
M. B. Payne, 1951, Calif. Dept. Nat. Res., Div. Mines Special Rept. 9, p. 15–18.

Chapatan formation
Eocene: Vera Cruz, Mexico.
G. P. Salas, 1949, Am. Assoc. Petroleum Geologists Bull., v. 33, no. 8, p. 1393.

Chapin Wash formation
Pliocene, lower: Arizona.
S. G. Lasky and B. N. Webber, 1949, U. S. Geol. Survey Bull. 961, p. 23–34.

Chapman Gulch glaciation
Pleistocene (Cochrane?): Colorado.
R. L. Nelson, 1954, Jour. Geology, v. 62, no. 4, p. 333–334.

Chapman Ridge sandstone
Middle Ordovician: Tennessee.
J. M. Cattermole, 1955, U. S. Geol. Survey Geol. Quadrangle Map GQ 76.

Chapparal sandstone (in Saavedra member of Lowell formation)
Lower Cretaceous: Arizona.
A. A. Stoyanow, 1949, Geol. Soc. America Mem. 38, p. 11.

Charco Azul formation
Pliocene: Panama and Costa Rica.
R. A. Terry, 1941, Geog. Review, v. 31, no. 3, p. 382, fig. 5.
A. A. Olsson, 1942, Bull. Am. Paleontology, v. 27, no. 106, p. 164–167 (12–15).

Charco Redondo limestone
Eocene, middle: Cuba.
W. P. Woodring and S. N. Daviess, 1944, U. S. Geol. Survey Bull, 935–G, p. 367–374.
W. P. Woodring, 1952, Jour. Paleontology, v. 26, no. 1, p. 60.

Charcot Bay sandstone
See Charcotbucht sandstone.

Charcotbucht sandstone
Upper Jurassic (Oxfordian?): East Greenland.
Hermann Aldinger, 1935, Meddel. om Grønland, bind 99, nr. 1, p. 54–57, pl. 3.

Charles formation
Mississippian: Subsurface in Montana and North Dakota.
O. A. Seager, 1942, Am. Assoc. Petroleum Geologists Bull., v. 26, no. 5, p. 863, 864.

Charlie Lake formation
Triassic: British Columbia, Canada.
L. M. Clark, 1954, (abs.) Alberta Soc. Petroleum Geologists News Bull., v. 2, no. 6, p. 5.

Charlotte group
Ordovician(?): New Brunswick, Canada.
F. J. Alcock, 1946, Canada Geol. Survey Paper (Prelim. Map) 46–3.

Charlottesville formation
Age not stated: Virginia.
W. A. Nelson, 1949, (abs.) Va. Acad. Sci. Proc. 1948–1949, p. 140.

Charney formation
Lower Cambrian: Quebec, Canada.
Franco Rasetti, 1946, Geol. Soc. America Bull., v. 57, no. 7, p. 698–700.

Charter member (of Mt. Simon formation)
Upper Cambrian: Illinois (subsurface).
J. S. Templeton, Jr., 1950, Ill. Acad. Sci. Trans., v. 43, p. 156.

Chase Channel formation
Pleistocene (Nebraskan and Aftonian): Kansas.
R. C. Moore, 1949, Am. Assoc. Petroleum Geologists Bull., v. 33, no. 7, p. 1278.
O. S. Fent, 1950, Kans. State Geol. Survey Bull. 85, p. 64–65.

Chatcha limestone
See Chacha limestone.

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Chatham limestone

Cambrian and Ordovician: Quebec, Canada.

A. W. Grabau, 1936, Paleozoic formations in the light of the pulsation theory, v. 2, Cambrovician pulsation, pt. 1, Caledonian and St. Lawrence geosynclines: Peiping, China, University Press, Natl. Univ. Peking, p. 415, 421, 424, 425, 550, 551.

Chatton Bay sandstone

Jurassic: East Greenland.

L. F. Spath, 1936, Meddel. om Grønland, bind 99, nr. 3, p. 10.

Chaudiere formation

Paleocene: Trinidad, British West Indies.

H. H. Renz, 1942, 8th Am. Sci. Cong. Proc., v. 4, p. 529.

H. G. Kugler, 1953, Vereinigung Schweizer Petroleum Geologen u. Ingenieure Bull., v. 20, no. 59, p. 39, 41.

Chavez member (of Morrison formation)

Jurassic: New Mexico.

C. T. Smith, 1951, *in* N. Mex. Geol. Soc. Guidebook 2d Field Conf., p. 13, 38; 1954, N. Mex. Bur. Mines Min. Res. Bull. 31, p. 15–16.

Chemard Lake lignite lentil (of Naborton formation)

Paleocene (Midway): Louisiana.

D. P. Meagher and L. C. Aycock, 1942, La. Dept. Conserv. Geol. Pamph. 3, p. 12–16.

G. E. Murray, 1948, La. Dept. Conserv. Geol. Bull. 25, p. 98–100.

Chenango sandstone

Devonian: New York.

G. A. Cooper, 1941, Washington Acad. Sci. Jour., v. 31, no. 5, p. 180.

Cheneyan stage

Paleocene: California.

P. P. Goudkoff, 1945, Am. Assoc. Petroleum Geologists Bull., v. 29, no. 7, p. 967–982.

Cherry Canyon formation

Permian (Guadalupe series): Texas.

P. B. King *in* R. K. DeFord and E. R. Lloyd, 1940, Am. Assoc. Petroleum Geologists Bull., v. 24, no. 1, p. 8.

P. B. King, 1942, Am. Assoc. Petroleum Geologists Bull., v. 26, no. 4, p. 579–580, pl. 2.

Cherry Creek member (of Venango formation)

Upper Devonian (Conewangan): New York.

I. H. Tesmer, 1954, Dissert. Abs., v. 14, no. 12, p. 2317, 2318.

Cherryville quartz monzonite

Devonian(?): North Carolina and South Carolina.

W. R. Griffitts and W. C. Overstreet, 1952, Am. Jour. Sci., v. 250, no. 11, p. 783–786.

Chert Hill formation

Upper Cretaceous: Trinidad, British West Indies.

H. G. Kugler, 1950, Asociación Venezolano de Geología, Minería y Petróleo Bol., tomo 2, no. 1, p. 61.

Chertsey facies (of Morin anorthosite)

Precambrian: Quebec, Canada.

F. F. Osborne, 1949, Royal Soc. Canada Trans., sec. 4, v. 43, p. 104.

Chestnut Ridge sandstone

Lower Mississippian (Kinderhook): Pennsylvania.

W. M. Laird, 1941, Pa. Topog. and Geol. Survey Progress Rept. 126, p. 16 (footnote).

Chesuncook limestone
Silurian: Maine.
Bradford Willard, 1945, Jour. Paleontology, v. 19, no. 1, p. 67–68.

Chetwynd granite
Devonian: Newfoundland, Canada.
J. R. Cooper, 1954, Canada Geol. Survey Mem. 276, p. 29.

Cheval beds
Upper Cretaceous: Manitoba, Canada.
W. M. Tovell, 1951, Manitoba Dept. Mines and Nat. Res. Mines Br. Prelim. Rept. 47–7, p. 4.

Cheviot formation
Devonian: Alberta, Canada.
F. G. Fox, 1951, Am. Assoc. Petroleum Geologists Bull., v. 35, no. 4, p. 830–834.

Chicago Mound formation
Permian: Kansas and Nebraska.
G. E. Condra and E. C. Reed, 1943, Nebr. Geol. Survey Bull. 14, p. 36, 37.

Chickahominy formation
Eocene, upper (Jackson age): Virginia (subsurface).
J. A. Cushman and D. J. Cederstrom, 1945, Va. Geol. Survey Bull. 67, p. 2–3.

Chickasaw Creek formation
Pennsylvanian (Bendian): Oklahoma.
B. H. Harlton, 1938, Am. Assoc. Petroleum Geologists Bull., v. 22, no. 7, p. 854, 874–878.

Chico phonolites
Quaternary: New Mexico.
Helen Stobbe, 1948, (abs.) Geol. Soc. America Bull., v. 59, no. 12, pt. 2, p. 1354–1355.
R. F. Collins, 1949, Geol. Soc. America Bull., v. 60, no. 6, p. 1034–1036, pl. 1.

Chico Creek beds
Upper Cretaceous: California.
F. M. Anderson, 1937, (abs.) Am. Assoc. Petroleum Geologists Bull., v. 21, no. 12, p. 1612.

Chicoma volcanic formation
Tertiary, middle: New Mexico.
H. T. U. Smith, 1937, (abs.) Geol. Soc. America Proc. 1936, p. 103; 1938, Jour. Geology, v. 46, no. 7, p. 939–940, 958.

Chicopee formation
Pre-Carboniferous(?): California.
R. B. Guillou, 1953, Calif. Dept. Nat. Res., Div. Mines Special Rept. 31, p. 5 (fig. 2), 7–10.

Chicopee Canyon formation
See Chicopee formation.

Chico Shunie quartz monzonite
Mesozoic(?): Arizona.
James Gilluly, 1937, Ariz. Univ. Bull., v. 8, no. 1, p. 23–27.

Chikaskia member (of Harper sandstone)
Permian: Kansas and Oklahoma.
G. H. Norton, 1937, Am. Assoc. Petroleum Geologists Bull., v. 21, no. 12, p. 1557; 1939, v. 23, no. 12, p. 1782–1785.

Childs latite

Pliocene(?): Arizona.

James Gilluly, 1937, Ariz. Univ. Bull., v. 8, no. 1, p. 47–48.

Chile limestone

Middle Cretaceous: Michoacan, Mexico.

E. J. Guzman, 1950, Asociación Mexicana Geólogos Petroleros Bol., v. 2, no. 2, strat. columns.

Chilibrillo limestone member (of Caimito formation)

Miocene, lower: Panama Canal Zone and Panama.

A. A. Olsson, 1942, 8th Am. Sci. Cong. Proc., v. 4, p. 234 (correlation chart).
W. P. Woodring and T. F. Thompson, 1949, Am. Assoc. Petroleum Geologists Bull., v. 33, no. 2, p. 235.

Chimney Arm formation

Lower Ordovician: Newfoundland, Canada.

Frederick Betz, Jr., 1939, Newfoundland Geol. Survey Bull. 16, p. 17–19.

Chimney Rock tongue (of Blair formation)

Upper Cretaceous: Wyoming.

L. A. Hale, 1950, Wyo. Geol. Assoc. Guidebook 5th Ann. Field Conf., p. 52, fig. 1.

China Creek andesite

Triassic: British Columbia, Canada.

J. S. Stevenson, 1945, British Columbia Minister Mines Ann. Rept. 1944, p. A–145.

Chinal limestone

Eocene, middle and upper: Tabasco and Chiapas, Mexico.

J. B. Gibson, 1936, Soc. Geol. Mexicana Bol., tomo 9, no. 5, p. 278, correlation chart.

Chinal shales

Eocene, middle and upper: Tabasco and Chiapas, Mexico.

J. B. Gibson, 1936, Soc. Geol. Mexicana Bol., tomo 9, no. 5, p. 278, correlation chart.

Chinameca limestone

Upper Jurassic to Lower Cretaceous: Istmo de Tehuantepec, Mexico.

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Luis Benavides G., 1950, Asociación Mexicana Geólogos Petroleros Bol., v. 2, no. 10, p. 604–606.

China Mountain formation

Lower and Middle(?) Triassic: Nevada.

H. G. Ferguson, S. W. Muller, and R. J. Roberts, 1951, Geology of the Winnemucca quadrangle, Nevada: U. S. Geol. Survey Geol. Quadrangle Map [GQ 11].

China Ranch beds

Quaternary: California.

J. F. Mason, 1948, Geol. Soc. America Bull., v. 59, no. 4, p. 336 (table 1), pl. 2.

Chinchaga formation

Devonian: Alberta, Canada (subsurface).

J. Law, 1955, Alberta Soc. Petroleum Geologists Jour., v. 3, no. 6, p. 83.

Chinook member (of Wapiabi formation)

Upper Cretaceous: Alberta, Canada.

Joseph Gleddie, 1949, Am. Assoc. Petroleum Geologists Bull., v. 33, no. 4, p. 523–524.

Chioack conglomerate-sandstone

Precambrian: Quebec, Canada.

P. E. Auger, 1954, Canadian Mining and Metall. Bull., v. 47, no. 8, p. 530.

Chipman group
Middle Ordovician (Chazyan) : Vermont.
Marshall Kay and W. M. Cady, 1947, Science, v. 105, no. 2736, p. 601.

Chiquito sandstone
Precambrian (Chuaran) : Arizona.
Charles Keyes, 1938, Pan-Am. Geologist, v. 70, no. 2, p. 107, 112.

Chisholm Creek shale member (of Wellington formation)
Permian: Kansas.
W. A. Ver Wiebe, 1937, Wichita Municipal Univ. Bull., v. 12, no. 5, p. 11–12.

Chiva Chiva andesite
Pre-Pliocene: Panama Canal Zone.
[T. F. Thompson] 1943, Panama Canal, Special Eng. Div., 3d Locks Proj., pt. 2, chap. 3, p. 27.

Chival [formation]
Cretaceous (Albian) : Tabasco, Mexico.
G. P. Salas and Ernesto Lopez Ramos, 1951, Asociación Mexicana Geólogos Petroleros Bol., v. 3, nos. 1–2, table 1.

Chiwaukum schist
Pre-Ordovician: Washington.
B. M. Page, 1940, Stanford Univ. Abs. Dissert., v. 15, p. 118.

Chloride granite
Precambrian: Arizona.
M. G. Dings, 1951, U. S. Geol. Survey Bull. 978–E, p. 129.

Cholla member (of Lowell formation)
Lower Cretaceous: Arizona.
A. A. Stoyanow, 1949, Geol. Soc. America Mem. 38, p. 10, 16.

Cholla Canyon tongue (of Cliff House sandstone)
Upper Cretaceous: New Mexico.
P. T. Hays and A. D. Zapp, 1955, U. S. Geol. Survey Oil and Gas Inv. Map OM 144.

Choptankian substage
Miocene, middle: Central Atlantic Coastal Plain.
D. S. Malkin, 1953, Jour. Paleontology, v. 27, no. 6, p. 767–768.

Chorrera basalt
Miocene, lower: Panama.
S. M. Jones, 1950, Geol. Soc. America Bull., v. 61, no. 9, p. 898 (correlation table).

Christine member (of Yegua formation)
Eocene: Texas.
H. D. McCallum, 1947, S. Tex. [Geol. Soc. Guidebook] 14th Ann. Meeting Field Trip, p. 5.

Christopher formation
Lower Cretaceous or younger: Northwest Territories (Ellef Ringnes Island), Canada.
W. W. Heywood, 1955, Canadian Mining and Metall. Bull., v. 48, no. 514, p. 60, 61.

Christy Creek siltstone member (of Brodhead formation)
Lower Mississippian: Kentucky.
P. B. Stockdale, 1939, Geol. Soc. America Special Paper 22, p. 180–182.

Chubbuck marble member (of Essex series)
Precambrian (Archean): California.
J. C. Hazzard and E. F. Dosch, 1937, (abs.) Geol. Soc. America Proc. 1936, p. 309.

Chuchi Lake syenite
Upper Jurassic or Lower Cretaceous: British Columbia, Canada.
J. E. Armstrong, 1949, Canada Geol, Survey Mem. 252, p. 109–110.

Cnuckwalla complex
Precambrian: California.
W. J. Miller, 1944, Calif. Jour. Mines and Geology, v. 40, no. 1, p. 16–20.

Chuctanunda Creek dolomite
Lower Ordovician (lower Canadian): New York.
D. W. Fisher, 1954, Geol. Soc. America Bull., v. 65, no. 1, p. 76 (fig. 2), 77, 90–92.

Chucunaque formation
Miocene, upper: Panama.
Karl Sapper, 1937, Mittelamerika, Handbuch der regionalen Geologie: Heidelberg, Band 8, Abt. 4a, Heft 29, p. 133, 134 (correlation chart).

Chumway rhyolite
Oligocene: Colorado.
J. E. Vever, 1954, Dissert. Abs., v. 14, no. 7, p. 1088.

Chungo member (of Brazeau formation)
Upper Cretaceous: Alberta, Canada.
A. H. Lang, 1946, Canada Geol. Survey Paper 46–5, p. 15.

Church Creek beds
Eocene to Oligocene: California.
Parry Reiche, 1937, Calif. Univ. Pubs. Dept. Geol. Sci. Bull., v. 24, no. 7, p. 144–146, geol. map.

Cialitos limestone
Upper Cretaceous: Puerto Rico.
R. C. Mitchell, 1954, Puerto Rico Univ. Agr. Expt. Sta. Tech. Paper 13, p. 47, 48.

Cienda limestone (in Pacheta member of Lowell formation)
Lower Cretaceous: Arizona.
A. A. Stoyanow, 1949, Geol. Soc. America Mem. 38, p. 12.

Cieneguilla formation
Pennsylvanian (Des Moines): New Mexico.
J. A. Young, Jr., 1946, (abs.) Geol. Soc. America Bull., v. 57, no. 12, pt. 2, p. 1247.

Cieneguilla limburgite
Tertiary: New Mexico.
C. E. Stearns, 1953, Geol. Soc. America Bull., v. 64, no. 4, p. 467 (fig. 3), 468, pl. 1.

Ciervian stage
Late Cretaceous: California.
P. P. Goudkoff, 1945, Am. Assoc. Petroleum Geologists Bull., v. 29, no. 7, p. 982–985.

Cima sandstone lentil (in Dos Palos shale member of Moreno formation)
Cretaceous or Paleocene(?): California.
M. B. Payne, 1941, (abs.) Geol. Soc. America Bull., v. 52, no. 12, pt. 2, p. 1953.

Cimarron anhydrite
Permian: Oklahoma.
Henry Schweer, *in* O. E. Brown, 1937, Am. Assoc. Petroleum Geologists Bull., v. 21, no. 12, p. 1553 (fig. 9).

Cinchona limestone (in Mt. Hybla beds)

Eocene, lower: Jamaica, British West Indies.

C. A. Matley, 1951, Geology and physiography of the Kingston district, Jamaica: Inst. of Jamaica, p. 57.

Cintalapa beds

Age not stated: Chiapas, Mexico.

Karl Sapper, 1937, Mittelamerika, Handbuch der regionalen Geologie: Heidelberg, Band 8, Abt. 4a, Heft 29, pls. 5a, 5b.

Cipero marl formation

Oligocene: Trinidad, British West Indies.

M. L. Thomas, 1924, Oil Eng. and Finance, v. 5, no. 98, p. 328.

R. M. Stainforth, 1948, Am. Assoc. Petroleum Geologists Bull., v. 32, no. 7, p. 1292–1313.

Cipero Creek marl

See Cipero marl formation.

Cipiapa limestone

Middle Cretaceous: Puebla, Mexico.

J. G. Aguilera, 1906, 10e Cong. Géol. Internat., Mexico, Guide des Excursions 7, p. 13, 17.

R. W. Imlay, 1944, Geol. Soc. America Bull., v. 55, no. 8, p. 1017, Chart 10a.

Cisco Lake sandstone

Pennsylvanian: Texas.

F. B. Plummer, 1947, Jour. Geology, v. 55, no. 3, pt. 2, p. 194 (table 1).

Cistern member (of Yegua formation)

Eocene: Texas.

H. D. McCallum, 1947, S. Tex. [Geol. Soc. Guidebook] 14th Ann. Meeting Field Trip, p. 4, 5.

City Creek limestone

Upper Devonian: Utah.

A. E. Granger and others, 1952, Utah Geol. Soc. Guidebook 8, p. 8.

City Creek series

Precambrian: Arizona.

E. D. Wilson, 1939, Geol. Soc. America Bull., v. 50, no. 7, p. 1118, 1126–1127.

Clackamas gravels

Pleistocene: Oregon.

R. C. Treasher, 1940, (abs.) Geol. Soc. America Bull., v. 51, no. 12, pt. 2, p. 2034; 1942, Geologic map of the Portland area, Oregon (1:96,000): Oreg. State Dept. Geology and Mineral Res.

Clairmont formation

See Claremont formation.

Clarabelle granite

Precambrian (Algoman?): Ontario, Canada.

Anonymous, 1937, Canadian Mining Jour., v. 58, no. 11, p. 593.

Claremont formation

Pennsylvanian(?): Nova Scotia, Canada.

G. W. H. Norman and W. A. Bell, 1938, Canada Geol. Survey Map 409A.

Clarendonian age
Pliocene: North America.
H. E. Wood, 2d, and others, 1941, Geol. Soc. America Bull., v. 52, no. 1, p. 12, pl. 1.

Clarita limestone
Oligocene, lower: Panama.
Karl Sapper, 1937, Mittelamerika, Handbuch der regionalen Geologie: Heidelberg, Band 8, Abt. 4a, Heft 29, p. 133, 134 (correlation chart).

Clark Canyon lavas
Tertiary, upper, or Pleistocene: Montana.
Robert Scholten, K. A. Keenmon, and W. O. Kupsch, 1955, Geol. Soc. America Bull., v. 66, no. 4, p. 377, pl. 1.

Clarkforkian age
Paleocene: North America.
H. E. Wood, 2d, and others, 1941, Geol. Soc. America Bull., v. 52, no. 1, p. 9, pl. 1.

Clarkston stage
Pleistocene (pre-Wisconsin): Washington.
R. L. Lupher, 1944, Geol. Soc. America Bull., v. 55. no. 12, p. 1433–1435; 1945, Jour. Geology, v. 53, no. 5, p. 337–348.

Claverack conglomerate (in Schodack formation)
Cambrian: New York.
G. H. Chadwick, 1946, Am. Jour. Sci., v. 244, no. 8, p. 585.

Claverny albite granodiorite
Precambrian (Archean): Quebec, Canada.
W. W. Weber, 1951, Quebec Dept. Mines Prelim. Rept. 255, p. 2.

Clay City siltstone member (of New Providence formation)
Lower Mississippian: Kentucky.
P. B. Stockdale, 1939, Geol. Soc. America Special Paper 22, p. 123–125.

Claymont clay bed (in Silverado formation)
Paleocene: California.
W. P. Woodring and W. P. Popenoe, 1945, U. S. Geol. Survey Oil and Gas Inv. Prelim. Chart 12.

Claypole Hills sandstone (in McLeansboro formation)
Pennsylvanian: Indiana and Illinois.
J. A. Culbertson, 1932, The paleontology and stratigraphy of the Pennsylvanian strata between Caseyville, Ky. and Vincennes, Ind.; Abs. Thesis, Ill. Univ.: Urbana, Ill. p. 7.

Clayton basalts
Quaternary: New Mexico.
Helen Stobbe, 1948, (abs.) Geol. Soc. America Bull., v. 59, no. 12, pt. 2, p. 1354–1355.
R. F. Collins, 1949, Geol. Soc. America Bull., v. 60, no. 6, p. 1028–1030, pl. 1.

Clear Creek gravels
Tertiary, lower: Wyoming.
R. P. Sharp, 1948, Jour. Geology, v. 56, no. 1, p. 1.

Clearwater volcanics
Precambrian (Keewatin): Ontario, Canada.
F. J. Pettijohn, 1939, Geol. Soc. America Bull., v. 50, no. 5, p. 765.
Jack Satterly, 1943, Ontario Dept. Mines Ann. Rept., v. 50, pt. 2, p. 28.

Cle Elum formation
Cretaceous: Washington.
R. L. Lupher, 1944, Wash. Dept. Conserv. Devel., Div. Geology Rept. Inv. 11, p. 7, 12–15, pl. 1.

Clement member (of Grand Detour formation)
Middle Ordovician: Illinois.
J. S. Templeton and H. B. Willman, 1952, Tri-State Geol. Soc. Guidebook 16th Ann. Field Conf., fig. 3.

Clementsville limestone member (of Brodhead formation)
Lower Mississippian: Kentucky.
P. B. Stockdale, 1939, Geol. Soc. America Special Paper 22, p. 161–162.

Cléricy granodiorite
Precambrian: Quebec, Canada.
H. C. Cooke, W. F. James, and J. B. Mawdsley, 1931, Canada Geol. Survey Mem. 166, p. 126–127.

Cléricy porphyritic syenites
Precambrian: Quebec, Canada.
H. C. Cooke, W. F. James, and J. B. Mawdsley, 1931, Canada Geol. Survey Mem. 166, p. 116.

Cléricy sediments
Precambrian: Quebec, Canada.
H. M. Bannerman, 1940, Quebec Dept. Mines Geol. Rept. 4, p. 10–11.

Cleveland Gulch quartzite member (of Hopewell series)
Precambrian (Proterozoic): New Mexico.
Evan Just, 1937, N. Mex. School Mines Bull. 13, p. 42.

Cliffield formation
Middle Ordovician: Virginia.
B. N. Cooper and C. E. Prouty, 1943, Geol. Soc. America Bull., v. 54, no. 6, p. 862–868.

Climax porphyry
Tertiary: Colorado.
E. J. Eisenach and Edward Matsen, 1954, Mining Eng., v. 6, no. 3, p. 274.
J. W. Vanderwilt and R. U. King, 1955, Mining Eng., v. 7, no. 1, p. 43–44.

Clinetop algal limestone member (of Dotsero formation)
Upper Cambrian: Colorado.
N. W. Bass and S. A. Northrop, 1953, Am. Assoc. Petroleum Geologists Bull., v. 37, no. 5, p. 899–904.

Cloice member (of Lake Waco formation)
Cretaceous (Gulf): Texas.
W. S. Adkins and F. E. Lozo *in* F. E. Lozo, 1951, Fondren Sci. Series, no. 4, p. 122, fig. 25.

Cloud Rapids formation
Middle Cambrian: Newfoundland, Canada.
Frederick Betz, Jr., 1939, Newfoundland Geol. Survey Bull. 16, p. 15–16.

Cloud River granite
Precambrian: Newfoundland, Canada.
C. E. Fritts, 1953, Newfoundland Geol. Survey Rept. 4, p. 14–15.

Cloudy Pass diorite
Tertiary: Washington.
E. A. Youngberg and T. L. Wilson, 1952, Econ. Geology, v. 47, no. 1, p. 4, 5.

Clover member (of Loysburg formation)
Middle Ordovician (Chazyan?): Pennsylvania.
G. M. Kay, 1941, (abs.) Geol. Soc. America Bull., v. 52, no. 12, pt. 2, p. 1969.

Cloverdale sediments
Pleistocene to Recent: British Columbia, Canada.
J. E. Armstrong and W. C. Brown, 1953, Canada Geol. Survey Water Supply Paper 322, p. 11, map.

Clovis beds
Pleistocene: New Mexico.
Ernst Antevs, 1935, Acad. Nat. Sci. Phila. Proc., v. 87, p. 305–306.

Cloyd conglomerate member (of Price formation)
Mississippian: Virginia.
Charles Butts, 1940, Va. Geol. Survey Bull. 52, pt. 1, p. 343, 346, 347.

Coahuila group
Lower Cretaceous: Coahuila, Durango, and Nuevo Leon, Mexico, and Texas.
R. W. Imlay, 1940, Geol. Soc. America Bull., v. 51, no. 1, p. 124–125.

Coal Brook member (of Stellarton series)
Pennsylvanian: Nova Scotia, Canada.
W. A. Bell, 1940, Canada Geol. Survey Mem. 225, p. 34–43 [1941].

Coal City limestone
Pennsylvanian (Des Moines): Iowa, Missouri, and Oklahoma.
L. M. Cline, 1941, Am. Assoc. Petroleum Geologists Bull, v. 25, no. 1, p. 59–60, 64.

Coal Creek serpentine
Precambrian: Texas.
V. E. Barnes, 1940, *in* Geol. Soc. America [Guidebook] 53d Ann. Meeting, p. 53 (geol. map).

Coaldale chert
Ordovician(?): Nevada.
B. M. Page, 1949, (abs.) Geol. Soc. America Bull., v. 60, no. 12, pt. 2, p. 1943.

Coalspur beds
Paleocene: Alberta, Canada.
Canada Geological Survey, 1951, Canada Geol. Survey Map 1002A.

Coalvale cyclothem or formation
Pennsylvanian (Des Moines): Kansas.
G. E. Abernathy, 1937, Kans. Geol. Soc. Guidebook 11th Ann. Field Conf., p. 18, 20, 22; 1938, Kans. Acad. Sci. Trans., v. 41, p. 193, 195.

Coane formation
Pennsylvanian (Missouri series): New Mexico.
M. L. Thompson, 1942, N. Mex. State Bur. Mines Min. Res. Bull. 17, p. 27, 60–61.

Coatzintla formation
Oligocene: Vera Cruz, Mexico.
Ramiro Robles Ramos, 1942, Irrigación en Mexico, v. 23, no. 3, p. 45 (correlation chart).
Luis Limón-Gutiérrez, 1950, Asociación Mexicana Geólogos Petroleros Bol., v. 2, no. 10, p. 617–619.

Cobalt tillite or conglomerate (in Gowganda formation)
Precambrian (Huronian): Ontario, Canada.
A. P. Coleman, 1926, Ice ages recent and past: New York, MacMillan Co., p. 220–226.

Coban limestone
Cretaceous: Guatemala.
Karl Sapper, 1899, Petermanns geog. Mitt. Ergänzungsbd. 27, Heft 127, p. 65; 1937, Mittelamerika, Handbuch der regionalen Gelogie: Heidelburg, Band 8, Abt. 4a, Heft 29, p. 28–29.

Cobb Mountain volcanics
Quaternary: California.
J. C. Brice, 1953, Calif. Dept. Nat. Res., Div. Mines Bull. 166, p. 12, 37, pl. 7.

Cobre series
Eocene: Cuba.
Stephen Taber, 1931, Jour. Geology, v. 39, no. 6, p. 537–541; 1934, Geol. Soc. America Bull., v. 45, no. 8, p. 576–581, pl. 59.

Cobwebb basalt
Pliocene, lower (?): Arizona.
S. G. Lasky and B. N. Webber, 1949, U. S. Geol. Survey Bull. 961, p. 34–35.

Cochixtla beds
Lower Cretaceous: Michoacan, Mexico.
E. J. Guzman, 1950, Asociación Mexicana Geólogos Petroleros Bol., v. 2, no. 2, strat. columns.

Cochrane glacial substage
Pleistocene (Wisconsin): North America.
Kirk Bryan and L. L. Ray, 1940, Smithsonian Misc. Coll., v. 99, no. 2, p. 68.

Cochrane limestone member (of Chimneyhill formation)
Lower Silurian: Oklahoma.
R. A. Maxwell, 1936, Northwestern Univ. Summaries of Doctoral Dissert., v. 4, p. 132, 133.

Cockrum sandstone
Upper Cretaceous: Kansas.
B. F. Latta, 1941, Kans. State Geol. Survey Bull. 37, p. 73–79.

Cocoran clay
Pliocene, upper, to Pleistocene, middle: California (subsurface).
J. W. Frink and H. A. Kues, 1954, Am. Assoc. Petroleum Geologists Bull., v. 38, no. 11, p. 2357–2371.

Codrington College marl
Oligocene, lower: Barbados, British West Indies.
Alfred Senn, 1940, Am. Assoc. Petroleum Geologists Bull., v. 24, no. 9, p. 1581, 1584.

Codroy breccia
Mississippian: Newfoundland, Canada.
W. A. Bell, 1948, Canada Geol. Survey Bull. 10, p. 19.

Codroy series
Mississippian: Newfoundland, Canada.
A. O. Hayes and Helgi Johnson, 1937, Newfoundland Dept. Nat. Res. Inf. Circ. 3, p. 2, map; 1938, Newfoundland Geol. Survey Bull. 12, p. 11–12.

Codroy shale

Mississippian: Newfoundland, Canada.

A. O. Hayes and Helgi Johnson, 1938, Newfoundland Geol. Survey Bull. 12, p. 12–13.

Coe group

Middle Silurian (Niagaran): Illinois.

H. A. Lowenstam, 1949, Ill. State Geol. Survey Rept. Inv. 145, p. 18.

Coffee Creek formation

Mississippian: Oregon.

C. W. Merriam, 1942, Jour. Paleontology, v. 16, no. 3, p. 372.
C. W. Merriam and S. A. Berthiaume, 1942, Geol. Soc. America Bull., v. 54, no. 2, p. 149–151.

Coffin Butte volcanics

Eocene, middle: Oregon.

I. S. Allison, 1953, Oreg. Dept. Geology and Mineral Industries Bull. 37, p. 3–5.

Cohn cyclothem

Pennsylvanian: Illinois.

W. A. Newton and J. M. Weller, 1937, Ill. State Geol. Survey Rept. Inv. 45, p. 18.

Cohutta schist

Precambrian: Georgia.

A. S. Furcron, K. H. Teague, and J. L. Calver, 1946, (abs.) Geol. Soc. America Bull., v. 57, no. 12, pt. 2, p. 1195; 1947, Ga. Geol. Survey Bull. 53, p. 6–9.

Coker formation

Upper Cretaceous (Tuscaloosa group): Alabama.

L. C. Conant and W. H. Monroe, 1945, U. S. Geol. Survey Oil and Gas Inv. Prelim. Map 37.

Colchester granodiorite-quartz diorite

Devonian(?): Newfoundland, Canada.

H. J. MacLean, 1947, Newfoundland Geol. Survey Bull. 22, p. 8.

Coldbrookian series

Middle Cambrian: Nova Scotia, Canada.

A. W. Grabau, 1936, Paleozoic formations in the light of the pulsation theory, v. 1, Lower and Middle Cambrian pulsations: 2d ed., Peiping, China, University Press, Natl. Univ. Peking, p. 329–343.

Colebrook gravel

Pleistocene: British Columbia, Canada.

J. E. Armstrong and W. C. Brown, 1953, Canada Geol. Survey Water Supply Paper 322, p. 11, map.

Coleraine series

Pre-Ordovician: Quebec, Canada.

J. A. Dresser and T. C. Denis, 1944, Quebec Dept. Mines Geol. Rept. 20, p. 417, 426.

Coleraine shale or formation

Upper Cretaceous (Colorado series): Minnesota.

C. R. Stauffer *in* C. R. Stauffer and G. A. Thiel, 1933, Minn. Geol. Survey Bull. 23, p. 18.
H. R. Berquist, 1944, Jour. Paleontology, v. 18, no. 1, p. 8–10.

Colina limestone

Permian: Arizona.

James Gilluly, J. R. Cooper, and J. S. Williams, 1954, U. S. Geol. Survey Prof. Paper 266, p. 23–25.

Collierstown limestone
Middle Ordovician: Virginia.
B. N. Cooper and G. A. Cooper, 1946, Geol. Soc. America Bull., v. 57, no. 1, p. 90.

Collings Ranch conglomerate
Pennsylvanian: Oklahoma.
W. E. Ham, 1954, Am. Assoc. Petroleum Geologists Bull., v. 38, no. 9, p. 2035–2045.

Collingston conglomerate
See Collinston conglomerate.

Collinston conglomerate
Miocene to Pliocene: Utah.
Neal Smith, 1953, Intermountain Assoc. Petroleum Geologists [Guidebook] 4th Ann. Field Conf., p. 73, 75.
R. D. Adamson, C. T. Hardy, and J. Stewart Williams, 1955, Utah Geol. Soc. Guidebook 10, p. 2, 4.

Colón formation
Oligocene, middle: Cuba.
Jorge Brodermann, 1945, Soc. Cubana Ingenieros Rev., v. 42, no. 1, p. 129, chart facing p. 144.

Colonia andesitic tuffs and breccias
Cretaceous: Honduras.
R. H. Carpenter, 1954, Geol. Soc. America Bull., v. 65, no. 1, p. 27–28.

Colony Creek shale
Upper Pennsylvanian: Texas.
M. G. Cheney, 1948, Abilene Geol. Soc. [Guidebook] Spring Field Trip, June 11–12, p. 20.

Colony School conglomerate
Middle Pennsylvanian (Strawn): Texas.
F. B. Plummer, 1950, Tex. Univ. Bur. Geology Pub. 4329, p. 85.

Colorada quartz porphyry
Upper Mesozoic or Tertiary, lower: Sonora, Mexico.
W. G. Valentine, 1936, Geol. Soc. America Bull., v. 47, no. 1, p. 82–83.

Colorado limestone
Age not stated: Costa Rica.
D. F. MacDonald and others, 1919, [Costa Rica] La Gaceta, Diario Oficial, año 41, no. 138, p. 352.
B. N. Webber, 1942, Am. Inst. Mining and Metall. Engineers Tech. Pub. 1445, p. 3.

Colotepec formation
Pleistocene, upper: Oaxaca, Mexico.
R. H. Palmer and L. G. Hertlein, 1936, Calif. Acad. Sci. Bull. 35, pt. 2, p. 65.

Colpitts group
Middle Jurassic: Oregon.
R. L. Lupher, 1941, Geol. Soc. America Bull., v. 52, no. 2, p. 227, 247–248, 249–255.

Colpoy Bay member (of Amabel formation)
Middle Silurian (Niagaran): Ontario, Canada.
T. E. Bolton, 1953, Canada Geol. Survey Paper 53–23, p. 15–16.

Colton formation
Eocene: Utah.
E. M. Spieker, 1946, U. S. Geol. Survey Prof. Paper 205–D, p. 139.

Comal series

Cretaceous (Neocomian): Vera Cruz and Istmo de Tehuantepec, Mexico.

G. P. Salas and Ernesto Lopez Ramos, 1951, Asociación Mexicana Geólogos Petroleros Bol., v. 3, nos. 1–2, table 1.

Combs Mountain siltstone member (of Brodhead formation)

Lower Mississippian: Kentucky.

P. B. Stockdale, 1939, Geol. Soc. America Special Paper 22, p. 170–172.

Comet shale

Middle Cambrian: Nevada.

J. F. Mason *in* A. W. Grabau, 1936, Paleozoic formations in the light of the pulsation theory, v. 1, Lower and Middle Cambrian pulsations: 2d ed., Peiping, China, University Press, Natl. Univ. Peking, p. 274–276.

Comitán limestone

Cretaceous: Chiapas, Mexico.

Karl Sapper, 1937, Mittelamerika, Handbuch der regionalen Geologie: Heidelberg, Band 8, Abt. 4a, Heft 29, p. 29.

Commotion formation

Lower Cretaceous: British Columbia, Canada.

R. T. D. Wickenden and George Shaw, 1943, Canada Geol. Survey Paper 43–13, p. 5.

Comparo formation

Pliocene: Trinidad, British West Indies.

C. J. Maury, 1925, Bull. Am. Paleontology, v. 10, no. 42, p. 169 (17).

H. G. Kugler, 1936, Am. Assoc. Petroleum Geologists Bull., v. 20, no. 11, p. 1447, 1451 (chart).

Comparo Road beds

See Comparo formation.

Comstock formation

Eocene: Oregon.

F. E. Turner, 1938, Geol. Soc. America Special Paper 10, p. 21, 24.

Comus formation

Lower Ordovician: Nevada.

R. J. Roberts, 1951, Geology of the Antler Peak quadrangle, Nevada: U. S. Geol. Survey Geol. Quadrangle Map [GQ 10].

Comyn formation

Pennsylvanian (Morrow): Texas (subsurface).

M. G. Cheney, 1940, Am. Assoc. Petroleum Geologists Bull., v. 24, no. 1, p. 66, 85.

Conasauga series

Middle Cambrian: Southeastern United States.

A. W. Grabau, 1937, Paleozoic formations in the light of the pulsation theory, v. 3, Cambrovician pulsation, pt. 2, Appalachian, Palaeocordilleran, Pre-Andean, Himalayan and Cathaysian geosynclines: Peiping, China, University Press, Natl. Univ. Peking, p. 10, 282.

Concentrator volcanics

Upper Cretaceous(?): Arizona.

James Gilluly, 1937, Ariz. Univ. Bull., v. 8, no. 1, p. 27–32.

Concepción (Lower and Upper) series

Miocene, lower: Vera Cruz, Mexico.

J. B. Gibson, 1936, Soc. Geol. Mexicana Bol., tomo 9, no. 5, p. 282–284, correlation chart.

Concha limestone
Permian: Arizona.
James Gilluly, J. R. Cooper, and J. S. Williams, 1954, U. S. Geol. Survey Prof. Paper 266, p. 29–30.

Concord member (of Brasso formation)
Miocene: Trinidad, British West Indies.
H. G. Kugler, 1953, Vereinigung Schweizer Petroleum Geologen u. Ingenieure Bull., v. 20, no. 59, p. 53–54.

Condor member (of Swasey limestone)
Middle Cambrian: Nevada and Utah.
H. E. Wheeler, 1948, Nev. Univ. Bull., Geology and Mining Ser., no. 47, p. 39, fig. 5.

Confederation granophyre
Precambrian (Archean): Ontario, Canada.
J. D. Bateman, 1940, Jour. Geology, v. 48, no. 6, p. 631.

Coniston series
Precambrian (pre-Huronian): Ontario, Canada.
H. C. Cooke, 1943, Am. Jour. Sci., v. 241, no. 9, p. 568–577.

Connecting Point group
Precambrian: Newfoundland, Canada.
A. O. Hayes, 1948, Newfoundland Geol. Survey Bull. 32, p. 15–16.

Connell sandstone member (of Oil Creek formation)
Middle Ordovician: Texas (subsurface).
T. S. Jones and others, 1949, W. Tex. Geol. Soc. Strat. Problems Comm., Sept. 1949, p. 5. 6.
R. H. Schweers, 1949, Am. Assoc. Petroleum Geologists Bull., v. 33, no. 12, p. 2029–2036.

Conner facies (of Dunham dolomite)
Lower Cambrian: Vermont.
Philip Fowler, 1950, Vt. Geol. Survey Bull. 2, pl. 1.

Conrad sandstone member (of Sawtooth formation)
Jurassic: Alberta, Canada (subsurface).
J. D. Weir, 1949, Am. Assoc. Petroleum Geologists Bull., v. 33, no. 4, p. 551.

Consuelo formation
Eocene, upper: Cuba.
J. A. Cushman and P. J. Bermudez, 1949, Cushman Lab. Foram. Research Contrib., v. 25, pt. 2, p. 27, 43.
P. J. Bermudez, 1950, Soc. Cubana Historia Nat. Mem., v. 19, no. 3, p. 258–262.

Contadero formation
Upper Devonian: New Mexico.
F. V. Stevenson, 1944, Dallas Digest Joint Ann. Meeting, p. 94–95; 1945, Jour. Geology, v. 53, no. 4, p. 239–241.

Continental Peak formation
Eocene, upper(?): Wyoming.
R. L. Nace, 1939, Wyo. Geol. Survey Bull. 27, p. 22–25, pl. 1.

Contra Costa group
Miocene, upper, to Pliocene, middle: California.
C. K. Ham, 1952, Calif. Dept. Nat. Res., Div. Mines Special Rept. 22, p. 6 (fig. 3), 15.

Conway Cut siltstone member (of Brodhead formation)
Lower Mississippian: Kentucky.
P. B. Stockdale, 1939, Geol. Soc. America Special Paper 22, p. 170.

Cooking Lake member (of Woodbend formation)
Devonian: Alberta, Canada (subsurface).
D. B. Layer, chm., 1950, Am. Assoc. Petroleum Geologists Bull., v. 34, no. 9, p. 1823.

Cook Ranch rhyolites
Oligocene, middle: Montana.
Robert Scholten, K. A. Keenmon, and W. O. Kupsch, 1955, Geol. Soc. America Bull., v. 66, no. 4, p. 373–374, pl. 1.

Cook Ranch volcanics
Oligocene, middle: Montana.
Robert Scholten, K. A. Keenmon, and W. O. Kupsch, 1955, Geol. Soc. America Bull., v. 66, no. 4, p. 374, pl. 1.

Cooks limestone tongue (of Humber Arm series)
Middle Ordovician (Chazyan): Newfoundland, Canada.
T. N. Walthier, 1949, Newfoundland Geol. Survey Bull. 35, pt. 1, p. 23–24.

Coom Lake diorite-gabbro
Precambrian (Keweenawan?): Quebec, Canada.
J. M. Neilson, 1950, Quebec Dept. Mines Prelim. Rept. 238, p. 6–7.

Cooper Creek limestone
Pennsylvanian (Des Moines): Iowa, Missouri, and Nebraska.
L. M. Cline, 1941, Am. Assoc. Petroleum Geologists Bull., v. 25, no. 1, p. 65.

Cooper Peak dolomite
Lower Devonian: Nevada.
C. W. Merriam, 1940, Geol. Soc. America Special Paper 25, p. 35–36, pl. 1.

Copper City flow (in Portage Lake lava series)
Precambrian (middle Keweenawan series): Michigan.
W. S. White, H. R. Cornwall, and R. W. Swanson, 1953, U. S. Geol. Survey Geol. Quadrangle Map GQ 27 [1954].

Copperhill formation
Precambrian: Tennessee, Georgia, and North Carolina.
V. J. Hurst, 1955, Ga. Geol. Survey Bull. 63, p. 9–21.

Copper Mountain Group
Lower Devonian: Quebec, Canada.
A. M. Bell, 1951, Canadian Inst. Mining and Metallurgy Trans., v. 54, p. 241.

Coquille formation
Pleistocene, upper: Oregon.
E. M. Baldwin, 1945, Jour. Geology, v. 53, no. 1, p. 39–42.

Corbett sandstone
Lower Cretaceous (Bisbee group): New Mexico.
S. G. Lasky, 1938, Am. Assoc. Petroleum Geologists Bull., v. 22, no. 5, p. 533–534, fig. 2.

Corcoran member (of Price River formation)
Upper Cretaceous: Colorado.
R. G. Young, 1955, Geol. Soc. America Bull., v. 66, no. 2, p. 190–191.

Cordova dolomite
Silurian (Niagaran) : Illinois.
T. E. Savage *in* C. K. Swartz and others, 1942, Geol. Soc. America Bull., v. 53, no. 4, p. 537, Chart 3.

Corduroy member (of Supai formation)
[Pennsylvanian and/or Permian] : Arizona.
R. L. Jackson, 1951, Plateau, v. 24, no. 2, p. 86–88.

Cormorant limestone
Mississippian : Newfoundland, Canada.
W. A. Bell, 1948, Canada Geol. Survey Bull. 10, p. 21–22.

Cornelia quartz monzonite
Tertiary, lower (?) : Arizona.
James Gilluly, 1937, Ariz. Univ. Bull., v. 8, no. 1, p. 32–39.

Corner-of-the-Beach formation
Lower (?) Cambrian : Quebec, Canada.
C. H. Kindle, 1942, Am. Jour. Sci., v. 240, no. 9, p. 634.

Cornwallis formation
Upper Ordovician : Northwest Territories (Cornwallis Island), Canada.
R. Thorsteinsson and Y. O. Fortier, 1954, Canada Geol. Survey Paper 53–24, p. 8.

Corona formation
Upper Jurassic : San Luis Potosí, Mexico.
D. E. White and Jenaro González Reyna, 1946, U. S. Geol Survey Bull. 946–E, p. 134, 135.

Corral Creek glacial substage
Pleistocene (Wisconsin) : Colorado, Wyoming, and New Mexico.
L. L. Ray, 1938, (abs.) Geol. Soc. America Proc. 1937, p. 314; 1940, Geol. Soc. America Bull., v. 51, no. 12, pt. 1, p. 1860–1862.

Correo sandstone member (of Chinle formation)
Triassic : New Mexico.
V. C. Kelley and G. H. Wood, 1946, U. S. Geol. Survey Oil and Gas Inv. Prelim. Map 47.

Corta sandstone (in Joserita member of Lowell formation)
Lower Cretaceous : Arizona.
A. A. Stoyanow, 1949, Geol. Soc. America Mem. 38, p. 11.

Cortado formation
Pennsylvanian (Des Moines) : New Mexico.
J. A. Young, Jr., 1946, (abs.) Geol. Soc. America Bull., v. 57, no. 12, pt. 2, p. 1247.

Coryell syenite
Jurassic : British Columbia, Canada.
Goeffrey Gilbert, 1948, Structural geology of Canadian ore deposits : Montreal, Quebec, Canadian Inst. Mining and Metallurgy, p. 189.

Cosmo series
Precambrian (Timiskaming?) : Ontario, Canada.
W. C. Gussow, 1942, Ontario Dept. Mines Ann. Rept., v. 49, pt. 6, p. 4, 6.

Coso formation
Pliocene, upper, to Pleistocene, lower : California.
J. R. Schultz, 1937, Carnegie Inst. Washington Pub. 487, p. 79.

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Coso granodiorite
Upper Mesozoic: California.
V. C. Kelley, 1937, Econ. Geology, v. 32, no. 8, p. 994, 996; 1938, Calif. Jour. Mines and Geology, v. 34, no. 4, p. 514, pl. 7.

Costigan member (of Palliser formation)
Upper Devonian: Alberta, Canada.
R. deWit and D. J. McLaren, 1950, Canada Geol. Survey Paper 50–23, p. 6–7.

Cosumnes formation
Middle or Upper Jurassic: California.
N. L. Taliaferro, 1943, Calif. Dept. Nat. Res., Div. Mines Bull. 125, p. 283–284.

Cotton formation
Upper Devonian: Pennsylvania and New York.
G. H. Chadwick, 1936, N. Y. State Mus. Bull. 307, p. 78, 96.

†Cottondale formation
Upper Cretaceous: Alabama
L. C. Conant and W. H. Monroe, 1945, U. S. Geol. Survey Oil and Gas Inv. Prelim. Map 37.

Cotton Valley group
Upper Jurassic: Subsurface in Louisiana, Arkansas, Mississippi, and Texas.
H. K. Shearer, 1938, Am. Assoc. Petroleum Geologists Bull., v. 22, no. 6, p. 722, 723, 724–725.
W. B. Weeks, 1938, Am. Assoc. Petroleum Geologists Bull., v. 22, no. 8, p. 966–968.

Cottonwood beds
Lower Cretaceous: California.
F. M. Anderson, 1938, Geol. Soc. America Special Paper 16, p. 38 (table 1), 63–67.

Cottonwood Spring basalt
Tertiary: Texas.
S. S. Goldich and M. A. Elms, 1946, (abs.) Geol. Soc. America Bull., v. 57, no. 12, pt. 2, p. 1197; 1949, v. 60, no. 7, p. 1156–1159.

Couch formation
Pliocene, lower: Texas.
G. L. Evans, 1949, W. Tex. Geol. Soc. Guidebook Field Trip 2, Nov. 6–9, p. 5–6.

Council Spring limestone
Pennsylvanian (Missouri series): New Mexico.
M. L. Thompson, 1942, N. Mex. State Bur. Mines Min. Res. Bull. 17, p. 27, 62–63.

Cour d'Alene facies (of Belt series)
Precambrian: Alberta, Canada; and Montana.
C. L. Fenton and M. A. Fenton, 1937, Geol. Soc. America Bull., v. 48, no. 12, p. 1877.

Courtenay Bay formation
Upper Carboniferous: New Brunswick, Canada.
A. O. Hayes and B. F. Howell, 1937, Geol. Soc. America Special Paper 5, p. 116–117.

Cove quartz monzonite
Jurassic: California.
O. P. Jenkins, 1938, Geologic map of California (1:500,000): Calif. Dept. Nat. Res., Div. Mines, sheet 4.

Covel conglomerate (in Summum cyclothem)
Pennsylvanian: Illinois.
H. B. Willman, 1939, Ill. Acad. Sci. Trans., v. 32, no. 2, p. 174–176.

Cove Mountain member (of Pocono formation)
Lower Mississippian: Pennsylvania.
Bradford Willard and A. B. Cleaves, 1938, Pa. Geol. Survey, ser. 4, Bull. G 8, p. 18.

Cow Bayou member (of Logansport formation)
Paleocene (Midway): Louisiana.
D. P. Meagher and L. C. Aycock, 1942, La. Dept. Conserv. Geol. Pamph. 3, p. 12–16.
G. E. Murray, Jr. and E. P. Thomas, 1945, Am. Assoc. Petroleum Geologists Bull., v. 29, no. 1, p. 57.

Cowden anhydrite member (of Salado formation)
Permian: Texas and New Mexico.
G. A. Kroenlein, 1939, Am. Assoc. Petroleum Geologists Bull., v. 23, no. 11, p. 1689.
S. C. Giesey and F. F. Fulk, 1941, Am. Assoc. Petroleum Geologist Bull., v. 25, no. 4, p. 603.

Cowesett granite
Mississippian(?): Rhode Island.
A. W. Quinn, 1952, Bedrock geology of the East Greenwich quadrangle, Rhode Island: U. S. Geol. Survey Geol. Quadrangle Map [GQ 17].

Cowley formation
Mississippian (Meramec series): Kansas (subsurface).
Wallace Lee *in* G. E. Abernathy, R. P. Keroher, and Wallace Lee, 1940, Kans. State Geol. Survey Bull. 31, p. 15.

Cowley Canyon limestone member (of Wasatch group)
Paleocene or Eocene, lower: Utah.
J. S. Williams, 1948, Geol. Soc. America Bull., v. 59, no. 11, p. 1144–1145.

Cow Springs sandstone
Upper Jurassic: Arizona, Colorado, New Mexico, and Utah.
E. D. McKee *in* C. R. Longwell, 1949, Geol. Soc. America Mem. 39, p. 46 (fig. 6).
J. W. Harshbarger, C. A. Repenning, and R. L. Jackson, 1951, N. Mex. Geol. Soc. Guidebook 2d Field Conf., p. 97–98.

Coxcomb granodiorite
Upper Jurassic(?): California.
W. J. Miller, 1944, Calif. Jour. Mines and Geology, v. 40, no. 1, p. 64, pl. 3.

Coyote Butte formation
Permian: Oregon.
C. W. Merriam, 1942, Jour. Paleontology, v. 16, no. 3, p. 372.
C. W. Merriam and S. A. Berthiaume, 1943, Geol. Soc. America Bull., v. 54, no. 2, p. 156–158.

Cozzette member (of Price River formation)
Upper Cretaceous: Colorado.
R. G. Young, 1955, Geol. Soc. America Bull., v. 66, no. 2, p. 191.

Crabbottom sandstone (in Wills Creek formation)
Silurian: Virginia and West Virginia.
C. K. Swartz and F. M. Swartz, 1940, (abs.) Geol. Soc. America Bull., v. 51, no. 12, pt. 2, p. 2008.

Crabbs limestone
Mississippian: Newfoundland, Canada.
W. A. Bell, Canada Geol. Survey Bull. 10, p. 23–24.

Crab Creek formation
Tertiary: Utah.
R. E. Metter, 1955, Dissert. Abs., v. 15, no. 6, p. 1047.

Craborchard cyclothem (including Craborchard limestone)
Pennsylvanian: Illinois.
J. M. Weller, L. G. Henbest, and C. O. Dunbar *in* C. O. Dunbar and L. G. Henbest, 1942, Ill. State Geol. Survey Bull. 67, p. 16, 17 (fig. 3) [1943].

Craddock clay
Pennsylvanian (Cisco): Texas.
F. B. Plummer, H. B. Bradley, and K. F. Pence, 1949, Tex. Univ. Bur. Econ. Geol. Pub. 4915, p. 21–23.

Cragleith formation
Ordovician: Ontario, Canada.
B. A. Liberty, 1955, Geol. Assoc. Canada Proc., v. 7, pt. 1, p. 145.

Craig limestone member (of Rogersville shale)
Middle Cambrian: Tennessee.
John Rodgers, 1943, Geologic map of Copper Ridge district, Hancock, and Grainger Counties, Tennessee (1 : 24,000): U. S. Geol. Survey Strategic Minerals Inv. Prelim. Map.
John Rodgers and D. F. Kent, 1948, Tenn. Dept. Conserv. Div. Geology Bull. 55, p. 10.

Cram Hill formation
Middle Ordovician: Vermont.
L. W. Currier and R. H. Jahns, 1941, Geol. Soc. America Bull., v. 52, no. 9, p. 1493–1496.

Cranberry Point formation
Upper Carboniferous: New Brunswick, Canada.
A. O. Hayes and B. F. Howell, 1937, Geol. Soc. America Special Paper 5, p. 115–116.

Cranbourne series
Devonian: Quebec, Canada.
Carl Tolman, 1936, Canada Geol. Survey Mem. 199, p. 14–16.

Crane member (of Mt. Simon formation)
Upper Cambrian: Illinois (subsurface).
J. S. Templeton, Jr., 1950, Ill. Acad. Sci. Trans., v. 43, p. 154.

Cranesville dolomite
Lower Ordovician: (upper Canadian) New York.
D. W. Fisher, 1954, Geol. Soc. America Bull., v. 65, no. 1, p. 76 (fig. 2), 77, 92–93.

Crater Creek basalt
Tertiary and Quaternary: Alaska (Aleutian Islands).
F. M. Byers, Jr., and others, 1947, U. S. Geol. Survey Alaskan Volcano Inv. Rept. 2, pt. 3, p. 25–26.

Cravatt formation
Lower Devonian: Oklahoma.
R. A. Maxwell, 1936, Northwestern Univ. Summaries of Doctoral Dissert., v. 4, p. 132, 134.

Crazy Hollow formation
Tertiary: Utah.
E. M. Spieker, 1949, Utah Geol. Soc. Guidebook 4, p. 36–37, geol. map.

Crazy Johnson member (of Chadron formation)
Oligocene, lower: South Dakota.
John Clark, 1954, Carnegie Mus. Annals, v. 33, art. 11, p. 197–198.

Creggan Creek formation
Precambrian and Cambrian: British Columbia, Canada.
W. H. White, 1950, British Columbia Bur. Mines Ann. Rept. 1949, p. A–171—A–172.

Creighton granite
Precambrian: Ontario, Canada.
W. H. Collins, 1936, Royal Soc. Canada Trans., sec. 4, v. 30, p. 34–35.

Creola member (of Yegua formation)
Eocene (Claiborne): Louisiana.
H. B. Stenzel, 1939, Tex. Univ. Bur. Econ. Geol. Pub. 3945, pt. 2, p. 879, 881 [1940].

Crescent Hill basalt
Miocene and/or Pliocene: Wyoming.
A. D. Howard, 1937, Geol. Soc. America Special Paper 6, p. 17–19, 78.

Crescent Lake formation
Middle Ordovician(?): Newfoundland, Canada.
G. H. Espenshade, 1937, Newfoundland Geol. Survey Bull. 6, p. 10.

Crest Hill granite.
Precambrian: Virginia.
L. R. Thiesmeyer, 1938, (abs.) Geol. Soc. America Bull., v. 49, no. 12, pt. 2, p. 1963.

Creston [formation]
Eocene: California.
O. P. Jenkins, 1938, Geologic map of California (1:500,000): Calif. Dept. Nat. Res., Div. Mines, sheet 4.

Crête formation
Oligocene, middle: Haiti.
Jacques Butterlin, [1952], Résumé de thèse présentée à la Sorbonne, La géologie de la République d'Haïti et ses rapports avec celle des regions voisines (mimeo.), p. 4; 1954, Inst. Français d'Haïti Mem. 1, p. 63.

Crete formation
Pleistocene: Nebraska.
G. E. Condra, E. C. Reed, and E. D. Gordon, 1947, Nebr. Geol. Survey Bull. 15, p. 24–25.

Crevasse Canyon formation
Upper Cretaceous: New Mexico and Arizona.
J. E. Allen and Robert Balk, 1954, N. Mex. State Bur. Mines Min. Res. Bull. 36, p. 91–92.

Crisfield member (of Salt Plain formation)
Permian: Kansas.
G. H. Norton, 1939, Am. Assoc. Petroleum Geologists Bull., v. 23, no. 12, p. 1788.
R. C. Moore, J. C. Frye, and J. M. Jewett, 1944, Kans. State Geol. Survey Bull. 52, p. 159.

Croker Bay limestone
Middle or Upper Ordovician: Northwest Territories (Devon Island), Canada.
V. E. Kurtz, A. H. McNair, and D. B. Wales, 1952, Am. Jour. Sci., v. 250, no. 9, p. 640–641.

Crook formation
Upper Devonian: Arizona.
E. N. Harshman *in* M. N. Short and others, 1943, Ariz. Bur. Mines Bull. 151, Geol. Ser. 16, p. 27.

Crooked Creek formation
Pleistocene: Kansas.
C. W. Hibbard, 1949, Mich. Univ. Mus. Paleontology Contr., v. 7, no. 4, p. 70–71.

Crooked Lake granite pebble conglomerates
Precambrian (Knife Lake): Minnesota.
J. W. Gruner, 1941, Geol. Soc. America Bull., v. 52, no. 10, p. 1583, 1613.

Crossen trachyte
Tertiary: Texas.
S. S. Goldich and M. A. Elms, 1946, (abs.) Geol. Soc. America Bull., v. 57, no. 12, pt. 2, p. 1197; 1949, v. 60, no. 7, p. 1151–1153.

Crossville sandstone (in Duskin Creek formation)
Pennsylvanian: Tennessee.
H. R. Wanless, 1946, Geol. Soc. American Mem. 13, p. 37, 44, 139.

Crow Creek member (of Pierre shale)
Upper Cretaceous: South Dakota.
J. P. Gries and E. P. Rothrock, 1941, S. Dak. State Geol. Survey Rept. Inv. 38, p. 5, 14–17.

Croweburg cyclothem or formation
Pennsylvanian (Des Moines): Kansas.
G. E. Abernathy, 1937, Kans. Geol. Soc. Guidebook 11th Ann. Field Conf., p. 18, 20, 22; 1938, Kans. Acad. Sci. Trans., v. 41, p. 193, 195.

Crow Indian Lake member (of Sawtooth formation)
Jurassic: Alberta, Canada (subsurface).
J. D. Weir, 1949, Am. Assoc. Petroleum Geologists Bull. v. 33, no. 4, p. 552.

Crow Mountain sandstone member (of Chugwater formation)
Triassic: Wyoming.
J. D. Love, 1939, Geol. Soc. America Special Paper 20, p. 44.

Croydon group
Upper Devonian(?) (Oliverian magma series): New Hampshire.
C. A. Chapman and others, 1938, Geologic map and structure sections of the Mascoma quadrangle, New Hampshire, (1:62,500): N. H. Highway Dept.
C. A. Chapman, 1939, Geol. Soc. American Bull., v. 50, no. 1, p. 143–145.

Crucero tuffaceous dacite flows
Cretaceous: Honduras.
R. H. Carpenter, 1954, Geol. Soc. America Bull., v. 65, no. 1, p. 28, pl. 1 (geol. map).

Cruiser formation
Lower Cretaceous: British Columbia, Canada.
R. T. D. Wickenden and George Shaw, 1943, Canada Geol. Survey Paper 43–13, p. 8–10.

Crystal gray quartz monzonite
Precambrian (middle Keweenawan): Minnesota.
M. S. Woyski, 1949, Geol. Soc. America Bull., v. 60, no. 6, p. 1002, 1008–1009.

Crystal River formation
Eocene, upper (Ocala group): Florida.
H. S. Puri, 1953, (abs.) Jour. Sed. Petrology, v. 23, no. 2, p. 130.

Crystal Spring formation

Precambrian (Pahrump series) : California.

D. F. Hewett, 1940, Washington Acad. Sci. Jour., v. 30, no. 6, p. 240.

Cualac quartzite

Triassic(?) : Guerrero, Mexico.

E. J. Guzman, 1950, Asociación Mexicana Geólogos Petroleros Bol., v. 2, no. 2, p. 108–111.

Cuare limestone

Jurassic: Trinidad, British West Indies.

H. H. Renz, 1942, 8th Am. Sci. Cong. Proc., v. 4, p. 520.

H. G. Kugler, 1953, Vereinigung Schweizer Petroleum Geologen u. Ingenieure Bull., v. 20, no. 59, p. 31–32.

Cubierto shale (in Puente formation)

Miocene, upper: California.

M. L. Krueger, 1943, Calif. Dept. Nat. Res., Div. Mines Bull. 118, pt. 3, p. 363.

A. O. Woodford, T. G. Moran, and J. S. Shelton, 1946, Am. Assoc. Petroleum Geologists Bull., v. 30, no. 4, p. 521.

Cubitas limestones

Eocene: Cuba.

H. J. MacGillavry, 1937, Geog. Geol. Meded. (Utrecht Univ.) Physiog.-Geol. Reeks, no. 14, p. 28, 30.

Cucamonga complex

Pre-Upper Cretaceous: California.

R. M. Alf, 1948, Geol. Soc. America Bull., v. 59, no. 11, p. 1107–1108.

Cucamonga fan deposits

Recent: California.

E. M. Mackevett, 1951, Calif. Dept. Nat. Res., Div. Mines Special Rept. 5, p. 11.

Cucamonga Canyon group

Age unknown: California.

K. J. Hsu, 1955, Calif. Univ. Dept. Geol. Sci. Bull., v. 30, no. 4, p. 259, map 1.

Cuche formation

Cretaceous (Aptian) : Trinidad, British West Indies.

H. H. Renz, 1942, 8th Am. Sci. Cong. Proc., v. 4, p. 523.

Cuche River beds

Cretaceous (Neocomian) : Trinidad, British West Indies.

A. G. Hutchinson, 1938, Bol. Geologia y Mineria (Venezuela), v. 2, nos. 2–4 (English ed.), p. 231, 235 (table).

Cuchillo Negro formation

Pennsylvanian (Derry) : New Mexico.

M. L. Thompson, 1942, N. Mex. State Bur. Mines Min. Res. Bull. 17, p. 27, 39.

Cuerbío basalt

Pleistocene: New Mexico.

C. E. Stearns, 1943, Jour. Geology, v. 51, no. 5, fig. 2; 1953, Geol. Soc. America Bull., v. 64, no. 4, p. 476, 477, pl. 1.

Cuero formation

Miocene, upper: Texas.

A. W. Weeks, 1941, (abs.) Am. Assoc. Petroleum Geologists 26th Ann. Meeting Program, p. 20; 1945, Am. Assoc. Petroleum Geologists Bull., v. 29, no. 12, p. 1724–1726.

Cuesta del Cura limestone
Lower Cretaceous: Coahuila, Mexico.
R. W. Imlay, 1936, Geol. Soc. America Bull., v. 47, no. 7, p. 1125–1126.

Cuicatlán formation
Tertiary: Oaxaca, Mexico.
Tomás Barrera, 1946, Guía geológica de Oaxaca: Mexico Univ. Nac., Inst. Geología, p. 23, 24, 26.

Culebra dolomite member (of Rustler formation)
Upper Permian: New Mexico.
J. E. Adams, 1944, Am. Assoc. Petroleum Geologists Bull., v. 28, no. 11, p. 1614.

Culver Springs shale member (of Brodhead formation)
Lower Mississippian: Kentucky.
P. B. Stockdale, 1939, Geol. Soc. America Special Paper 22, p. 147–148.

Cumana formation
Lower Cretaceous: Trinidad, British West Indies.
H. G. Kugler, 1953, Vereinigung Schweizer Petroleum Geologen u. Ingenieure Bull., v. 20, no. 59, p. 32.

Cumberland facies (of Clinton formation)
Middle Silurian (Niagaran): Maryland and Virginia.
Charles Butts, 1940, Va. Geol. Survey Bull. 52, pt. 1, p. 238, 242–244.

Cummings member (of Mannville formation)
Lower Cretaceous: Alberta, Canada (subsurface).
A. W. Nauss, 1945, Am. Assoc. Petroleum Geologists Bull., v. 29, no. 11, p. 1614.

Cummings member (of Mount Head formation)
Carboniferous: Alberta, Canada.
R. J. W. Douglas, 1953, Alberta Soc. Petroleum Geologists 3d Ann. Field Conf. and Symposium, p. 68.

Cummingsville member (of Galena formation)
Middle Ordovician: Minnesota.
M. P. Weiss, 1955, Jour. Paleontology, v. 29, no. 5, p. 764–766.

Cummins Station shale member (of Muldraugh formation)
Lower Mississippian: Kentucky.
P. B. Stockdale, 1939, Geol. Soc. America Special Paper 22, p. 213–214.

Cunapo River argilinė
Paleocene: Trinidad, British West Indies.
H. G. Kugler, 1936, Am. Assoc. Petroleum Geologists Bull., v. 20, no. 11, p. 1451 (chart).

Cunapo-Southern horizon (of Turure formation)
Upper Cretaceous: Trinidad, British West Indies.
R. A. Liddle, [1928], The geology of Venezuela and Trinidad: Fort Worth, Tex., J. P. MacGowan, p. 439–440.

Cunningham granite
Precambrian: Georgia.
D. F. Hewett and G. W. Crickmay, 1937, U. S. Geol. Survey Water-Supply Paper 819, p. 29, 30.

Cunningham limestone
Precambrian and/or Cambrian: British Columbia, Canada.
S. S. Holland, 1954, British Columbia Dept. Mines Bull. 34, p. 16–17.

Cupido limestone
Lower Cretaceous: Coahuila, Mexico.
R. W. Imlay, 1937, Geol. Soc. America Bull., v. 48, no. 5, p. 606–607.

Currant tuff
Miocene, upper, or Pliocene, lower: Nevada.
G. T. Faust and Eugene Callaghan, 1948, Geol. Soc. America Bull., v. 59, no. 1, p. 33–40.

Currant Creek formation
Upper Cretaceous(?): Utah.
P. T. Walton, 1944, Geol. Soc. America Bull., v. 55, no. 1, p. 117–120.

Curry clay
Upper Pennsylvanian (Cisco): Texas.
F. B. Plummer *in* M. G. Cheney, 1948, Abilene Geol. Soc. [Guidebook] Spring Field Trip, June 11–12, p. 8.
F. B. Plummer and H. B. Bradley, 1949, Tex. Univ. Bur. Econ. Geology Pub. 4915, p. 17–21.

Curtin limestone
Middle Ordovician (Mohawkian): Pennsylvania.
G. M. Kay, 1943, Econ. Geology, v. 38, no. 3, p. 194, 197.

Curved Tree Point sandstone member (of Gething formation)
Lower Cretaceous: British Columbia, Canada.
F. H. McLearn and E. J. W. Irish, 1944, Canada Geol. Survey Paper 44–15, p. 8.

Cust Island sandstone member (of Gething formation)
Lower Cretaceous: British Columbia, Canada.
F. H. McLearn and E. J. W. Irish, 1944, Canada Geol. Survey Paper 44–15, p. 8.

Cutoff shaly member (of Bone Spring limestone)
Permian (Leonard series): Texas and New Mexico.
P. B. King, 1942, Am. Assoc. Petroleum Geologists Bull., v. 26, no. 4, p. 569–570, pl. 2.

Cutter formation
Upper Ordovician (Cincinnatian): New Mexico.
V. C. Kelley and Caswell Silver, 1952, N. Mex. Univ. Pubs. in Geology 4, p. 62–64, fig. 4.

Cutting dolomite
Lower Ordovician (Beekmantownian): Vermont.
W. M. Cady, 1945, Geol. Soc. America Bull., v. 56, no. 5, p. 524, 541–542.

Cutwell group
Ordovician: Newfoundland, Canada.
G. H. Espenshade, 1937, Newfoundland Geol. Survey Bull. 6, p. 12–13.

Cygnian substage
Pennsylvanian (Desmoinesian): Iowa, Kansas, Missouri, Nebraska, and Oklahoma.
W. V. Searight *in* W. B. Howe and W. V. Searight, 1953, Mo. Geol. Survey and Water Res. Rept. Inv. 14, pl. 1.

Cynthia Falls sandstone member (of Tuxedni formation)
Middle Jurassic: Alaska.
L. B. Kellum, 1945, N. Y. Acad. Sci. Trans., ser. 2, v. 7, no. 8, p. 203.

Dagmar limestone member (of Ute formation)
Cambrian: Utah and Idaho.
G. B. Maxey, 1955, Dissert. Abs., v. 15, no. 4, p. 558.

Dakin Hill member (of Littleton formation)
Lower Devonian: New Hampshire.
M. T. Heald, 1950, Geol. Soc. America Bull., v. 61, no. 1, p. 54–55, 70, 79.

Dalquier granite
Precambrian: Quebec, Canada.
W. W. Weber, 1951, Quebec Dept. Mines Prelim. Rept. 257, p. 7.

Dalquier quartz gabbro
Dalquier-Kayrand quartz gabbro
See Kayrand quartz gabbro.

Dana Bay beds
Devonian: Northwest Territories (Ellesmere Island), Canada.
W. H. Feilden and C. E. deRance, 1878, Geol. Soc. London Quart. Jour., v. 34, p. 559.

Dane member (of Pecatonica formation)
Middle Ordovician: Illinois.
J. S. Templeton and H. B. Willman, 1952, Tri-State Geol. Soc. Guidebook 16th Ann. Field Conf., p. 41, figs. 3, 10, 12, 16.

Dangkulo limestone
See Dankuro limestone.

Daniels conglomerate
Tertiary, middle(?): Arizona.
James Gilluly, 1937, Ariz. Univ. Bull., v. 8, no. 1, p. 46–47.

Danish Village formation
Precambrian (upper Algonkian): North Greenland.
V. E. Kurtz and D. B. Wales, 1950, Okla. Acad. Sci. Proc., v. 31, p. 83, 85.

Dankuro limestone
Recent: Mariana Islands (Tinian).
Risaburo Tayama, 1939, Correlation of the strata of the South Sea Islands: Geol. Soc. Japan Jour., v. 46, no. 549, p. 346 (correlation table) [English translation in library of U. S. Geol. Survey]; 1952, Coral reefs in the South Seas: Japan Hydrog. Office Bull., v. 11, p. 58, table 4 [English translation in library of U. S. Geol. Survey, p. 69].

Danmarks Fjord dolomite
Lower Ordovician (Lower Canadian?): North Greenland.
Erdhart Frankl, 1955, Meddel. om Grønland, bind 103, nr. 7, p. 13, 18, 32.

Dantzic group
Lower Cambrian and Precambrian(?): Newfoundland, Canada.
T. N. Walthier, 1950, N. Y. Acad. Sci. Trans., ser. 2, v. 12, no. 7, p. 210.

Dantzler formation
Cretaceous (Comanche): Subsurface in Mississippi and Louisiana.
R. T. Hazzard, B. N. Blanpied, and W. C. Spooner, 1947, Shreveport Geol. Soc. 1945 Ref. Rept., v. 2, p. 477.

Danville injection gneiss
Middle Silurian: Maine.
L. W. Fisher, 1937, (abs.) Geol. Soc. America Proc. 1936, p. 71.

Darling Creek glaciation

Pleistocene (pre-Wisconsin) : Alaska.

T. L. Péwé, 1952, (abs.) Geol. Soc. America Bull., v. 63, no. 12, pt. 2, p. 1289.

T. L. Péwé *in* T. L. Péwé and others, 1953, U. S. Geol. Survey Circ. 289, p. 9, 13 (table 1).

Darrough felsite

Permian(?) : Nevada.

H. G. Ferguson and S. H. Cathcart, 1954, U. S. Geol. Survey Geol. Quadrangle Map GQ 40.

Dartmouth River series

Silurian and Devonian: Quebec, Canada.

H. W. McGerrigle, 1950, Quebec Dept. Mines Geol. Rept. 35, p. 24.

Darty limestone.

Mississippian (Kinderhookian) : Illinois.

J. M. Weller and others, 1948, Geol. Soc. America Bull., v. 59, no. 2, p. 153, Chart 5, column 73.

Darwin quartz diorite

Upper Mesozoic: California.

V. C. Kelley, 1937, Econ. Geology, v. 32, no. 8, p. 992, 996; 1938, Calif. Jour. Mines and Geology, v. 34, no. 4, p. 514–516, pl. 7.

Dastur metagabbro

Precambrian: Quebec, Canada.

K. R. Dawson, 1950, Canada Geol. Survey Paper 50–3, p. 12, 13.

Dauphin shale

Ordovician: Pennsylvania.

Bradford Willard, 1943, Geol. Soc. America Bull., v. 54, no. 8, p. 1069 (footnote), 1070, 1090, 1118.

Dauversière granite

Precambrian: Quebec, Canada.

P. E. Imbault, 1951, Quebec Dept. Mines Prelim. Rept. 250, p. 8.

David formation

Eocene, upper: Panama.

Karl Sapper, 1937, Mittelamerika, Handbuch der regionalen Geologie: Heidelberg, Band 8, Abt. 4a, Heft 29, p. 131, 134 (correlation chart).

A. A. Olsson, 1942, 8th Am. Sci. Cong. Proc., v. 4, p. 236–237.

David Lake group

Precambrian: Quebec, Canada.

R. B. Graham, 1951, Canadian Mining Jour., v. 72, no. 9, p. 65–66.

Davidson evaporite

Devonian: Saskatchewan, Canada (subsurface).

A. D. Baillie, 1953, Manitoba Dept. Mines and Nat. Res. Mines Br. Pub. 52–5, p. 30.

Davidson formation

Jurassic: Subsurface in Saskatchewan and Manitoba, Canada.

J. R. Ower, 1953, Canadian Inst. Mining and Metallurgy Trans., v. 56, p. 397.

Davidson granodiorite

Miocene(?) : Nevada.

V. P. Gianella, 1934, Mining and Metallurgy, v. 15, no. 331, p. 299; 1936, Nev. Univ. Bull., v. 30, no. 9, p. 64–68.

Davis formation or cyclothem (including Davis sandstone)
Pennsylvanian: Illinois.
J. M. Weller, 1940, Ill. State Geol. Survey Rept. Inv. 71, p. 39, 41.

Davistown sandstone
Permian: Pennsylvania.
W. O. Hickok, IV, and F. T. Moyer, 1940, Pa. Geol. Survey, ser. 4, Bull. C 26, p. 151.

Davy Lake breccia
Precambrian: Quebec, Canada.
Jacques Claveau, 1949, Quebec Dept. Mines Geol. Rept. 37, p. 28–29.

Dawes sandstone
Middle Silurian (Niagaran): New York.
Tracy Gillette, 1947, N. Y. State Mus. Bull. 341, p. 99–100.

Dawn member (of Red Rose formation)
Upper Jurassic and Lower Cretaceous: British Columbia, Canada.
R. E. Sommers, 1955, British Columbia Bur. Mines Ann. Rept. 1954, p. A89–A90.

Dawson Bay formation
Devonian: Manitoba, Canada (subsurface).
A. D. Baillie, 1953, Manitoba Dept. Mines and Nat. Res. Pub. 52–5, p. 26–27.

Daysville formation
Middle Ordovician: Illinois.
J. S. Templeton and H. B. Willman, 1952, Tri-State Geol. Soc. Guidebook 16th Ann. Field Conf., p. 21, figs. 3, 12.

Dead Horse conglomerate member (of Manitou formation)
Lower Ordovician: Colorado.
N. W. Bass and S. A. Northrop, 1953, Am. Assoc. Petroleum Geologists Bull., v. 37, no. 5, p. 905–906.

Deadman quartzite
Precambrian: Arizona.
E. D. Wilson, 1938, *in* Ariz. Bur. Mines Bull. 145 (Geol. Ser. 12), pl. 3; 1939, Geol. Soc. America Bull., v. 50, no. 7, p. 1118, 1123.

Deadmans Cove member (of Giles Cove formation)
Ordovician: Newfoundland, Canada.
G. R. Heyl, 1937, Newfoundland Geol. Survey Bull. 8, p. 10.

Dean formation
Precambrian: Georgia.
V. J. Hurst, 1955, Ga. Geol. Survey Bull. 63, p. 40–45.

Dean sandstone
Permian (Wolfcamp): Texas (subsurface).
Lamar McLennan, Jr., and H. W. Bradley, 1951, Am. Assoc. Petroleum Geologists Bull., v. 35, no. 4, p. 899, 903.

Deansboro member (of Coeymans limestone)
Lower Devonian (Helderbergian): New York.
L. V. Rickard, 1955, N. Y. Geol. Assoc. Guidebook 27th Ann. Meeting, p. 7.

DeBeque formation
Paleocene and Eocene, lower: Colorado.
H. E. Wood, 2d, and others, 1941, Geol. Soc. America Bull., v. 52, no. 1, p. 18, pl. 1.

Debolt formation
Mississippian: Alberta, Canada (subsurface).
G. Macauley, 1955, (abs.) Am. Assoc. Petroleum Geologists and Alberta Soc. Petroleum Geologists Program Western Canada Regional Meeting and 5th Ann. Field Trip, p. 21.

Debris Dam sandstone
Upper Cretaceous: California.
B. M. Page, J. G. Marks, and G. W. Walker, 1951, Am. Assoc. Petroleum Geologists Bull., v. 35, no. 8, p. 1739–1743.

Decie member (of Duff formation)
Oligocene and younger (?): Texas.
W. N. McAnulty, 1955, Geol. Soc. America Bull., v. 66, no. 5. p. 553, pl. 1.

Deer diorite
Pre-Upper Cretaceous: California.
R. M. Alf, 1948, Geol. Soc. America Bull., v. 59, no. 11, p. 1109–1112.

Deer Bay formation
Lower Cretaceous: Northwest Territories (Ellef Ringnes Island), Canada.
W. W. Heywood, 1955, Canadian Mining and Metall. Bull., v. 48, no. 514, p. 60, 61.

Deer Island member (of Winnipeg formation)
Ordovician: Saskatchewan and Manitoba, Canada.
W. O. Kupsch, 1953, Saskatchewan Dept. Nat. Res. Rept. 10, p. 11.
G. J. Genik, 1954, Alberta Soc. Petroleum Geologists News Bull., v. 2, no. 5, p. 1.

Deer Lake [group]
Mississippian: Newfoundland, Canada.
1954, Geological map of Newfoundland (1:760,320): Newfoundland Geol. Survey.

Deer Lake syenite
Precambrian: Ontario, Canada.
Jack Satterly and D. F. Hewitt, 1955, Ontario Dept. Mines Geol. Circ. 2, p. 5.

Deerpark stage
Lower Devonian (Ulsterian): New York.
G. A. Cooper and others, 1942, Geol. Soc. America Bull., v. 53, no. 12, pt. 1, p. 1733, Chart 4.

Deer Plain formation
Pleistocene (Wisconsin): Illinois and Missouri.
W. W. Rubey, 1952, U. S. Geol. Survey Prof. Paper 218, p. 90–96.

Deer Rips lime-silicate gneiss
Middle Silurian: Maine.
L. W. Fisher, 1937, (abs.) Geol. Soc. America Proc. 1936, p. 71.

De Grey member (of Pierre shale)
Upper Cretaceous: South Dakota.
D. R. Crandell, 1950, Am. Asso. Petroleum Geologists Bull., v. 34, no. 12, p. 2341, 2343, table 1.

Delaney gravel
[Quaternary]: Texas.
R. W. Mathis, 1944, Jour. Sed. Petrology, v. 14, no. 2, p. 87–88.

Delano Peak latite member (of Bullion Canyon volcanics)
Tertiary: Utah.
Eugene Callaghan, 1939, Am. Geophys. Union Trans. 20th Ann. Meeting, pt. 3, p. 442, 445.

Delassus formation
Cambrian (Cambric): Missouri.
[C. R.] Keyes, 1941, Pan-Am. Geologist, v. 75, no. 3, p. 239.

Delburne formation
Upper Devonian: Alberta, Canada.
J. M. Andrichuk and J. S. Wonfor, 1954, Am. Assoc. Petroleum Geologists Bull., v. 38, no. 12, p. 2505.

Del Cuerto formation
Pennsylvanian (Virgil): New Mexico.
M. L. Thompson, 1942, N. Mex. State Bur. Mines Min. Res. Bull. 17, p. 27, 72.

De Leon formation
Pennsylvanian (Lampasas): Texas (subsurface).
M. G. Cheney, 1940, Am. Assoc. Petroleum Geologists Bull., v. 24, no. 1.

Delevanian stage
Late Cretaceous: California.
P. P. Goudkoff, 1945, Am. Assoc. Petroleum Geologists Bull., v. 29, no. 7, p. 993–994.

Delia member (of Woodbend group)
Upper Devonian: Alberta, Canada.
H. R. Belyea, 1955, Canada Geol. Survey Paper 55–3, p. 4, 11–16.

Delight sand
Lower Cretaceous (Comanche series): Arkansas.
R. W. Imlay, 1944, U. S. Geol. Survey Oil and Gas Inv. Prelim. Chart 3.

Dellet sand member (of Moodys Branch marl)
Eocene (Jackson): Alabama.
H. B. Stenzel, 1952, Miss. Geol. Soc. [Guidebook] 9th Field Trip, p. 41.

Dellvale ash bed (in Ash Hollow member of Ogallala formation)
Pliocene: Kansas.
Ada Swineford, J. C. Frye, and A. B. Leonard, 1955, Jour. Sed Petrology, v. 25, no. 4, p. 254, fig. 1.

Delmore formation
Pliocene, middle: Kansas.
C. C. Williams and S. W. Lohman, 1949, Kans. State Geol. Survey Bull. 79, p. 57–59.

Deloro group
Precambrian (Keewatin): Ontario, Canada.
W. R. Dunbar, 1948 *in* Structural geology of Canadian ore deposits: Canadian Inst. Mining and Metallurgy, p. 443.

Delphi Station member (of Skaneateles formation)
Devonian: New York.
G. A. Cooper, 1941, Washington Acad. Sci. Jour., v. 31, no. 5, p. 180.

Delta glaciation
Pleistocene (Wisconsin): Alaska.
T. L. Péwé, 1952, (abs.) Geol. Soc. America Bull., v. 63, no. 12, pt. 2, p. 1289.
T. L. Péwé *in* T. L. Péwé and others, 1953, U. S. Geol. Survey Circ. 289, p. 9, 13 (table 1).

Delwood formation or cyclothem (including Delwood sandstone)
Pennsylvanian: Illinois.
J. M. Weller, 1940, Ill. State Geol. Survey Rept. Inv. 71, p. 39, 40.

Dement member (of Grand Detour formation)
Middle Ordovician: Illinois.
J. S. Templeton and H. B. Willman, 1952, Tri-State Geol. Soc. Guidebook 16th Ann. Field Conf., figs. 3, 10, 16.

Denault dolomite
Precambrian (Proterozoic): Quebec and Newfoundland (Laborador), Canada.
H. R. Rice, 1949, Canadian Mining Jour., v. 70, no. 9, p. 71–72.
J. M. Harrison, 1952, Canada Geol. Survey Paper 52–20, p. 8.

Denman formation
Upper Cretaceous: British Columbia, Canada.
J. L. Usher, 1952, Canada Geol. Survey Bull. 21, p. 25–26.

Denmar formation
Middle Mississippian: West Virginia.
Dana Wells, 1950, Am. Assoc. Petroleum Geologists Bull., v. 34, no. 5, p. 902–918.

Denmark member (of Sherman Fall formation)
Middle Ordovician (Mohawkian): New York, and Ontario, Canada.
G. M. Kay, 1937, Geol. Soc. America Bull., v. 48, no. 2, p. 267–268.

Densinyama formation
Eocene, upper: Mariana Islands (Saipan).
Risaburo Tayama, 1938, Geomorphology, geology, and coral reefs of Saipan Island: Tropical Industry Inst., Palau, South Sea Islands, Bull. 1 [English translation in library of U. S. Geol. Survey, p. 53–56].
Josiah Bridge in W. S. Cole and Josiah Bridge, 1953, U. S. Geol. Survey Prof. Paper 253, p. 8–9.

Depósito series
Oligocene: Istmo de Tehuantepec, Mexico.
J. B. Gibson, 1936, Soc. Geol. Mexicana Bol., tomo 9, no. 5, p. 280, correlation chart.

Depot Island formation
Permian: East Greenland.
Lauge Koch, 1929, Meddel. om Grønland, bind 73, afd. 2, nr. 1, p. 104, 111; nr. 2, p. 246.

Deputy formation
Middle Devonian: Indiana.
Guy Campbell, 1942, Geol. Soc. America Bull., v. 53, no. 7, p. 1060–1061.

Derry series
Pennsylvanian: New Mexico.
M. L. Thompson, 1942, N. Mex. State Bur. Mines Min. Res. Bull. 17, p. 26–31.

Desert member (of Blackhawk formation)
Upper Cretaceous: Utah.
R. G. Young, 1955, Geol. Soc. America Bull., v. 66, no. 2, p. 183, 186.

Dessa Dawn formation
Mississippian: British Columbia, Canada.
L. R. Laudon and others, 1949, Am. Assoc. Petroleum Geologists Bull., v. 33. no. 9, p. 1536–1540.

Dessau formation
Upper Cretaceous: Texas.
C. O. Durham, Jr., 1955, Corpus Christi Geol. Soc. [Guidebook] Ann. Field Trip, March 11–12, [p. 57], pl. 16.

Detroit glacial stage
Pleistocene: Oregon.
T. P. Thayer, 1939, Oreg. State Dept. Geology and Mineral Res. Bull. 15, p. 20, 23–24.

Deville formation
Lower Cretaceous: Alberta, Canada (subsurface).
P. C. Badgley, 1952, Canada Geol. Survey Paper 52–11, p. 7.

Devils Canyon member (of Modin formation)
Upper Triassic: California.
A. F. Sanborn, [1953], Stanford Univ. Abs. Dissert., v. 27, p. 436.

Devils Cove formation
Lower Cambrian: Newfoundland, Canada.
Frederick Betz, Jr., 1939, Newfoundland Geol. Survey Bull. 16, p. 13–14.

Devils Gate limestone
Middle and Upper Devonian: Nevada.
C. W. Merriam, 1940, Geol. Soc. America Special Paper 25, p. 16–17.

Devils Hollow division (of Lexington limestone)
Ordovician: Kentucky.
A. C. McFarlan and W. H. White, 1948, Am. Assoc. Petroleum Geologists Bull., v. 32, no. 8, p. 1640.

Dewey Lake redbeds
Permian (Ochoa series): Texas (subsurface).
L. R. Page and J. E. Adams, 1938, (abs.) Am. Assoc. Petroleum Geologists Bull., v. 22, no. 12, p. 1709; 1940, v. 24, no. 1, p. 62–63.

Dezadeash group
Lower Cretaceous: Yukon, Canada.
E. D. Kindle, 1953, Canada Geol. Survey Mem. 268, p. 35–37.

Diablo formation
Permian: Nevada.
H. G. Ferguson, S. W. Muller, and S. H. Cathcart, 1953, Geology of the Coaldale quadrangle, Nevada: U. S. Geol. Survey Geol. Quadrangle Map [GQ 23].

Diablo formation
Pliocene, lower: California.
B. L. Clark *in* C. H. Weaver and others, 1944, Geol. Soc. America Bull., v. 55, no. 5, p. 585, Chart 11.

Diamond Creek sandstone
Permian: Utah.
A. A. Baker and J. S. Williams, 1940, Am. Assoc. Petroleum Geologists Bull., v. 24, no. 4, p. 625.

Diamond Valley complex
Paleozoic and/or Mesozoic: California.
W. J. Miller, 1946, Geol. Soc. America Bull., v. 57, no. 5, p. 477–480.

Diana granite
Precambrian (Archean): Arizona.
B. E. Thomas, 1949, Econ. Geology, v. 44, no. 8, p. 666, 669.

Dicksburg Hills sandstone
Upper Pennsylvanian: Indiana.
C. A. Malott, 1939, (abs.) Ind. Acad. Sci. Proc., v. 48, p. 114; 1947, v. 57, p. 131 [1948].

Dicks River facies (of New Providence formation)
Lower Mississippian: Kentucky.
P. B. Stockdale, 1939, Geol. Soc. America Special Paper 22, p. 117–119.

Difunta formation
Upper Cretaceous: Coahuila, Mexico.
R. W. Imlay, 1936, Geol. Soc. America Bull., v. 47, no. 7, p. 1133–1135.

Dike Lake slate
Precambrian (Knife Lake): Minnesota.
J. T. Stark and V. G. Sleight, 1939, Geol. Soc. America Bull., v. 50, no. 7, p. 1032 (table 2), 1034.

Dillard limestone member (of Chimneyhill formation)
Lower Silurian: Oklahoma.
R. A. Maxwell, 1936, Northwestern Univ. Summaries of Doctoral Dissert., v. 4, p. 132, 134.

Dillon granite geneiss
Precambrian (pre-Beltian): Montana.
E. W. Heinrich, 1953, (abs.) Geol. Soc. America Bull., v. 64, no. 12, pt. 2, p. 1432.

Dime Box member (of Yegua formation)
Eocene: Texas.
H. D. McCallum, 1947, S. Tex. [Geol. Soc. Guidebook] 14th Ann. Meeting Field Trip, p. 4.

Dina member (of Mannville formation)
Lower Cretaceous: Alberta, Canada (subsurface).
A. W. Nauss, 1945, Am. Assoc. Petroleum Geologists Bull., v. 29, no. 11, p. 1613–1614.

Dinosaur Canyon sandstone member (of Moenave formation)
Upper Triassic(?): Arizona.
E. H. Colbert and C. C. Mook, 1951, Am. Mus. Nat. History Bull., v. 97, art. 3, p. 151–153.

Diozoptyxis shales
Upper Cretaceous (Turonian): Jamaica, British West Indies.
L. J. Chubb, 1955, Geol. Mag., v. 92, no. 3, p. 187–188.

Dip Creek formation
Paleocene: California.
N. L. Taliaferro, 1944, Am. Assoc. Petroleum Geologists Bull., v. 28, no. 4, p. 512–516.

Disappointment Bay formation
Upper Paleozoic or Mesozoic: Northwest Territories (Cornwallis Island), Canada.
R. Thorsteinsson and Y. O. Fortier, 1954, Canada Geol. Survey Paper 53–24, p. 13–14.

Disappointment Mountain conglomerate
Precambrian (Knife Lake): Minnesota.
J. W. Gruner, 1941, Geol. Soc. America Bull., v. 52, no. 10, p. 1583, 1592.

Dismal Lake granodiorite-gneiss
Precambrian: Manitoba, Canada.
Jorma Kalliokoski, 1952, Canada Geol. Survey Mem. 270, p. 27.

Divide cyclothem
Pennsylvanian: Illinois.
J. R. Ball, 1943, Ill. State Acad. Sci. Trans., v. 36, no. 2, p. 147, 150.

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Divisadero facies
Lower Jurassic: Vera Cruz, Mexico.
H. K. Erben, 1954, Soc. Geol. Mexicana Bol., tomo 17, no. 2, p. 35.

Divisidero rhyolite series
Tertiary, lower: Chihuahua, Mexico.
R. T. Donald, 1935, Eng. and Mining Jour., v. 136, no. 12, p. 614.

Dixie Valley formation
Lower Triassic: Nevada.
S. W. Muller, H. G. Ferguson, and R. J. Roberts, 1951, Geology of the Mount Tobin quadrangle, Nevada: U. S. Geol. Survey Geol. Quadrangle Map [GQ 7].

Dixon granite
Precambrian: New Mexico.
Evan Just, 1937, N. Mex. School Mines Bull. 13, p. 24–25.

Dobie volcanics
Precambrian (Keewatin): Ontario, Canada.
G. L. Fletcher and T. N. Irvine, 1954, Ontario Dept. Mines Ann. Rept., v. 63, pt. 5, p. 15.

Dodson member (of Cook Mountain formation)
Eocene (Claiborne): Louisiana.
J. Huner, Jr., 1939, La. Dept. Conserv. Geol. Bull. 15, p. 87–91.

Doe Creek sandstone (in Dunvegan formation)
Upper Cretaceous: Alberta and British Columbia, Canada.
P. S. Warren and C. R. Stelck, 1940, Royal Soc. Canada Trans., ser. 3, v. 34, sec. 4, p. 144.

Doe Creek sandstone member (of Marlow formation)
Permian: Oklahoma.
O. F. Evans, 1954, Okla. Acad. Sci. Proc., v. 33, p. 196–197.

Dogs Head andesites
Quaternary: Washington.
Jean Verhoogen, 1937, Calif. Univ. Dept. Geol. Sci. Bull., v. 24, no. 9, p. 286.

Dolet Hills member (of Logansport formation)
Paleocene (Midway): Louisiana.
D. P. Meagher and L. C. Aycock, 1942, La. Dept. Conserv. Geol. Pamph. 3, p. 12–16
G. E. Murray, Jr., and E. P. Thomas, 1945, Am. Assoc. Petroleum Geologists Bull., v. 29, no. 1, p. 57.

Dollond Arm Head quartz diorite
Devonian(?): Newfoundland, Canada.
H. J. MacLean, 1947, Newfoundland Geol. Survey Bull. 22, p. 8.

Dolman gneiss
Devonian: Newfoundland, Canada.
J. R. Cooper, 1954, Canada Geol. Survey Mem. 276, p. 21.

Dolomite Point formation
Cambrian (post-Lower Cambrian, pre-Upper Ozarkian). Northeast Greenland.
Christian Poulsen, 1930, Meddel. om Grønland, bind 74, nr. 12, p. 311.

Dombjerg paraschists
Precambrian: Northeast Greenland.
G. P. Leedal, 1952, Meddel. om Grønland, bind 142, nr. 6, p. 18.

Dome dacite (in Vipond formation)
Precambrian: Ontario, Canada.
B. S. W. Buffam, 1948, *in* Structural geology of Canadian ore deposits: Canadian Inst. Mining and Metallurgy, p. 459 (table).

Domenigoni granodiorite
See **Domenigoni Valley granodiorite.**

Domenigoni Valley granodiorite
Cretaceous: California.
E. S. Larsen, Jr., and N. B. Keevil, 1947, Geol. Soc. America Bull., v. 58, no. 6, p. 488.
E. S. Larsen, Jr., 1948, Geol. Soc. America Mem. 29, p. 69.

Domkirken series
Lower Permian (Saxonian): Northeast Greenland.
Emil Witzig, 1954, Meddel. om Grønland, bind 72, afd. 2, nr. 5, p. 8, 11, 25.

Dona Ana member (of Lake Valley formation)
Mississippian (Osage): New Mexico.
L. R. Laudon and A. L. Bowsher, 1941, Am. Assoc. Petroleum Geologists Bull., v. 25, no. 12, p. 2116, 2136–2138, fig. 8.

Donalda formation
Upper Devonian: Alberta, Canada.
J. M. Andrichuk and J. S. Wonfor, 1954, Am. Assoc. Petroleum Geologosts Bull., v. 38, no. 12, p. 2505.

Doneley limestone member (of Savanna formation)
Pennsylvanian (lower Desmoinesian): Oklahoma.
C. C. Branson, 1954, Okla. Acad. Sci. Proc., v. 33, p. 192, 193.

Donkey fanglomerate
Pliocene(?): Idaho.
C. P. Ross, 1947, Geol. Soc. America Bull., v. 58, no. 12, pt. 1, p. 1122.

Donnay beds
See **Donni sandstone member** (of Tagpochau limestone).

Donnelly glaciation
Pleistocene (Wisconsin): Alaska.
T. L. Péwé, 1952, (abs.) Geol. Soc. America Bull., v. 63, no. 12, pt. 2, p. 1289.
T. L. Péwé *in* T. L. Péwé and others, 1953, U. S. Geol. Survey Circ. 289, p. 9, 13 (table 1).

Donni sandstone member (of Tagpochau limestone)
Miocene, lower: Mariana Islands (Saipan).
Risaburo Tayama, 1938, Geomorphology, geology, and coral reefs of Saipan Island: Tropical Industry Inst., Palau, South Sea Islands, Bull. 1 [English translation in library of U. S. Geol. Survey, p. 61–63].
Josiah Bridge *in* W. S. Cole and Josiah Bridge, 1953, U. S. Geol. Survey Prof. Paper 253, p. 10–11.

Donny sandy tuff
See **Donni sandstone member** (of Tagpochau limestone).

Donovan formation
Lower Jurassic (Lias): Oregon.
R. L. Lupher, 1941, Geol. Soc. America Bull., v. 52, no. 2, p. 227, 229–235.

Dora member (of Bluebell formation)
Silurian: Utah.
Paul Billingsley *in* J. M. Boutwell, 1933, 16th Internat. Geol. Cong. [United States] Guidebook 17, Excursion C–1, p. 110 (fig. 14).
J. K. Rigby, 1952, Utah Geol. Mineralog. Survey Bull. 45, p. 23, 27, fig. 6.

Dorcheat member (of Schuler formation)
Upper Jurassic: Subsurface in Arkansas, Louisiana, and Texas.
F. M. Swain, 1944, Am. Assoc. Petroleum Geologists Bull., v. 28, no. 5, p. 602–609.

Doré Lake group
Precambrian: Quebec, Canada.
R. B. Graham, 1951, Quebec Dept. Mines Prelim. Rept. 259, p. 3.

Dorena welded tuff
Tertiary: Oregon.
D. M. Hausen, [1954], Miss. Acad. Sci., Jour., v. 5, p. 212–216.

Door Run shale member (of Allegheny formation)
Pennsylvanian: Ohio.
M. T. Sturgeon and W. M. Merrill, 1949, Ohio Jour. Sci., v. 49, no. 1, p. 3–11.

Dosados sand and shale member (of Moreno formation)
Upper Cretaceous: California.
M. B. Payne, 1941, (abs.) Geol. Soc. America Bull., v. 52, no. 12, pt. 2, p. 1954.

Dos Bocas formation
Miocene: Quintana Roo, Mexico.
Manuel Alvarez, Jr., 1954, Asociación Mexicana Geólogos Petroleros Bol., v. 6, nos. 5–6, p. 210.

Dos Palmas rhyolite
Miocene(?): California.
T. W. Dibblee, Jr., 1954, Calif. Dept. Nat. Res., Div. Mines Bull. 170, chap. 2, p. 24.

Dos Palos shale member (of Moreno formation)
Cretaceous and Paleocene(?): California.
M. B. Payne, 1941, (abs.) Geol. Soc. America Bull., v. 52, no. 12, pt. 2, p. 1953.

Dos Picachos gravels
Pleistocene and Recent: California.
N. L. Taliaferro, [1949], Geologic map of the Hollister quadrangle, Calif. (1:62,500): Calif. Dept. Nat. Res., Div. Mines [preprint?] Bull. 143, pl. 1.

Dot limestone
Middle Ordovician: Virginia.
R. L. Miller and W. P. Brosgé, 1950, U. S. Geol. Survey Oil and Gas Inv. Prelim. Map 104.

Doten Cove formation
Lower Cambrian: Newfoundland, Canada.
W. H. Twenhofel, 1947, Am. Jour. Sci., v. 245, no. 2, p. 92.

Dotsero formation
Upper Cambrian: Colorado.
C. F. Bassett, 1939, Geol. Soc. America Bull., v. 50, no. 12, pt. 1, p. 1855–1858.

Double Horseshoe cyclothem
Pennsylvanian: Indiana and Illinois.
J. W. Alexander, 1943, Ill. State Acad. Sci. Trans., v. 36, no. 2, p. 141, 142.

Doublet group
Precambrian (Proterozoic): Quebec, Canada.
W. F. Fahrig, 1951, Canada Geol. Survey Paper (Prelim. Map) 51–23.

Doucers marble and limestone
Cambrian: Newfoundland, Canada.
G. R. Heyl, 1937, Newfoundland Geol. Survey Bull. 8, p. 9–10.

Dough Hills member (of Fleming formation)
Miocene: Louisiana.
H. N. Fisk, 1940, La. Dept. Conserv. Geol. Bull. 18, p. 118, 158–161.

Doughnut formation
Carboniferous: Utah.
A. E. Granger and others, 1952, Utah Geol. Soc. Guidebook 8, p. 10–11.

Douglas Lake member (of Lenoir limestone)
Middle Ordovician: Tennessee.
Josiah Bridge, 1955, Geol. Soc. America Bull., v. 66, no. 6, p. 727–728, pl. 1.

Dowelltown member (of Chattanooga shale)
Upper Devonian: Tennessee and Alabama.
Guy Campbell, 1946, Geol. Soc. America Bull., v. 57, no. 9, p. 883–884, 886.

Downeys Bluff member (of Renault formation)
Mississippian (Chester): Illinois.
Elwood Atherton, 1947, Ill. Acad. Sci. Trans., v. 40, p. 129.

Doylesburg member (of Shippensburg formation)
Middle Ordovician (Bolarian): Pennsylvania.
L. C. Craig, 1949, Geol. Soc. America Bull., v. 60, no. 4, p. 715(fig. 1), 727–731.

Dragon formation
Jurassic or older: Venezuela, and Trinidad, British West Indies.
H. G. Kugler, 1953, Vereinigung Schweizer Petroleum Geologen u. Ingenieure Bull., v. 20, no. 59, p. 30.

Dragonian age
Paleocene: North America.
H. E. Wood, 2d, and others, 1941, Geol. Soc. America Bull., v. 52, no. 1, p. 9, pl. 1.

Draper dolomite member (of Nittany formation)
Lower Ordovician (Canadian): Virginia.
B. N. Cooper, 1939, Va. Geol. Survey Bull. 55, p. 19–20.

Dreibuchten zone
Tertiary: Northeast Greenland.
H. P. Schaub *in* Wolf Mayne and others, 1938, Meddel. om Grønland, bind 114, nr. 1, p. 40–44, fig. 1.

Drill Camp flow (in Yellowknife group)
Precambrian: Northwest Territories (Mackenzie), Canada.
C. E. G. Brown and A. S. Dadson, 1953, Canadian Inst. Mining and Metallurgy Trans., v. 56, p. 70.

Drinkard sandy member (of Yeso formation)
Permian: New Mexico (subsurface).
R. E. King, 1945, N. Mex. State Bur. Mines Min. Res. Bull. 23, p. 13–15, fig. 1.

Drinker Creek sandstone member (of Lanesboro formational suite)
Upper Devonian (Chautauquan): Pennsylvania.
K. E. Caster, 1938, Jour. Paleontology, v. 12, no. 1, p. 46, 47–49.

Dripping Springs formation
Pleistocene: California.
J. F. Mann, Jr., 1955, Calif. Dept. Nat. Res., Div. Mines Special Rept. 43, p. 9, 14–15.

Driscoll-Sevier sand
Oligocene: Texas (subsurface).
Alexander Deussen and K. D. Owen, 1939, Am. Assoc. Petroleum Geologists Bull., v. 23, no. 11, p. 1634.

Drømmebjerg limestone
Middle Silurian (Niagaran): North Greenland.
Erdhart Frankl, 1955, Meddel. om Grønland, bind 103, nr. 7, p. 13, 22, 33.

Drumheller marine tongue (of Edmonton formation)
Upper Cretaceous: Alberta, Canada.
J. A. Allan and J. O. G. Sanderson, 1945, Alberta Research Council Rept. 13, p. 62–63.

Drumheller silts
Quaternary (post-Wisconsin): Washington.
[G. F. Beck], 1937, Central Wash. Coll. Education Geol. Bull., v. 2, no. 7.

Dry Creek glaciation
Pleistocene (pre-Wisconsin): Alaska.
Clyde Wahrhaftig *in* T. L. Péwé and others, 1953, U. S. Geol. Survey Circ. 289, p. 7, 13 (table 1).

Dry Creek Canyon member (of Dakota sandstone)
Lower Cretaceous: Colorado.
K. M. Waagé, 1953, U. S. Geol. Survey Bull. 993, p. 12, 13–17.

Dry Hill granite gneiss
Middle Paleozoic: Massachusetts.
M. E. Willard, 1951, Bedrock geology of the Mount Toby quadrangle, Massachusetts: U. S. Geol. Survey Geol. Quadrangle Map [GQ 8].

Dry Hollow latite
Tertiary: Utah.
Eugene Callaghan, 1939, Am. Geophys. Union Trans. 20th Ann. Meeting, pt. 3, p. 449.

Drywood formation or coal cycle
Pennsylvanian (Desmoinesian): Oklahoma, Iowa, Kansas, Missouri, and Nebraska.
W. V. Searight and others, 1953, Am. Assoc. Petroleum Geologists Bull., v. 37, no. 12, p. 2747–2749.
C. C. Branson, 1954, Okla. Geol. Survey Guidebook 2, p. 6.

Drywood soil
Pleistocene (Wisconsin): Alberta, Canada.
Leland Horberg, 1954, Geol. Soc. America Bull., v. 65, no. 10, p. 1133–1134.

Duarte conglomerate
Pliocene(?): California.
J. S. Shelton, 1946, U. S. Geol. Survey Oil and Gas Inv. Prelim. Map 63.

Dubawnt group
Precambrian: Northwest Territories (Keewatin), Canada.
G. M. Wright, 1955, Canada Geol. Survey Paper 55–17, p. 8–11.

Duchesnean age

Eocene: North America.

H. E. Wood, 2d, and others, 1941, Geol. Soc. America Bull., v. 52, no. 1, p. 10, pl. 1.

Duck Lake gabbro

Pre-Carboniferous: New Brunswick, Canada.

A. O. Hayes and B. F. Howell, 1937, Geol. Soc. America Special Paper 5, p. 37–38.

Duckling Creek syenite

Upper Jurassic or Lower Cretaceous: British Columbia, Canada.

J. E. Armstrong, 1949, Canada Geol. Survey Mem. 252, p. 109–110.

Dufault diorite and quartz diorite

Precambrian (Archean): Quebec, Canada.

J W. Ambrose, 1941, Canada Geol. Survey Mem. 233, p. 64.

Dufault granodiorite

Precambrian: Quebec, Canada.

H. C. Cooke, W. F. James, and J. B. Mawdsley, 1931, Canada Geol. Survey Mem. 166, p. 118–126.

Duff formation

Tertiary: Texas.

S. S. Goldich and M. A. Elms, 1946, (abs.) Geol. America Bull., v. 57, no. 12, pt. 2, p. 1197; 1949, v. 60, no. 7, p. 1159–1161.

Duffin sandstone and shale (in Chinle formation)

Upper Triassic: Utah.

P. D. Proctor, 1953, Utah Geol. Mineralog. Survey Bull. 44, p. 10–11, 36–37.

Dufrene slate

Jurassic: California.

G. R. Heyl and J. H. Eric, 1948, Calif. Dept. Nat. Res., Div. Mines Bull. 144, pt. 1, p. 52, 53, pl. 7.

Dugald formation

Middle Cambrian: Nova Scotia, Canada.

R. D. Hutchinson, 1952, Canada Geol. Survey Mem. 263, p. 11–18.

Dugald Brook series

Middle Cambrian: Nova Scotia, Canada.

A. W. Grabau, 1936, Paleozoic formations in the light of the pulsation theory, v. 1, Lower and Middle Cambrian pulsations: 2d ed., Peiping, China, University Press, Natl. Univ. Peking, p. 331.

Dugaldian series

Middle Cambrian: Nova Scotia, Canada.

A. W. Grabau, 1936, Paleozoic formations in the light of the pulsation theory, v. 1, Lower and Middle Cambrian pulsations: 2d ed., Peiping, China, University Press, Natl. Univ. Peking, p. 328–343.

Dugger formation

Pennsylvanian: Indiana.

C. E. Wier, 1950, U. S. Geol. Survey Coal Inv. Map C 1.

Dunamagon granite

Devonian: Newfoundland, Canada.

D. M. Baird, 1951, Canada Geol. Survey Paper 51–21, p. 52–53.

Duncan group
Miocene, upper: Arizona.
A. A. Stoyanow, 1937, (abs.) Geol. Soc. America Proc. 1936, p. 297 (table).

Dun Glen formation
Upper Triassic: Nevada.
S. W. Muller, H. G. Ferguson, and R. J. Roberts, 1951, Geology of the Mount Tobin quadrangle, Nevada: U. S. Geol. Survey Geol. Quadrangle Map [GQ 7].

Dunlap sandstone
Permian: Pennsylvania.
W. O. Hickok IV, and F. T. Moyer, 1940, Pa. Geol. Survey, ser. 4, Bull. C 26, p. 152–153.

Dunleith formation
Middle Ordovician: Illinois.
J. S. Templeton and H. B. Willman, 1952, Tri-State Geol. Soc. Guidebook 16th Ann. Field Conf., p. 6, 23–24, fig. 3.

Dunlevy formation
Lower Cretaceous: British Columbia, Canada.
F. H. McLearn and E. J. W. Irish, 1944, Canada Geol. Survey Paper 44–15, p. 2.

Dunmore quartzite
Lower Cambrian: Quebec, Canada.
H. C. Cooke, 1954, Geol. Assoc. Canada Proc., v. 6, pt. 2, p. 40.

Dunmore Hill marl member (of Navet formation)
Eocene, lower: Trinidad, British West Indies.
V. C. Illing, 1928, Geol. Soc. London Quart. Jour. v. 84, p. 20–21.
J. A. Cushman and H. H. Renz, 1948, Cushman Lab. Foram. Research Special Pub. 24, p. 2–3.

Dunns Peak sandstone
Eocene: California.
Boris Laiming, 1940, 6th Pacific Sci. Cong. 1939 Proc., v. 2, p. 562, fig. 9.

Duparquet sediments
Precambrian: Quebec, Canada.
H. M. Bannerman, 1940, Quebec Dept. Mines Geol. Rept. 4, p. 12–15.

Duperow formation
Devonian: Manitoba, Canada (subsurface).
J. R. Ower, 1952, Oil in Canada, v. 5, no. 1, p. 54.

Durango group
Lower Cretaceous: Durango, Mexico.
R. W. Imlay, 1944, Geol. Soc. America Bull., v. 55, no. 8, p. 1007, Chart 10a.

Durgin Brook member (of Littleton formation)
Lower Devonian: New Hampshire.
M. T. Heald, 1955, The geology of the Gilmanton quadrangle, New Hampshire: N. H. State Plan. Devel. Comm., p. 9, 10.

Durkee Hill greenstones
Upper or post-Devonian: Vermont.
C. G. Doll, [1945], Vt. State Geologist 24th Rept., p. 20.

Durst silts
Pleistocene (Wisconsin?): Texas.
M. M. Leighton, 1936, Medallion Papers 24, p. 16, 39 (fig. 5)

Dushkin basalt

Quaternary: Alaska.

G. C. Kennedy and H. H. Waldron, 1947, U. S. Geol. Survey Alaskan Volcano Inv. Rept. 2, pt. 2, p. 13–14.

Dutchtown formation

Lower Ordovician: Missouri.

H. S. McQueen, 1937, Mo. Geol. Survey and Water Res. 59th Bienn. Rept. App. 1, p. 12–25.

Duvernay member (of Woodbend formation)

Devonian: Alberta, Canada (subsurface).

D. B. Layer, chm., 1950, Am. Assoc. Petroleum Geologists Bull., v. 34, no. 9, p. 1822–1823.

Duverny granite

Precambrian (Archean): Quebec, Canada.

W. W. Weber, 1951, Quebec Dept. Mines Prelim. Rept. 255, p. 2.

Dysart granite gneiss

Precambrian: Ontario, Canada.

Jack Satterly and D. F. Hewitt, 1955, Ontario Dept. Mines Geol. Circ. 2, p. 4.

Dyson member (of Rundle formation)

See Dyson Creek member (of Rundle formation).

Dyson Creek member (of Rundle formation)

Mississippian: Alberta, Canada.

L. M. Clark, 1949, Am. Assoc. Petroleum Geologists Bull., v. 33, no. 4, p. 628.
F. W. Beales, 1950, Canada Geol. Survey Paper 50–27, p. 4, table 1.

Dyson Hollow limestone zone or member (of Stoner member of Stanton formation)

Pennsylvanian (Missouri series): Nebraska.

G. E. Condra, 1949, Nebr. Geol. Survey Bull. 16, p. 32.

Dyston member (of Rundle formation)

See Dyson Creek member (of Rundle formation)

Eagle member (of Bluebell formation)

Upper Ordovician: Utah.

Paul Billingsley *in* J. M. Boutwell, 1933, 16th Internat. Geol. Cong. [United States] Guidebook 17, Excursion C–1, p. 110 (fig. 14).
J. K. Rigby, 1952, Utah Geol. Mineralog. Survey Bull. 45, p. 23, 27, fig. 6.

Eagle Bay formation

Precambrian or Paleozoic: British Columbia, Canada.

A. G. Jones, 1948, Canada Geol. Survey Paper 48–4, p. 3.

Eagle Mills formation

Permian(?): Subsurface in Arkansas, Louisiana, Mississippi, and Texas.

H. K. Shearer, 1938, Am. Assoc. Petroleum Geologists Bull., v. 22, no. 6, p. 724.
R. W. Imlay, 1940, Ark. Geol. Survey Inf. Circ. 12, p. 8–15, pl. 12.

Eagle Mountains sandstone member (of Grayson formation)

Upper Cretaceous: Texas.

Elliot Gillerman, 1953, U. S. Geol. Survey Bull. 987, p. 27, 28, 31.

Eagle Nest formation

Pliocene(?): New Mexico.

L. L. Ray and J. F. Smith, Jr., 1941, Geol. Soc. America Bull., v. 52, no. 2, p. 190–191, pl. 1.

Eagle Peak syenite
Tertiary: Texas.
Elliot Gillerman, 1953, U. S. Geol. Survey Bull. 987, p. 9, 38.

Eagle Point member (of Dunleith formation)
Middle Ordovician: Illinois.
J. S. Templeton and H. B. Willman, 1952, Tri-State Geol. Soc. Guidebook 16th Ann. Field Conf., p. 33, fig. 3.

Earp formation
Upper Pennsylvanian: Arizona.
James Gilluly, J. R. Cooper, and J. S. Williams, 1954, U. S. Geol. Survey Prof. Paper 266, p. 18–23.

Easley group
Mississippian (Kinderhookian): Missouri, Iowa, Illinois, Kentucky, and Indiana.
J. M. Weller and others, 1948, Geol. Soc. America Bull., v. 59, no. 2, p. 101, Chart 5.

East Arm formation
Upper Cambrian: Newfoundland, Canada.
J. C. Troelsen, 1947, Am. Jour. Sci., v. 245, no. 9, p. 537–538.

East Bay formation
Precambrian: Ontario, Canada.
F. J. Pettijohn, 1937, Geol. Soc. America Bull., v. 48, no. 2, p. 187, 190.

East Bull Lake gabbro
Precambrian (Haileyburian): Ontario, Canada.
E. S. Moore and H. S. Armstrong, 1945, Ontario Dept. Mines Ann. Rept., v. 52, pt. 6, p. 6–7.

East Cape volcanics
Quaternary: Alaska (Aleutian Islands).
R. R. Coats, 1953, U. S. Geol. Survey Bull. 989–A, p. 8–9, 14–16.

East Caroline beds
Miocene: Eastern Caroline Islands.
Risaburo Tayama, 1952, Coral reefs in the South Seas: Japan Hydrog. Office Bull., v. 11, p. 69–70, table 5 [English translatior in library of U. S. Geol. Survey, p. 84].

Easterwood shales
Eocene (Claiborne): Texas.
A. A. L. Mathews, 1950, Tex. Eng. Expt. Sta. Research Rept.. 14, p. 3–4, geol. map.

East Fork formation or series
Upper Cretaceous: Northwest Territories (Mackenzie), Canada.
J. S. Stewart, 1944, Canadian Inst. Mining and Metallurgy Trans., v. 47, p. 163; 1945, Canada Geol. Survey Paper 45–29, p. 8

Eastland Lake formation
Pennsylvanian (Lampasas): Texas (subsurface).
M. G. Cheney, 1940, Am. Assoc. Petroleum Geologists Bull., v. 24, no. 1, p. 66, 86.

East Liberty bone bed (in Columbus formation)
Middle Devonian: Ohio.
J. W. Wells, 1944., Geol. Soc. America Bull., v. 55, no. 3, p. 280–281.

East Molokai volcanic series
Pliocene(?): Hawaiian Islands (Molokai).
H. T. Stearns, 1946, Hawaii Div. Hydrography Bull. 8, p. 69, 73.

East Ridge group
Age unknown: California.
K. J. Hsu, 1955, Calif. Univ. Dept. Geol. Sci. Bull., v. 30, no. 4, p. 278–279, map 1.

East Verde limestone
Paleozoic (Devonic): Arizona.
[C. R.] Keyes, 1942, Pan-Am. Geologist, v. 77, no. 3, p. 228.

Eastview formation
Ordovician: Ontario, Canada.
A. E. Wilson, 1937, Royal Soc. Canada Trans., ser. 3, v. 31, sec. 4, p. 46, 59; 1940, Canada Geol. Survey Map 588A.

East Waynesboro formation
Age not stated: Virginia.
W. A. Nelson, 1949, (abs.) Va. Acad. Sci. Proc. 1948–1949, p. 139.

Eaton sandstone member (of Saginaw formation)
Pennsylvanian: Michigan.
W. A. Kelly, 1936, Mich. Dept. Conserv. Geol. Survey Div. Pub. 40, Geol. Ser. 34, pt. 2, p. 207, 211–214.

Echo limestone or formation
Precambrian (Kwaguntan): Arizona.
Charles Keyes, 1938, Pan-Am. Geologist, v. 70, no. 2, p. 107, 113.

Echo Falls shale
Eocene, upper: California.
T. L. Bailey, 1947, Am. Assoc. Petroleum Geologists Bull., v. 31, no. 11, p. 1920 (fig. 3).

Echooka glaciation
Pleistocene (Wisconsin): Alaska.
R. L. Detterman *in* T. L. Péwé and others, 1953, U. S. Geol. Survey Circ. 289, p. 12, 13 (table 1).

Edgecliff member (of Onondaga limestone)
Middle Devonian: New York.
W. A. Oliver, Jr., 1954, Geol. Soc. America Bull., v. 65, no. 7, p. 626–627, 635–636, 641–642.

Edie School rhyolites
Pliocene: Idaho.
Robert Scholten, K. A. Keenmon, and W. O. Kupsch, 1955, Geol. Soc. America Bull., v. 66, no. 4, p. 376–377, pl. 1.

Edinburg formation
Middle Ordovician: Virginia.
B. N. Cooper and G. A. Cooper, 1946, Geol. Soc. America Bull., v. 57, no. 1, p. 78–86.

Edna dolomite
Precambrian (Beltian): Washington.
Ian Campbell and J. S. Loofbourow, Jr., 1946, (abs.) Geol. Soc. America Bull., v. 57, no. 12, pt. 2, p. 1250.

Edna Mountain formation
Permian: Nevada.
R. J. Roberts, 1951, Geology of the Antler Peak quadrangle, Nevada: U. S. Geol. Survey Geol. Quadrangle Map [GQ 10].

Eel River formation
Pliocene, lower: California.
B. A. Ogle, 1953, Calif. Dept. Nat. Res., Div. Mines Bull. 164, p. 13 (fig. 3), 28–31, pl. 1.

Effna limestone
Middle Ordovician: Virginia.
B. N. Cooper, 1944, Va. Geol. Survey Bull. 60, p. 59–64.

Egedesminde gneiss complex
Precambrian: West Greenland.
Hans Ramberg, 1948, Meddel. Dansk Geol. Foren., bind 11, hefte 3, p. 313, 319–320, fig. 1.

Eggners Ferry chert
Mississippian: Kentucky.
E. M. Luttrell and Ann Livesay, 1952, Ky. Geol. Survey, ser. 9, Bull. 11, p. 5, 11–12.

Eighteenmile Creek member (of Ludlowville formation)
Middle Devonian: New York.
R. G. Sutton, 1951, Rochester Acad. Sci. Proc., v. 9, no. 5–6, p. 366.

El Abra formation
Miocene, upper: Cuba.
J. A. Cushman and P. J. Bermudez, 1949, Cushman Lab. Foram. Research Contrib., v. 25, pt. 2, p. 27.
P. J. Bermudez, 1950, Soc. Cubana Historia Nat. Mem., v. 19, no. 3, p. 300–301.

Eldena member (of Nachusa formation)
Middle Ordovician: Illinois.
J. S. Templeton and H. B. Willman, 1952, Tri-State Geol. Soc. Guidebook 16th Ann. Field Conf., fig. 3.

Elder sandstone
Age not stated: Nevada.
James Gilluly, 1955, *in* Pacific Petroleum Geologist, v. 9, no. 8, p. 1.

Elder Creek group
Jurassic (Knoxville): California.
F. M. Anderson, 1943, Calif. Dept. Nat. Res., Div. Mines Bull. 118, pt. 2, p. 184 [preprint 1941].

El Doctor limestone
Lower Cretaceous: Queretaro, Mexico.
B. W. Wilson, J. P. Hernández M., and E. Meave T., 1955, Soc. Geol. Mexicana Bol., tomo 18, no. 1, p. 2–3, fig. 2.

El Dorado Ridge gneissose quartz diorite
Age unknown: California.
K. J. Hsu, 1955, Calif. Univ. Dept. Geol. Sci. Bull., v. 30, no. 4, p. 298–300, map 1.

Eleonore Bay formation
Precambrian: Northeast Greenland.
Lauge Koch, 1929, Meddel. om Grønland, bind 73, afd. 2, nr. 1, p. 15–57.

Elenores Sø series
Precambrian (Greenlandian): Northeast Greenland.
H. R. Katz, 1952, Meddel. om Grønland, bind 144, nr. 8, p. 42–49.
John Haller, 1955, Meddel. om Grønland, bind 73, afd. 1, nr. 3, p. 39, 159.

Elephant Butte formation
Pennsylvanian (Des Moines): New Mexico.
M. L. Thompson, 1942, N. Mex. State Bur. Mines Min. Res. Bull. 17, p. 27, 48–49.

Elephant Hill breccia
Miocene, middle, or older: California.
J. S. Shelton, 1955, Geol. Soc. America Bull., v. 66, no. 1, p. 56, pl. 1.

Elephant Mountain flow
Miocene and Pliocene: Washington.
A. C. Waters, 1955, Geol. Soc. America Bull., v. 66, no. 6, p. 673, pl. 1.

Eleventh Street limestone
Pennsylvanian (Des Moines): Oklahoma.
R. C. Moore, 1937, Kans. Geol. Soc. Guidebook 11th Ann. Field Conf., p. 102.
R. H. Dott, 1941, Am. Assoc. Petroleum Geologists Bull., v. 25, no. 8, p. 1592, 1593–1594.

Elise formation
Triassic(?): British Columbia, Canada.
H. W. Little, 1950, Canada Geol. Survey Paper 50–19, p. 25–26.

Elk conglomerate
Lower Cretaceous: British Columbia, Canada.
B. R. MacKay, 1934, Canada Geol. Survey Summ. Rept. 1933, pt. B, p. 5.

Elk Butte member (of Pierre shale)
Upper Cretaceous: South Dakota.
W. V. Searight, 1937, S. Dak. State Geol. Survey Rept. Inv. 27, p. 50–55, pl. 3.

Elk Creek basalt
Miocene and/or Pliocene: Wyoming.
A. D. Howard, 1937, Geol. Soc. America Special Paper 6, p. 33–36, 78.

Elkhorn basalt
Tertiary: Wyoming.
R. E. Wilcox, 1944, Geol. Soc. America Bull., v. 55, no. 9, p. 1054.

Elk Point formation
Silurian: Subsurface in Alberta and Saskatchewan, Canada.
J. R. McGehee, 1949, Am. Assoc. Petroleum Geologists Bull., v. 33, no. 4, p. 603, 606–611.

Elk Ridge limestone member (of Minturn formation)
Pennsylvanian: Colorado.
A. H. Koschmann and F. G. Wells, 1946, Colo. Sci. Soc. Proc., v. 15, no. 2, p. 62, 67.
Ogden Tweto, 1949, Colo. Sci. Soc. Proc., v. 15, no. 4, p. 202–203.

Ella Island formation
Lower Cambrian: Northeast Greenland.
Lauge Koch, 1929, Meddel. om Grønland, bind 73, afd. 2, nr. 1, p. 27; nr. 2, p. 226.

Ellerslie member (of Blairmore formation)
Lower Cretaceous: Alberta, Canada (subsurface).
C. W. Hunt, 1950, Am. Assoc. Petroleum Geologists Bull., v. 34, no. 9, p. 1800.

Elliot Bay conglomerate
Precambrian: Saskatchewan, Canada.
A. M. Christie, 1952, Canada Geol. Survey Mem. 269, p. 14.

Ellsworth formation
Upper Cretaceous: Kansas.
R. C. Moore and K. K. Landes, 1937, Geologic map of Kansas [1:500,000]: Kans. State Geol. Survey.

El Luis Ridge group
Age unknown: California.
K. J. Hsu, 1955, Calif. Univ. Dept. Geol. Sci. Bull., v. 30, no. 4, p. 296, map 1.

Elm member (of Nachusa formation)
Middle Ordovician: Illinois.
J. S. Templeton and H. B. Willman, 1952, Tri-State Geol. Soc. Guidebook 16th Ann. Field Conf., fig. 3.

Elm Creek silts
Pleistocene (Illinoian?): Texas.
M. M. Leighton, 1936, Medallion Papers 24, p. 8–11, 39 (fig. 5).

Elmira formation
Eocene, middle: Cuba.
J. F. de Albear, 1941, Soc. Cubana Ingenieros Rev., v. 36, chart facing p. 564.
Jorge Brodermann, 1945, Soc. Cubana Ingenieros Rev., v. 42, no. 1, p. 124, chart facing p. 144.

El Modeno volcanics
Miocene: California.
J. E. Schoellhamer and others, 1954, U. S. Geol. Survey Oil and Gas Inv. Map OM 154.

El Monte limestone
Cretaceous (Albian-Cenomanian): Hidalgo, Mexico.
F. S. Simons, 1951, Stanford Univ. Abs. Dissert., v. 26, p. 333.

El Morro fanglomerate
Tertiary, lower or middle: Hidalgo, Mexico.
F. S. Simons, 1951, Stanford Univ. Abs. Dissert., v. 26, p. 333.

El Plan formation
Upper Triassic: Honduras.
R. H. Carpenter, 1954, Geol. Soc. America Bull., v. 65, no. 1, p. 25–27.

El Rito formation
Tertiary (pre-upper Miocene): New Mexico.
H. T. U. Smith, 1938, Jour. Geology, v. 46, no. 7, p. 940–944, 958.

Elsie Mountain greenstones
Precambrian (Keewatin): Ontario, Canada.
Anonymous, 1937, Canadian Mining Jour., v. 58, no. 11, p. 591, 592.

Elsmere member (of Repetto formation)
Pliocene, lower: California.
U. S. Grant, IV; and L. G. Hertlein, 1943, Calif. Dept. Nat. Res., Div. Mines Bull. 118, pt. 2, p. 202 (fig. 85) [preprint 1941].
G. B. Oakeshott, 1950, Calif. Jour. Mines and Geology, v. 46, no. 1, p. 54 (fig. 2), 55.

El Socavon facies (of El Doctor limestone)
Lower Cretaceous: Queretaro, Mexico.
B. W. Wilson, J. P. Hernández M., and E. Meave T., 1955, Soc. Geol. Mexicana Bol., tomo 18, no. 1, p. 5, fig. 2.

Elves Chasm tongue
Lower and/or Middle Cambrian: Arizona.
E. D. McKee, 1945, Carnegie Inst. Washington Pub. 563, p. 14, 29, 87–88.

Elvira group
Mississippian (Chester): Illinois and Missouri.
J. M. Weller, 1939, Kans. Geol. Soc. Guidebook 13th Ann. Field Conf., p. 131, 136.

Elway limestone

Middle Ordovician: Virginia.

B. N. Cooper, 1945, Va. Geol. Survey Bull. 66, p. 17, 42, 134, 206–207.

Embudo granite

Precambrian: New Mexico.

Arthur Montgomery, 1953, N. Mex. State Bur. Mines Min. Res. Bull. 30, p. 37–46.

Emilia group

Lower Paleozoic (Caledonian): Northeast Greenland.

C. E. Wegmann, 1935, Meddel. om Grønland, bind 103, nr. 3, p. 32, pl. 1.

†Emma Creek formation

Pleistocene: Kansas.

S. W. Lohman and J. C. Frye, 1939, (abs.) Econ. Geology, v. 34, no. 8, p. 942–943; 1940, v. 35, no. 7, p. 849–851.

Encajonado formation

Miocene: Tabasco and Chiapas, Mexico.

J. B. Gibson, 1936, Soc. Geol. Mexicana Bol., tomo 9, no. 5, correlation chart.

G. P. Salas and Ernesto Lopez Ramos, 1951, Asociación Mexicana Geólogos Petroleros Bol., v. 3, nos. 1–2, p. 37–38.

Encanto series

Miocene, lower: Istmo de Tehuantepec, Mexico.

J. B. Gibson, 1936, Soc. Geol. Mexicana Bol., tomo 9, no. 5, p. 281, correlation chart.

Encarnación shale

Oligocene: Tabasco and Chiapas, Mexico.

G. P. Salas and Ernesto Lopez Ramos, 1951, Asociación Mexicana Geólogos Petroleros Bol., v. 3, nos. 1–2, p. 34–35.

Encina Sola quartz diorite

Cretaceous: Baja California, Mexico.

A. O. Woodford and T. F. Harriss, 1938, Geol. Soc. America Bull., v. 49, no. 9, p. 1313–1314.

Endako group

Oligocene or younger: British Columbia, Canada.

J. E. Armstrong, 1947, Canada Geol. Survey Paper 47–13 (Prelim. Map 47–13A).

Englee formation

Ordovician: Newfoundland, Canada.

Frederick Betz, Jr., 1939, Newfoundland Geol. Survey Bull. 16, p. 21–22.

Ennery formation

Eocene, upper: Haiti.

Jacques Butterlin, [1952], Résumé de thèse présentée à la Sorbonne, La géologie de la République d'Haïti et ses rapports avec celle des régions voisines (mimeo.), p. 3; 1954, Inst. Français d'Haïti Mem. 1, p. 59.

Enragé formation

Pennsylvanian: New Brunswick, Canada.

G. W. H. Norman, 1941, Canada Geol. Survey Map 647A.

Ensign Lake green slates, tuffs, and graywackes.

Precambrian (Knife Lake): Minnesota.

J. W. Gruner, 1941, Geol. Soc. America Bull., v. 52, no. 10, p. 1583, 1605–1606.

Ensign-Snowbank Lake agglomerate

Precambrian (Knife Lake): Minnesota.

W. Gruner, 1941, Geol. Soc. America Bull., v. 52, no. 10, p. 1583, 1609–1610.

Entrance conglomerate (in Edmonton formation)
Upper Cretaceous: Alberta, Canada.
A. H. Lang, 1944, Canada Geol. Survey Paper 44–1, p. 2, 7.

Eoline member (of Coker formation)
Upper Cretaceous (Tuscaloosa group): Alabama.
L. C. Conant and W. H. Monroe, 1945, U. S. Geol. Survey Oil and Gas Inv. Prelim. Map 37.

Epitaph dolomite
Permian: Arizona.
James Gilluly, J. R. Cooper, and J. S. Williams, 1954, U. S. Geol. Survey Prof. Paper 266, p. 25–27.

Eremitdal series (of Eleonore Bay formation)
Precambrian: Northeast Greenland.
Erdhart Frankl, 1951, Meddel. om Grønland, bind 151, nr. 6, p. 5, 6, 14.
H. R. Katz, 1952, Meddel. om Grønland, bind 111, nr. 1, p. 31–34, 52, 53–54, pl. 3.

Erin Point beds (in Moruga formation)
Miocene, upper: Trinidad, British West Indies.
Heinrich Gerth, 1935, K. Akad. Wetensch. Amsterdam, Sect. Sci. Proc., v. 38, no. 4, table facing p. 460.
R. A. Liddle, 1946, The Geology of Venezuela and Trinidad: Ithaca, N. Y., Paleont. Research Inst., p. 769.

Erna member (of Wilberns formation)
Cambrian: Texas.
F. B. Plummer, [1942], Tex. Univ. Bur. Econ. Geology Min. Res. Circ. 22, p. 1; 1944, Circ. 33, p. 8.

Escacado limestone
Paleozoic (Devonic): Arizona.
[C. R.] Keyes, 1942, Pan-Am. Geologist, v. 77, no. 3, p. 227, 228.

Escalante formation
Oligocene: British Columbia, Canada.
J. A. Jeletsky, 1950, Canada Geol. Survey Paper 50–37, p. 48.

Escanaba River group
Middle Ordovician: Michigan.
R. C. Hussey, 1950, Mich. Geol. Soc. [Guidebook 14th] Ann. Geol. Excursion, introd.

Escobales granodiorite
Pliocene(?): Honduras.
R. H. Carpenter, 1954, Geol. Soc. America Bull., v. 65, no. 1, p. 30–31, pl. 1 (geol. map).

Escobar sandstone
Eocene, upper: California.
C. E. Weaver, 1953, Wash. [State] Univ. Pubs. in Geology, v. 7, p. 19 (chart), 44–48.

Escolin series
Oligocene: Vera Cruz, Mexico.
G. P. Salas, 1949, Am. Assoc. Petroleum Geologists Bull., v. 33, no. 8, p. 1391.
Luis Limón-Gutiérrez, 1950, Asociación Mexicana Geólogos Petroleros Bol., v. 2, no. 10, p. 618–619.

Escondido Creek leucogranodiorite

Cretaceous: California.

E. S. Larsen, Jr., and N. B. Keevil, 1947, Geol. Soc. America Bull., v. 58, no. 6, p. 489.
E. S. Larsen, Jr., 1948, Geol. Soc. America Mem. 29, p. 87–89.

Escudo sandstone

Miocene, middle (Relizian): California.

Martin Van Couvering and H. B. Allen, 1943, Calif. Dept. Nat. Res., Div. Mines Bull. 118, pt. 3, p. 496–500.

Eshe porphyry

Tertiary: Colorado.

J. T. Stark and others, 1949, Geol. Soc. America Mem. 33, p. 81–83.

Eskasoni formation

Middle Cambrian: Nova Scotia, Canada.

R. D. Hutchinson, 1952, Canada Geol. Survey Mem. 263, p. 10–11.

Eskimo Hut formation

Lower Ordovician (Ozarkian): Northeast Greenland.

Lauge Koch, 1929, Meddel. om Grønland, bind 73, afd. 2, nr. 1, p. 22–23; nr. 2, p. 231.

Esmeralda member (of Brasso formation)

Oligocene, middle to upper: Trinidad, British West Indies.

H. H. Renz, 1942, 8th Am. Sci. Cong. Proc., v. 4, p. 545–546, 555.

Esmond granite

Devonion(?) or earlier: Rhode Island and Massachusetts.

Alonzo Quinn, R. G. Ray, and W. L. Seymour *in* Alonzo Quinn and others, 1948, R. I. Port and Indus. Devel. Comm. Geol. Bull. 3, p. 15, geol. map.

Esmont slate facies (of Candler formation)

Age not stated: Virginia.

W. R. Brown and H C. Sundermann, 1954, (abs.) Geol. Soc. America Bull., v. 65, no. 12, pt. 2, p. 1356.

Espada formation

Upper Jurassic and Lower Cretaceous: California.

T. W. Dibblee, Jr. 1950, Calif. Dept. Nat. Res., Div. Mines Bull. 150, p. 22–23, pl. 6.

Esperance sand member (of Vashon drift)

Pleistocene: Washington.

R. C. Newcomb, 1952, U. S. Geol. Survey Water-Supply Paper 1135, p. 19–23, pl. 1.

Esperanza limestone

Cambrian: Sonora, Mexico.

R. B. Mulchay and J. R. Velasco, [1951], Tentative correlation of the sedimentary rocks at Cananea, Sonora, Mexico, with the section at Bisbee, Ariz. Privately printed (mimeo.), p. 4–5; 1954, Min. Eng., v. 6, no. 6, p. 628.

Espey Creek limestone member (of Chappel formation)

Mississippian: Texas.

F. B. Plummer, 1950, Tex. Univ. Bur. Econ. Geology Pub. 4329, p. 28.

Espinal formation

Paleozoic (Devonic): Arizona.

[C. R.] Keyes, 1942, Pan-Am. Geologists, v. 77, no. 3, p. 227, 228.

Espinal grit (in Joserita member of Lowell formation)
Lower Cretaceous: Arizona.
A. A. Stoyanow, 1949, Geol. Soc. America Mem. 38, p. 11–12.

Espinaso volcanics
Tertiary: New Mexico.
C. E. Stearns, 1943, Jour. Geology, v. 51, no. 5, p. 309–310, fig. 2.

Espy formation
Lower Cretaceous: Texas.
R. M. Huffington, 1943, Geol. Soc. America Bull., v. 54, no. 7, p. 1004–1007.

Essex series
Precambrian (Archean): California.
J. C. Hazzard and E. F. Dosch, 1937, (abs.) Geol. Soc. America Proc. 1936, p. 309.

Establishment member (of Mifflin formation)
Middle Ordovician: Illinois.
J. S. Templeton and H. B. Willman, 1952, Tri-State Geol. Soc. Guidebook 16th Ann. Field Conf., figs. 3, 10, 16.

Ester ash bed
Pleistocene: Alaska.
T. L. Péwé, 1955, Geol. Soc. America Bull., v. 67, no. 6, p. 713.

Ester Lake graywackes, slates, and tuffs
Precambrian (Knife Lake): Minnesota.
J. W. Gruner, 1941, Geol. Soc. America Bull., v. 52, no. 10, p. 1583, 1611–1613.

Estero Franco formation
Miocene: Quintana Roo, Mexico.
Manuel Alvarez, Jr., 1954, Asociación Mexicana Geólogos Petroleros Bol., v. 6, nos. 5–6, p. 210.

Estes Park beds
Precambrian: Colorado.
M. F. Boos, 1954, (abs.) Geol. Soc. America Bull., v. 65, no. 12, pt. 2, p. 1372.

Etah formation
Precambrian (Algonkian): North Greenland.
Lauge Koch, 1929, Meddel. om Grønland, bind 73, afd. 2, nr. 2, p. 219–220.

Etherington member (of Rocky Mountain formation)
Carboniferous: Alberta, Canada.
R. J. W. Douglas, 1953, Alberta Soc. Petroleum Geologists 3d Ann. Field Conf. and Symposium, p. 68.

Et-Then series
Precambrian: Northwest Territories (Mackenzie), Canada.
C. H. Stockwell, 1933, Canada Geol. Survey Summary Rept. 1932, pt. C, p. 59.

Euless member (of Woodbine formation)
Upper Cretaceous (Cenomanian): Texas.
R. T. Hazzard, B. W. Blanpied, and W. C. Spooner, [1947], Shreveport Geol. Soc. 1945 Ref. Rept., v. 2, p. 475, 476, 477, 480.
L. W. Stephenson, 1952, U. S. Geol. Survey Prof. Paper 242, p. 10, 27–28, 36, 37.

Eulie shale
Lower Mississippian: Tennessee.
Guy Campbell, 1946, Geol. Soc. America Bull., v. 57, no. 9, p. 885.

Eureka Sound group

Cretaceous or Cenozoic: Northwest Territories (Ellesmere Island), Canada.

J. C. Troelsen, 1950, Meddel. om Grønland, bind 149, nr. 7, p. 78–79.

Eustis porphyry

Silurian or Devonian: Quebec, Canada.

G. V. Douglas, 1941, Quebec Dept. Mines Geol. Rept. 8, p. 16–18.

Eustis–Moulton Hill series

Ordovician: Quebec, Canada.

J. E. Hawley and others, 1945, Canadian Inst. Mining and Metallurgy Trans., v. 48, p. 372 (geol. map).

Everett member (of Nachusa formation)

Middle Ordovician: Illinois.

J. S. Templeton and H. B. Willman, 1952, Tri-State Geol. Soc. Guidebook 16th Ann. Field Conf., figs. 3, 9.

Evington group

Paleozoic(?): Virginia.

W. R. Brown, 1953, Ky. Geol. Survey, ser. 9, Special Pub. 1, [p. 91] (fig. 1).

Excello formation

Pennsylvanian (Desmoinesian): Missouri, Iowa, Kansas, Nebraska, and Oklahoma.

W. V. Searight *in* W. B. Howe and W. V. Searight, 1953, Mo. Geol. Survey and Water Res. Rept. Inv. 14, pl. 1.

Exline cyclothem (including Exline limestone)

Pennsylvanian (Des Moines): Iowa, Illinois, and Missouri.

L. M. Cline, 1941, Am. Assoc. Petroleum Geologists Bull., v. 25, no. 1, p. 65–66.
J. M. Weller, 1942, Ill. State Acad. Sci. Trans., v. 35, p. 145.

Exploits series

Ordovician: Newfoundland, Canada.

G. R. Heyl, 1936, Newfoundland Geol. Survey Bull. 3, p. 3–12.

Exshaw shale

Upper Devonian: Alberta, Canada.

P. S. Warren, 1937, Am. Jour. Sci., ser. 5, v. 33, no. 198, p. 456–457.

Eyer member (of Hatter formation)

Middle Ordovician (Chazyan): Pennsylvania.

G. M. Kay, 1943, Econ. Geology, v. 38, no. 3, p. 193.

Fabius group

Devonian or Mississippian: Missouri, Iowa, Illinois, Kentucky, and Indiana.

J. M. Weller and others, 1948, Geol. Soc. America Bull., v. 59, no. 2, p. 101, Chart 5.

Fagasa gabbro

Pliocene and lower Pleistocene(?): Samoa Islands (Tutuila).

R. A. Daly, 1924, Carnegie Inst. Washington Pub. 340, p. 113–115.
H. T. Stearns, 1944, Geol. Soc. America Bull., v. 55, no. 11, p. 1296, pl. 1 (geol. map).

Fairbank formation

Pennsylvanian: Wyoming.

G. E. Condra, E. C. Reed, and O. J. Scherer, 1940, Nebr. Geol. Survey Bull. 13, p. 2, 3, 32.

Fairfax schist

Precambrian (?) : Vermont.

E. C. Jacobs, 1935, (abs.) Geol. Soc. America Proc. 1934, p. 85.

Fairholme formation

Devonian: Alberta, Canada.

G. S. Hume and H. H. Beach, 1941, Canada Geol. Survey Paper (Prelim. Map) 41–8.

Fairplay glacial substage

Pleistocene (Wisconsin) : Colorado.

Q. D. Singewald, 1950, U. S. Geol. Survey Bull. 955–D, p. 123, 125, pl. 9 [1951].

Fairplay member (of Dunleith formation)

Middle Ordovician: Illinois.

J. S. Templeton and H. B. Willman, 1952, Tri-State Geol. Soc. Guidebook 16th Ann. Field Conf., p. 33, fig. 3.

Fairview granodiorite

Jurassic(?) : British Columbia, Canada.

H. S. Bostock, 1940, Canada Geol. Survey Map 341A.

Fairview Valley formation

Permian: California.

O. E. Bowen, Jr., *in* L. A. Wright and others, 1953, Calif. Jour. Mines and Geology, v. 49, nos. 1–2, pl. 2.

O. E. Bowen, Jr., 1954, Calif. Dept. Nat. Res., Div. Mines Bull. 165, p. 16 (fig. 2), 36–42.

Fairville granite

Pre-Carboniferous: New Brunswick, Canada.

A. O. Hayes and B. F. Howell, 1937, Geol. Soc. America Special Paper 5, p. 34–35.

Fais limestone

Pleistocene: Caroline Islands (Fais).

Risaburo Tayama, 1939, Correlation of the strata of the South Sea Islands: Geol. Soc. Japan Jour., v. 46, no. 549, p. 347 (correlation table) [English translation in library of U. S. Geol. Survey]; 1952, Coral reefs in the South Seas: Japan Hydrog. Office Bull., v. 11, p. 68, table 5 [English translation in library of U. S. Geol. Survey, p. 82–83].

Falcon granite gneiss

Precambrian: Colorado.

M. F. Boos, 1946, (abs.) Geol. Soc. America Bull., v. 57, no. 12, pt. 2, p. 1179.

Falcon limestone member (of Lykins formation)

Permian: Colorado.

L. W. LeRoy, 1946, Colo. School Mines Quart., v. 41, no. 2, p. 31, 33.

Falcon sandstone member (of Cook Mountain formation)

Eocene (Claiborne) : Texas.

J. M. Patterson, 1942, Am. Assoc. Petroleum Geologists Bull., v. 26, no. 2, p. 259 (fig. 2), 263.

Falher member (of Spray River formation)

Lower Cretaceous: Alberta, Canada (subsurface).

P. C. Badgley, 1952, Canada Geol. Survey Paper 52–11, p. 9.

Falling Run member (of Sanderson formation)

Lower Mississippian: Indiana and Kentucky.

Guy Campbell, 1946, Geol. Soc. America Bull., v. 57, no. 9, p. 848–849, 857–858.

Falling Springs standstone member (of New Scotland formation)
Lower Devonian: Pennsylvania.
F. M. Swartz, 1938, (abs.) Geol. Soc. America Bull., v. 49, no. 12, p. 1923.
F. M. Swartz *in* Bradford Willard, F. M. Swartz, and A. B. Cleaves, 1939, Pa. Geol. Survey, ser. 4, Bull. G 19, p. 57, 67, 83.

Falor formation
Pliocene: California.
G. A. Manning and B. A. Ogle, 1950, Calif. Dept. Nat. Res., Div. Mines Bull. 148, p. 14 (fig. 2), 22–25, pl. 1.

Falskebugt beds
Lower Cretaceous (Valanginian): Northeast Greenland.
Wolf Mayne, 1949, Meddel. om Grønland, bind 133, nr. 3, p. 55–62, 187–192, 281.

Fannettsburg member (of Shippensburg formation)
Middle Ordovician (Bolarian): Pennsylvania and Maryland.
L. C. Craig, 1949, Geol. Soc. America Bull., v. 60, no. 4, p. 715 (fig. 1), 722–727.

Faraway Ranch formation
Cenozoic: Arizona.
H. E. Enlows, 1951, Tulsa Geol. Soc. Digest, v. 19, p. 105–107; 1955, Geol. Soc. America Bull., v. 66, no. 10 p. 1217.

Farewell glaciation
Pleistocene (Wisconsin): Alaska.
A. T. Fernald *in* T. L. Péwé and others, 1953, U. S. Geol. Survey Circ. 289, p. 6–7, 13 (table 1).

Farewell group
Ordovician(?): Newfoundland, Canada.
D. M. Baird, 1950, Canada Geol. Survey Paper 50–22, p. 28–32.

Fargo Canyon diorite
Upper Jurassic: California.
W. J. Miller, 1944, Calif. Jour. Mines and Geology, v. 40, no. 1, p. 59–60.

Farmdale loess or substage
Pleistocene (early Wisconsin): Illinois, Kentucky, and Indiana.
[M. M. Leighton], 1947, *in* Itinerary State Geologists' Conference on the loess deposits, p. 1, 3, 4.
M. M. Leighton and H. B. Willman, 1950, Jour. Geology, v. 58, no. 6, p. 602, 603.

Farmers siltstone member (of New Providence formation)
Lower Mississippian: Kentucky.
P. B. Stockdale, 1939, Geol. Soc. America Special Paper 22, p. 129–132.

Farmington Canyon complex
Precambrian: Utah.
A. J. Eardley, 1939, Geol. Soc. America Bull., v. 50, no. 8, p. 1282.
A. J. Eardley and R. A. Hatch, 1940, Jour. Geology, v. 48, no. 1, p. 61–62.

Farragut limestone
Middle Ordovician: Tennessee.
C. E. Prouty, 1946, Am. Assoc. Petroleum Geologists Bull., v. 30, no. 7, p. 1156–1157

Farrington sand member (of Raritan formation)
Upper Cretaceous: New Jersey.
H. C. Barksdale and others, 1943, The ground-water supplies of Middlesex County, New Jersey: N. J. State Water Policy Comm. [Special Rept. 8], p. 104.

Fauquier formation
Precambrian: Virginia.
A. S. Furcron, 1939, Va. Geol. Survey Bull. 54, p. 37–41.

Favel formation
Upper Cretaceous: Manitoba and Saskatchewan, Canada.
S. R. Kirk and others, 1941, Canada Geol. Survey Map 637A.
R. T. D. Wickenden, 1945, Canada Geol. Survey Mem. 239, p. 23–33.

Favret formation
Middle Triassic: Nevada.
S. W. Muller, H. G. Ferguson, and R. J. Roberts, 1951, Geology of the Mount Tobin quadrangle, Nevada: U. S. Geol. Survey. Quadrangle Map [GQ 7].

Fayette facies (of Flagstaff formation)
Paleocene, upper: Utah.
W. N. Gilliland, 1951, Nebr. Univ. Studies, new ser., no. 8, p. 29.

Fearn Springs sand member (of Wilcox formation in Mississippi; of Nanafalia formation in Alabama and Georgia)
Eocene, lower: Mississippi, Georgia, and Alabama.
F. F. Mellen, 1939, Miss State Geol. Survey Bull. 38, p. 33–37.

Federal sediments
Lower Devonian: Quebec, Canada.
J. E. Gill and P. E. Auger, 1943, Canadian Inst. Mining and Metallurgy Trans., v. 46, p. 457, 459.

Feilden group
Lower Permian or Upper Carboniferous: Northwest Territories (Ellesmere Island), Canada.
R. G. Blackadar, 1954, Canada Geol. Survey Paper 53–10, p. 15–16.

Feldt Ranch beds (in Ash Hollow formation)
Pliocene (Ogallala): Nebraska.
M. K. Elias, 1942, Geol. Soc. America Special Paper 41, p. 141–142.

Feliz granodiorite
Pre-Cretaceous(?): California.
G. J. Neuerburg, 1953, Calif. Dept. Nat. Res., Div. Mines Special Rept. 33, p. 7 (table 1), 12–14, pl. 1.

Fena beds
Eocene: Mariana Islands (Guam).
Risaburo Tayama, 1952, Coral reefs in the South Seas: Japan Hydrog. Office Bull., v. 11, p. 51, table 4 [English translation in library of U. S. Geol. Survey, p. 61].

Fenimore iron formation
Precambrian: Quebec, Canada.
P. E. Auger, 1954, Canadian Mining and Metall. Bull., v. 47, no. 8, p. 530.

Fenn formation
Upper Devonian: Alberta, Canada.
J. M. Andrichuk and J. S. Wonfor, 1954, Am. Assoc. Petroleum Geologists Bull., v. 38, no. 12, p. 2505.

Fenner granite gneiss
Precambrian (Archean): California.
J. C. Hazzard and E. F. Dosch, 1937, (abs.) Geol. Soc. America Proc. 1936, p. 309.

Ferdinand limestone
Pennsylvanian (Pottsville): Indiana.
D. W. Franklin, 1944, Ill. State Acad. Sci. Trans., v. 37, nos. 3–4, p. 86, 89.

Fergusson series
Permian(?): British Columbia, Canada.
C. E. Cairnes, 1937, Canada Geol. Survey Mem. 213, p. 9–13.

Fern Creek formation
Precambrian: Michigan.
F. J. Pettijohn and F. A. Hildebrand, 1941, (abs.) Geol. Soc. America Bull., v. 52, no. 12, pt. 2, p. 1927.
F. J. Pettijohn, 1943, Jour. Geology, v. 51, no. 6, p. 397.

Ferndale sandstone
Pliocene, upper: California.
H. D. MacGinitie, 1943, Calif. Dept. Nat. Res., Div. Mines Bull. 118, pt. 3, p. 633.

Fernow gneiss
Pre-Ordovician(?): Washington.
E. A. Youngberg and T. L. Wilson, 1952, Econ. Geology, v. 47, no. 1, p. 3.

Ferriman series
Precambrian: Newfoundland (Laborador) and Quebec, Canada.
J. K. Gustafson and A. E. Moss, 1953, Mining Eng., v. 5, no. 6, p. 595(table 1).

Ferry Lake anhydrite
Lower Cretaceous (Comanche series): Subsurface in Arkansas, Louisiana, and Texas.
R. W. Imlay, 1940, Ark. Geol. Survey Inf. Circ. 12, p. 4, 35–36.

Fiedmont granodiorite
Precambrian: Quebec, Canada.
H. C. Cooke, W. F. James, and J. B. Mawdsley, 1931, Canada Geol. Survey Mem. 166, p. 134.

Fifes Peak andesite
Miocene (Keechelus andesite series): Washington.
W. C. Warren, 1940 (abs.) Geol. Soc. America Bull., v. 51, no. 12, pt. 2, p. 2034–2035; 1941, Jour. Geology, v. 49, no. 8, p. 800–802.

Figuery granodiorite
Precambrian: Quebec, Canada.
H. C. Cooke, W. F. James, and J. B. Mawdsley, 1931, Canada Geol. Survey Mem. 166, p. 133.

File granite
Precambrian: Manitoba, Canada.
J. M. Harrison, 1949, Canada Geol. Survey Mem. 250, p. 19, 20.

Filer sandstone lentil (in Amherstburg formation)
Middle Devonian: Michigan (subsurface).
K. K. Landes, U. S. Geol. Survey Circ. 133, p. 9, 12.

Filisola series
Miocene, lower: Istmo de Tehuantepec, Mexico.
J. B. Gibson, 1936, Soc. Geol. Mexicana Bol., tomo 9, no. 5, p. 281, 282–283, correlation chart.

Fillmore limestone
Lower Ordovician (Canadian): Utah and Nevada.
L. F. Hintze, 1951, Utah Geol. Mineralog. Survey Bull. 39, p. 13–16.

Final shales
Precambrian (Chuaran): Arizona.
Charles Keyes, 1938, Pan-Am. Geologist, v. 70, no. 2, p. 107, 113.

Finger Bay volcanics
Paleozoic(?): Alaska (Aleutian Islands).
R. R. Coats, 1947, U. S. Geol. Survey Alaskan Volcano Inv. Rept. 2, pt. 5, p. 75–76.

Finger Lakes stage
Upper Devonian (Senecan): New York.
G. A. Cooper and others, 1942, Geol. Soc. America Bull., v. 53, no. 12, pt. 1, p. 1734, Chart 4.

Finnefjeld complex
Precambrian: West Greenland.
Asger Berthelsen, 1950, Meddel. Dansk Geol. Foren., bind 11, p. 559–560.

Fire Clay Hill bentonitic shale (in Chinle formation)
Upper Triassic: Utah.
P. D. Proctor, 1953, Utah Geol. Mineralog. Survey Bull. 44, p. 10–11, 19–22.

Firemoon limestone member (of Piper formation)
Middle Jurassic: Montana (subsurface and surface) and North Dakota (subsurface).
J. W. Nordquist, 1955, Billings Geol. Soc. Guidebook 6th Ann. Field Conf., p. 97, 101–102.

Fish Creek gypsum
Miocene: California.
T. W. Dibblee, Jr., 1954, Calif. Dept. Nat. Res., Div. Mines Bull. 170, chap. 2, p. 22.

Fish Creek shale
Lower Silurian: New York, and Ontario, Canada.
D. W. Fisher, 1954, Am. Assoc. Petroleum Geologists Bull., v. 38, no. 9, p. 1987–1988.

Fishells conglomerate
Mississippian: Newfoundland, Canada.
D. M. Baird, 1951, Canadian Inst. Mining and Metallurgy Trans., v. 54, p. 86.

Fishels limestone
Mississippian: Newfoundland, Canada.
W. A. Bell, 1948, Canada Geol. Survey Bull. 10, p. 31.

Fisk formation
Permian (Wolfcamp): Texas.
M. G. Cheney, 1940, Am. Assoc. Petroleum Geologists Bull., v. 24, no. 1, p. 66, 95–96.

Fitt Trace marl
Eocene: Trinidad, British West Indies.
H. G. Kugler and others, [1939], Geological conference in Trinidad; notes on the excursions: Petroleum Assoc. Trinidad, cross section through eastern Central Range and northern depression.
J. A. Cushman and H. H. Renz, 1948, Cushman Lab. Foram. Research Special Pub. 24, p. 2, 3.

Five Oaks limestone member (of Cliffield formation)
Middle Ordovician: Virginia.
B. N. Cooper and C. E. Prouty, 1943, Geol. Soc. America Bull., v. 54, no. 6, p. 863.

Fizzle Flat lentil (in Terlingua formation)
Cretaceous (Gulf series) : Texas.
C. G. Moon, 1953, Geol. Soc. America Bull., v. 64, no. 2, p. 164, 169–170, fig. 2.

Flag Rock formation
Precambrian: South Dakota.
T. A. Dodge, 1942, Geol. Soc. America Bull., v. 53, no. 4, p. 563.
J. A. Noble and J. O. Harder, 1948, Geol. Soc. America Bull., v. 59, no. 9, p. 944, 949–952, pl. 1.

Flamand limestone member (of Saint Bartholomew formation)
Eocene, middle: St. Bartholomew, French West Indies.
R. A. Christman, 1953, Geol. Soc. America Bull., v. 64, no. 1, p. 69–70.

Flannigan cyclothem
Pennsylvanian: Illinois.
W. A. Newton and J. M. Weller, 1937, Ill. State Geol. Survey Rept. Inv. 45, p. 9, 10.

Flat Creek cyclothem
Pennsylvanian: Illinois.
H. R. Wanless, 1955, Am. Assoc. Petroleum Geologists Bull., v. 39, no. 9, p. 1764 (table 2).

Flatiron coquinite member (of Riceville formation)
Upper Devonian: Pennsylvania.
Bradford Willard *in* Bradford Willard, F. M. Swartz, and A. B. Cleaves, 1939, Pa. Geol. Survey, ser. 4, Bull. G 19, p. 14 (footnote), 278 (footnote).

Flat Rock tongue (of San Fernando formation)
Oligocene: Trinidad, British West Indies.
R. M. Stainforth, 1948, Am. Assoc. Petroleum Geologists Bull., v. 32, no. 7, p. 1318.

Flat Rock Creek granite
Age not stated: Virginia.
J. P. Meador, 1949, (abs.) Va. Acad. Sci. Proc. 1948–1949, p. 137.

Flavrian granite
Precambrian: Quebec, Canada.
H. C. Cooke, W. F. James, and J. B. Mawdsley, 1931, Canada Geol. Survey Mem. 166, p. 127–128.

Flavrian Lake granite
See Flavrian granite.

Fleming chert breccia
Precambrian (Proterozoic): Quebec and Newfoundland (Labrador), Canada.
H. R. Rice, 1949, Canadian Mining Jour., v. 70, no. 9, p. 71–72.
J. M. Harrison, 1952, Canada Geol. Survey Paper 52–20, p. 8–9.

Fleming cyclothem or formation
Pennsylvanian (Des Moines): Kansas.
G. E. Abernathy, 1937, Kans. Geol. Soc. Guidebook 11th Ann. Field Conf., p. 18, 20, 23; 1938, Kans. Acad. Sci. Trans., v. 41, p. 193, 195.

Fleming Inlet series
Triassic: Northeast Greenland.
Otto Nordenskjöld, 1907, Meddel. om Grønland, hefte 28, pt. 5, p. 175–177.

Fletcher anhydrite member (of Salado formation)
Permian: Subsurface in New Mexico and Texas.
W. B. Lang, 1942, Am. Assoc. Petroleum Geologists Bull., v. 26, no. 1, p. 69, 75–78.

Fleur de Lys group
Precambrian: Newfoundland, Canada.
D. M. Baird, 1951, Canada Geol. Survey Paper 51–21, p. 13–16.

Flint Hill sandstone member (of Fort Scott formation)
Pennsylvanian (Desmoinesian): Missouri.
A. G. Unklesbay *in* F. C. Greene and M. V. Searight, 1949, Mo. Geol. Survey and Water Res. Rept. Inv. 11, p. 6, fig. 1.

Florentino formation
Oligocene, upper: Dominican Republic.
P. J. Bermudez, 1949, Cushman Lab. Foram. Research Special Pub. 25, p. 27.

Floride dolomite
Middle Silurian: Utah.
F. W. Osterwald, 1953, U. S. Geol. Survey Trace Elements Inv. Rept. TEI–330, p. 105.

Flour Bluff sand
Oligocene: Texas (subsurface).
Alexander Deussen and K. D. Owen, 1939, Am. Assoc. Petroleum Geologists Bull., v. 23, no. 11, p. 1634.

Flour Sack member (of Bright Angel shale)
Lower and/or Middle Cambrian: Arizona.
E. D. McKee, 1945, Carnegie Inst. Washington Pub. 563, p. 14, 29, 82–84.

Fly sandstone
Pennsylvanian (Monongahela): Ohio.
A. T. Cross, W. H. Smith, and Thomas Arkle, Jr., 1950, Field guide for the special field conference on the stratigraphy, sedimentation and nomenclature of the Upper Pennsylvanian and Lower Permian strata (Monongahela, Washington and Greene series) in the northern portion of the Dunkard Basin of Ohio, West Virginia, and Pennsylvania: W. Va. Geol. and Econ. Survey, Section 26 (upper part).

Fogo group
Ordovician(?): Newfoundland, Canada.
D. M. Baird, 1950, Canada Geol. Survey Paper 50–22, p. 15–28.

Foldvik Creek formation
Lower Carboniferous(?): Northeast Greenland.
Lauge Koch, 1929, Meddel. om Grønland, bind 73, afd. 2, nr. 1, p. 95; nr. 2, p. 244.

Foley formation
Pliocene: Louisiana (subsurface).
P. H. Jones *in* P. H. Jones, A. N. Turcan, Jr., and H. E. Skibitzke, 1954, La. Dept Conserv. Geol. Bull. 30, p. 56–61.

Fonda limestone member (of Tribes Hill formation)
Lower Ordovician (lower Canadian): New York.
D. W. Fisher, 1954, Geol. Soc. America Bull., v. 65, no. 1, p. 76 (fig. 2), 89–90.

Fond Moustique tuffs
Oligocene, lower: Martinique, French West Indies.
Louis Barrabé, 1928 [France] Office national des combustibles liquides Annales, 3e année, no. 1, p. 9–11, 26.
Alfred Senn, 1940, Am. Assoc. Petroleum Geologists Bull., v. 24, no. 9, p. 1581, 1593.

Fontenelle member (of Green River formation)
Eocene, middle: Wyoming.
J. H. Donovan, 1950, Wyo. Geol. Assoc. Guidebook 5th Ann. Field Conf., p. 63.

Fool Creek conglomerate
Oligocene(?): Utah.
F. W. Christiansen, 1951, Utah Geol. Mineralog. Survey [Utah Geol. Soc.] Guidebook 6, p. 9, 10–11.

Forbes formation
Upper Cretaceous (Chico): California.
J. M. Kirby, 1942, (abs.) Am. Assoc. Petroleum Geologists Bull., v. 26, no. 5, p. 899; 1943, v. 27, no. 3, p. 282–283.

Forbush Creek facies (of New Providence formation)
Lower Mississippian: Kentucky.
H. J. Klepser, 1937, Ohio State Univ. Abs. Doctors' Dissert. 24, p. 182–183.

Ford River granite
Precambrian (Huronian); Michigan.
R. M. Dickey, 1938, Jour. Geology, v. 46, no. 3, pt. 1, p. 321–335.

Forestville member (of Canadaway formation)
Upper Devonian (Senecan): New York.
I. H. Tesmer, 1954, Dissert. Abs., v. 14, no. 12, p. 2317, 2318.

Forge Hollow member (of Bertie formation)
Upper Silurian (Cayugan): New York.
L. V. Rickard, 1955, N. Y. Geol. Assoc. Guidebook 27th Ann. Meeting, p. 7.

Forlorn Hope shale
Lower Cambrian: Nevada.
J. F. Mason *in* A. W. Grabau, 1936, Paleozoic formations in the light of the pulsation theory, v. 1, Lower and Middle Cambrian pulsations: 2d ed., Peiping, China, University Press, Natl. Univ. Peking, p. 274–276.

Forman volcanics
Miocene: Nevada.
V. P. Gianella, 1934, Mining and Metallurgy, v. 15, no. 331, p. 299.

Forreston member (of Grand Detour formation)
Middle Ordovician: Illinois.
J. S. Templeton and H. B. Willman, 1952, Tri-State Geol. Soc. Guidebook 16th Ann. Field Conf., fig. 3.

Fort Ann limestone member (of Tribes Hill formation)
Lower Ordovician: New York.
R. R. Wheeler, 1941, (abs.) Geol. Soc. America Bull., v. 52, no. 12, pt. 2, p. 1938–1939; 1942, Am. Jour. Sci., v. 240, no. 7, p. 518, 522.

Fort Buchanan formation
Upper Cretaceous: Arizona.
A. A. Stoyanow, 1949, Geol. Soc. America Mem. 38, p. 59.

Fort Chimo group
Precambrian: Quebec, Canada.
P. E. Auger, 1954, Canadian Mining and Metall. Bull., v. 47, no. 8, p. 530.

Fort Crittenden formation

Upper Cretaceous: Arizona.

A. A. Stoyanow, 1937, (abs.) Geol. Soc. America Proc. 1936, p. 297 (table); 1949, Geol. Soc. America Mem. 38, p. 59–60.

Fort Hunter sandstone member (of Mahantango formation)

Middle Devonian: Pennsylvania.

Bradford Willard *in* Bradford Willard, F. M. Swartz, and A. B. Cleaves, 1939, Pa. Geol. Survey, ser. 4, Bull. G 19, p. 138, 139, 180–182.

Fortin series

Devonian: Quebec, Canada.

H. W. McGerrigle, 1946, Royal Soc. Canada Trans., sec. 4, v. 40, p. 47–49.

Fort Johnson member (of Tribes Hill formation)

Lower Ordovician (lower Canadian): New York.

D. W. Fisher, 1954, Geol. Soc. America Bull., v. 65, no. 1, p. 76 (fig. 2), 84–85.

Fort Kent shale

Lower Devonian: Maine, and New Brunswick, Canada.

O. O. Nylander, 1940, Geological formations of the St. Johns River valley, northern Maine and New Brunswick: Caribou, Maine, p. 3–4.

Fort Mountain gneiss

Precambrian: Georgia.

A. S. Furcron, K. H. Teague, and J. L. Calver, 1946, (abs.) Geol. Soc. America Bull., v. 57, no. 12, pt. 2, p. 1195; 1947, Ga. Geol. Survey Bull. 53, p. 9–11.

Fort Nelson formation

Upper Cretaceous: British Columbia and Yukon, Canada.

E. D. Kindle, 1944, Canada Geol. Survey Paper 44–16, p. 13–15.

Fort Steele formation

Precambrian (Proterozoic): British Columbia, Canada.

H. M. A. Rice, 1937, Canada Geol. Survey Mem. 207, p. 4–6.

Fortune formation

Devonian: Missouri.

J. G. Grohskopf, E. L. Clark, and S. P. Ellison, Jr., 1943, Mo. Geol. Survey and Water Res. 62d Bienn. Rept., App. 4, p. 9–15.

Fortune tuffs and cherts

Ordovician, Newfoundland, Canada.

G. R. Heyl, 1936, Newfoundland Geol. Survey Bull. 3, p. 9.

Fortune Brook formation

Lower and Middle Cambrian: Newfoundland, Canada.

T. N. Walthier, 1950, N. Y. Acad. Sci. Trans., ser. 2, v. 12, no. 7, p. 210.

Fort Vermilion member (of Slave Point formation)

Middle Devonian: Alberta, Canada.

J. Law, 1955, Alberta Soc. Petroleum Geologists Jour., v. 3, no. 6, p. 82.

Fort Wallace ash bed (in Ash Hollow member of Ogallala formation)

Pliocene: Kansas.

Ada Swineford, J. C. Frye, and A. B. Leonard, 1955, Jour. Sed. Petrology, v. 25, no. 4, p. 253–254, fig. 1.

Fossil Brook formation

Middle Cambrian (Loch Lomond): New Brunswick, Canada.

A. O. Hayes and B. F. Howell, 1937, Geol. Soc. America Special Paper 5, p. 69–72.

Fossil Hill formation

Middle Silurian (Niagaran) : Ontario, Canada.

G. S. Hume, 1925, Canada Geol. Survey Mem. 145, p. 37.
T. E. Bolton, 1953, Canada Geol. Survey Paper 53–23, p. 12–13.

Fossill Mountain formation

Upper Jurassic (Oxfordian) : East Greenland.

Alfred Rosenkrantz *in* Lauge Koch, 1929, Meddel. om Grønland, bind 73, afd. 2, nr. 1, p. 146–147.
Lauge Koch, 1929, Meddel. om Grønland, bind 73, afd. 2, nr. 2, p. 254.

Foulke Cove slate and shale

Ordovician: Newfoundland, Canada.

G. R. Heyl, 1936, Newfoundland Geol. Survey Bull. 3, p. 7.

Fountain Peak rhyolite

Miocene(?) : California.

J. C. Hazzard, 1954, Calif. Dept. Nat. Res., Div. Mines Bull. 170, chap. 4, p. 33, pl. 2.

Fourchu group

Precambrian (Proterozoic) : Nova Scotia, Canada.

L. J. Weeks, 1954, Canada Geol. Survey Mem. 277, p. 16–25.

Four Mile Brook member (of Heppel sandstone)

Upper Devonian (Senecan) : Quebec, Canada.

E. M. Kindle, 1938, Bull. Am. Paleontology, v. 24, no. 82, p. 73 (39).

Four Mile Dam formation

Middle Devonian: Michigan.

G. A. Cooper and A. S. Warthin, 1941, Washington Acad. Sci. Jour., v. 31, no. 6, p. 260.

Fournière sediments

Precambrian: Quebec, Canada.

H. C. Gunning, 1937, Canada Geol. Survey Mem. 206, p. 19.

Fox flows

Precambrian: Northwest Territories (Mackenzie), Canada.

J. F. Henderson and I. C. Brown, 1950, Canadian Inst. Mining and Metallurgy Trans., v. 53, p. 418.

Fox Canyon member (of San Pedro formation)

Pleistocene, lower: California.

T. L. Bailey, 1954, *in* Pacific Petroleum Geologist, v. 8, no. 9, p. 1.
R. G. Thomas and others, 1954, Calif. Dept. Nat. Res., Div. Mines Bull. 170, chap. 6, p. 20, pl. 2.

Fra Cristobal formation

Middle Pennsylvanian: New Mexico.

M. L. Thompson, 1948, Kans. Univ. Paleont. Contr. 4, Protozoa, art. 1, p. 73, 74–75.

Fraileys shale

Mississippian (Chester) : Kentucky.

A. C. McFarlan and others, 1955, Ky. Geol. Survey, ser. 9, Bull. 16, p. 18.

Franklin Creek basalt

Triassic: British Columbia, Canada.

J. S. Stevenson, 1945, British Columbia Minister Mines Ann. Rept. 1944, p. A–145.

Franz Josef beds

Lower Paleozoic: Northeast Greenland.

J. M. Wordie, 1927, Geog. Jour., v. 70, no. 3, p. 252.

Frazier Well gravel
Pre-Pleistocene: Arizona.
Donaldson Koons, 1948, Science, v. 107, no. 2784, p. 475–476.

Freedhem tonalite
Precambrian (Algoman): Minnesota.
M. S. Woyski, 1949, Geol. Soc. America Bull., v. 60, no. 6, p. 1002, 1010, pl. 1.

Freemans Bay limestone
Miocene: Trinidad, British West Indies.
Ernest Lehner, 1935, [France] Office national des combustibles liquides Annales, 10e année, no. 4, p. 717 (table).
H. H. Suter, 1951, Colonial Geology and Min. Res., v. 2, no. 3, p. 204 (table 12) [1952].

Frenchburg siltstone member (of Brodhead formation)
Lower Mississippian: Kentucky.
P. B. Stockdale, 1939, Geol. Soc. America Special Paper 22, p. 180, 182–184.

French Flat sandstone
Miocene, upper, to Pliocene: California.
D. I. Axelrod, 1950, Carnegie Inst. Washington Pub. 590, pl. 1.

Frenchman formation
Upper Cretaceous: Saskatchewan, Canada.
G. M. Furnival, 1942, Canada Geol. Survey Paper (Prelim. Map) 42–5.

Frenchmans Bay series
Silurian: Maine.
G. H. Chadwick, 1944, N. Y. Acad. Sci. Trans., ser. 2, v. 6, no. 6, p. 172, 176–177.

Frensley limestone
Pennsylvanian (Lampasas): Oklahoma.
B. H. Harlton, 1938, Am. Assoc. Petroleum Geologists Bull., v. 22, no. 7, p. 854 (fig. 1).
R. M. Jeffords, 1942, Kans. State Geol. Survey Bull. 41, pt. 5, p. 250.

Fresh Pond granodiorite
Precambrian: Newfoundland, Canada.
R. E. Van Alstine, 1948, Newfoundland Geol. Survey Bull. 23, p. 17.

Fresnal group
Pennsylvanian (Virgil): New Mexico.
M. L. Thompson, 1942, N. Mex. State Bur. Mines Min. Res. Bull. 17, p. 27, 73–79.

Fresnian stage
Eocene, late: California.
V. S. Mallory, 1953, (abs.) Jour. Paleontology, v. 27, no. 6, p. 903.

Fresnoian stage
See Fresnian stage.

Friant formation
Miocene: California.
G. H. Jones, 1940, Am. Geophys. Union Trans., v. 21, pt. 1, p. 62 (fig. 2), 66.

Friendship Quarry marl (of Navet formation)
Eocene, lower or middle: Trinidad, British West Indies.
J. A. Cushman and H. H. Renz, 1948, Cushman Lab. Foram. Research Special Pub. 24, p. 2.

Frontiere group
Ordovician (?) : Quebec, Canada.
Jacques Béland, 1952, Quebec Dept. Mines Prelim. Rept. 279, p. 6.

Frontier Lake conglomerate
Precambrian : Saskatchewan, Canada.
A. M. Christie, 1952, Canada Geol. Survey Mem. 269, p. 14.

Frood series
Precambrian : Ontario, Canada.
Anonymous, 1937, Canadian Mining Jour., v. 58, no. 11, p. 592.

Fulda limestone
Pennsylvanian (Pottsville) : Indiana.
D. W. Franklin, 1944, Ill. State Acad. Sci. Trans., v. 37, nos. 3–4, p. 86, 88–89.

Funks formation
Upper Cretaceous (Chico) : California.
J. M. Kirby, 1942, (abs.) Am. Assoc. Petroleum Geologists Bull., v. 26, no. 5, p. 899; 1943, v. 27, no. 3, p. 284.

Funk Valley formation
Upper Cretaceous : Utah.
E. M. Spieker, 1946, U. S. Geol. Survey Prof. Paper 205–D, p. 122, 128.

Furnace Creek formation
Miocene or Pliocene : California.
H. D. Curry *in* D. I. Axelrod, 1940, Jour. Geology, v. 48, no. 5, p. 527–528, 531.

Furnace Creek quartz diorite gneiss
Precambrian : Pennsylvania.
T. V. Buckwalter, 1955, Pittsburgh Geol. Soc. Field Guidebook Appalachian Geology, p. 93, 95.

Fuyk sandstone member (of Rondout waterlime)
Upper Silurian : New York.
G. H. Chadwick, 1940, N. Y. State Geol. Assoc. 16th Ann. Meeting Field Guide Leaflets, p. 2; 1944, N. Y. State Mus. Bull. 336, p. 45–51 [1946].

Fyns Sø dolomite
Age unknown : North Greenland.
P. J. Adams and J. W. Cowie, 1953, Meddel. om Grønland, bind 111, nr. 7, p. 9, 11–12.

Gadsden limestone
Eocene (Jackson) : Florida (subsurface).
W. E. Moore, 1955, Fla. Geol. Survey Bull. 37, p. 42–44.

Gaikema sandstone member (of Tuxedni formation)
Middle Jurassic : Alaska.
C. E. Kirschner and D. L. Minard, 1948, U. S. Geol. Survey Oil and Gas Inv. Prelim. Map 95 [1949].

Gailor dolomite
Lower Ordovician : New York.
D. W. Fisher and G. F. Hanson, 1951, Am. Jour. Sci., v. 249, no. 11, p. 807–808.

Gaines group
Upper Cretaceous : California.
F. M. Anderson, 1937, (abs.) Am. Assoc. Petroleum Geologists Bull., v. 21, no. 12, p. 1612.

Gainesville sandstone (in Blackjack Knob member of Theodosia formation)
Lower Ordovician: Missouri and Arkansas.
J. S. Cullison, 1944, Mo. Univ. School Mines and Metallurgy Bull., Tech. Ser., v. 15, no. 2, p. 27.

Galantry breccia
Post-Cambrian: St. Pierre Island, French North America.
Edgar Aubert de la Rüe, 1932, Rev. de géographic physique et de géologie dynamique, v. 5, fasc. 4, p. 427, 429, 452.

Galata ash
[Recent]: Montana, and Alberta, Canada.
Leland Horberg and R. A. Robie, 1955, Geol. Soc. America Bull., v. 66, no. 8, p. 949–955.

Galdock beds
Galdog beds or formation
See Ngardok beds.

Galeota group
Eocene(?): Trinidad, British West Indies.
E. H. Cunningham-Craig, 1905, Trinidad Legislative Council Paper no. 25 of 1905, p. 7.

Galera formation
Lower Cretaceous: Trinidad, British West Indies.
H. G. Kugler, 1953, Vereinigung Schweizer Petroleum Geologen u. Ingenieure Bull., v. 20, no. 59, p. 32.

Galera Grit member (of Galera formation)
Lower Cretaceous: Trinidad, British West Indies.
H. G. Kugler, 1953, Vereinigung Schweizer Petroleum Geologen u. Ingenieure Bull., v. 20, no. 59, p. 32.

Galet beds
Middle Ordovician: Quebec, Canada.
G. W. Sinclair, 1953, Am. Jour. Sci., v. 251, no. 12, p. 847.

Galkyoku limestone
See Ngarekeukl limestone.

Gallaway beds
Miocene: California.
C. E. Weaver, 1943, Calif. Dept. Nat. Res., Div. Mines Bull. 118, pt. 3, p. 630, 631 (fig. 280).

Galloway sandstone member (of Gething formation)
Lower Cretaceous: British Columbia, Canada.
F. H. McLearn and E. J. W. Irish, 1944, Canada Geol. Survey Paper 44–15, p. 8.

Gambier group
Triassic(?) and/or older: British Columbia, Canada.
J. E. Armstrong, 1954, Canada Geol. Survey Paper 53–28, p. 2–3.

Gamboa formation
Oligocene: Panama Canal Zone.
Karl Sapper, 1905, Petermanns Mitt. Ergänzungsbd. 32, Heft 151, p. 39, 56, pl. 3 (cross section 29).

Game Lodge granite
Precambrian: South Dakota.
G. L. Taylor, 1935, Am. Jour. Sci., 5th ser., v. 29, no. 171, p. 281–282.

Gamerco formation

Recent: New Mexico.

L. B. Leopold and C. T. Snyder, 1951, U. S. Geol. Survey Water-Supply Paper 1110–A, p, 6–9.

Gamsetu agglomerate

See Kameset (Gamusetsu) agglomerate.

Gamusa beds

Lower Pennsylvanian: Sonora, Mexico.

Charles Schuchert, 1935, Historical geology of the Antillean-Caribbean region: New York, John Wiley and Sons, p. 138.

Gander Lake series

Silurian: Newfoundland, Canada.

W. H. Twenhofel, 1947, Am. Jour. Sci., v. 245, no. 2, p. 82.

Ganteaume conglomerate

Paleocene: Trinidad, British West Indies.

H. H. Suter, 1951, Colonial Geology and Min. Res., v. 2, no. 3, p. 193, table 5 [1952].

Gap Ridge sandstone member (of Stanley formation)

Pennsylvanian: Arkansas.

N. H. Stearn *in* J. M. Hansell and J. C. Reed, 1935, Am. Inst. Mining and Metall. Eng. Trans., v. 115, p. 245; 1936, Econ. Geology, v. 31, no. 1, p. 12–15.

Garas beds

See Garzas beds.

Garbutt formation

Lower Cretaceous: British Columbia and Yukon, Canada.

E. D. Kindle, 1944, Canada Geol. Survey Paper 44–16, p. 10.

Garceno sandstone member (of Cook Mountain formation)

Eocene (Claiborne): Texas.

J. M. Patterson, 1942, Am. Assoc. Petroleum Geologists Bull., v. 26, no. 2, p. 259 (fig. 2), 261–262.

Garcia formation

Pennsylvanian (Des Moines): New Mexico.

M. L. Thompson, 1942, N. Mex. State Bur. Mines Min. Res. Bull. 17, p. 27, 50–51.

Gardar formation

Precambrian: Southwest Greenland.

R. D. Crommelin, 1937, Meddel. om Grønland, bind 113, nr. 1, p. 6.
C. E. Wegmann, 1938, Meddel. om Grønland, bind 113, nr. 2, p. 14, 60–123, 134.

Garden Island formation

Lower Devonian: Michigan.

G. M. Ehlers *in* K. K. Landes, G. M. Ehlers, and G. M. Stanley, 1945, Mich. Dept. Conserv. Geol. Survey Div. Pub. 44, Geol. Ser. 37, p. 34, 35, 73–80.

Garim limestone

Pleistocene: Caroline Islands (Garim, island off Yap).

Risaburo Tayama, 1935, Topography, geology, and coral reefs of the Yap Islands: Tohoku Univ., Inst. Geology and Paleontology Contr. in Japanese Language, no. 19, p. 27–29 [English translation in library of U. S. Geol. Survey, p. 24–25]; 1952, Coral reefs in the South Seas: Japan Hydrog. Office Bull., v. 11, p. 63, table 4 [English translation in library of U. S. Geol. Survey, p. 74].

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Garland Peak syenite
Carboniferous(?) (White Mountain magma series): New Hampshire.
Alonzo Quinn, 1937, Geol. Soc. American Bull., v. 48, no. 3, p. 389.

Garlock series
Permian: California.
T. W. Dibblee, Jr., 1952, Calif. Dept. Nat. Res., Div. Mines Bull. 160, p. 12, 15–19.

Garnavillo member (of Guttenberg formation)
Middle Ordovician: Illinois.
J. S. Templeton and H. B. Willman, 1952, Tri-State Geol. Soc. Guidebook 16th Ann. Field Conf., figs 3, 9.

Garnet Canyon tongue
Lower and/or Middle Cambrian: Arizona.
E. D. McKee, 1945, Carnegie Inst. Washington Pub. 563, p. 14, 29, 92.

Garo sandstone
Jurassic(?): Colorado.
D. B. Gould and others, 1947, *in* Rocky Mtn. Assoc. Geologists Guidebook Field Conf., June 16–19, p. 39.
J. T. Stark and others, 1949, Geol. Soc. America Mem. 33, p. 47–48.

Garrison Hills granite
Upper Silurian or younger: Newfoundland, Canada.
W. B. Jewell, 1939, Newfoundland Geol. Survey Bull. 17, p. 11.

Gartra grit member (of Stanaker formation)
Upper Triassic: Utah.
H. D. Thomas and M. L. Krueger, 1946, Am. Assoc. Petroleum Geologists Bull., v. 30, no. 8, pt. 1, p. 1271, 1274.

Garudokku beds
Garukijokku limestone
See Ngarekeukl limestone.

Garzas beds
Upper Cretaceous: California.
F. M. Anderson, 1937, (abs.) Am. Assoc. Petroleum Geologists Bull., v. 21, no. 12, p. 1612; 1943, Calif. Dept. Nat. Res., Div. Mines Bull. 118, pt. 2, p. 185 (fig. 69), 186 [preprint 1941].

Gassaway member (of Chattanooga shale)
Upper Devonian: Tennessee and Alabama.
Guy Campbell, 1946, Geol. Soc. America Bull., v. 57, no. 9, p. 884, 886.

Gateway Canyon member (of Muav formation)
Lower and/or Middle Cambrian: Arizona.
E. D. McKee, 1945, Carnegie Inst. Washington Pub. 563, p. 14, 29, 105–109.

Gatuña formation
Pleistocene(?): New Mexico and Texas.
W. B. Lang *in* T. W. Robinson and W. B. Lang, 1938, N. Mex. State Engineer 12th–13th Bienn. Rept., p. 84–85 [1939].

Gatuncillo formation
Eocene, middle and upper: Panama and Panama Canal Zone.
T. F. Thompson, 1944, Geological explorations in the vicinity of Rio Quebrancha for the Panama Cement Company: Panama Canal, Special Eng. Div., p. 12–13.
W. P. Woodring and T. F. Thompson, 1949, Am. Assoc. Petroleum Geologists Bull., v. 33, no. 2, p. 227–228.

Gautier formation
Upper Cretaceous: Trinidad, British West Indies.
H. G. Kugler, 1950, Asociación Venezolano de Geología. Minería y Petróleo Bol., tomo 2. no. 1, p. 48 (correlation chart).
Hans Bolli, 1951, Jour. Paleontology, v. 25, no. 2, p. 193.

Gavilan Peak gabbro
Jurassic(?): California.
E. F. Osborn, 1939, Geol. Soc. America Bull., v. 50, no. 6, p. 925–926.

Geddes limestone
Middle Cambrian: Nevada.
H. E. Wheeler and D. M. Lemon, 1939, Nev. Univ. Bull., Geology and Mining Ser., no. 31, p. 20–23.

Geers Corners gabbro
Precambrian: New York.
A. F. Buddington, 1936, 16th Internat. Geol. Cong. Rept., v. 1, p. 348; 1939, Geol. Soc. America Mem. 7, p. 57, 59, 61

Geiser Quarry member (of Dutchtown formation)
Lower Ordovician: Missouri.
H. S. McQueen, 1937, Mo. Geol. Survey and Water Res. 59th Bienn. Rept. App. 1, p. 18–19.

Gemuk group
Carboniferous(?) to Lower Cretaceous: Alaska.
W. M. Cady and others, 1955, U. S. Geol. Survey Prof. Paper 268, p. 27–34.

Genoa member (of Oneota formation)
Lower Ordovician: Wisconsin.
G. O. Raasch, 1952, Ill. Acad. Sci. Trans., v. 45, p. 88–90, 91–92.

Gensolle tuffs
Miocene: Guadeloupe (Grande Terre), French West Indies.
Alfred Senn, 1940, Am. Assoc. Petroleum Geologists Bull., v. 24, no. 9, p. 1581.

Geode Creek basalt
Miocene and/or Pliocene: Wyoming.
A. D. Howard, 1937, Geol. Soc. America Special Paper 6, p. 19–21, 78.

Geoffrey formation
Upper Cretaceous: British Columbia, Canada.
J. L .Usher, 1952, Canada Geol. Survey Bull. 21, p. 28.

George Pond breccia
Silurian: Quebec, Canada.
T. H. Clark, 1936, Canadian Field Naturalist, v. 50, no. 3, p. 32–33.

Germaine Brook granite
Pre-Carboniferous: New Brunswick, Canada.
F. J. Alcock, [1938], Canada Geol. Survey Mem. 216, p. 26, map.

Germania formation
Upper Devonian: Pennsylvania and New York.
J. G. Woodruff, 1942, N. Y. State Mus. Bull. 326, p. 47–50.

Getaway limestone member (of Cherry Canyon formation)
Permian: Texas and New Mexico.
P. B. King *in* A. K. Miller and W. M. Furnish, 1940, Geol. Soc. America Special Paper 26, p. 9.
P. B. King, 1942, Am. Assoc. Petroleum Geologists Bull., v. 26, no. 4, p. 580–581, pl. 2.

Getmuna rhyolite group
Eocene: Alaska.
W. M. Cady and others, 1955, U. S. Geol. Survey Prof. Paper 268, p. 50–53.

Getsuyoto beds
See Getuyoto beds.

Getuyoto beds
Miocene: Caroline Islands (Truk).
Risaburo Tayama, 1952, Coral reefs in the South Seas: Japan Hydrog. Office Bull., v. 11, p. 69, table 5 [English translation in library of U. S. Geol. Survey, p. 84].

Geuda Springs shale member (of Wellington formation)
Permian: Kansas.
W. A. Ver Wiebe, 1937, Wichita Municipal Univ. Bull., v. 12, no. 5, p. 12–14.

Ghost Range complex
Precambrian (pre-Algoman): Ontario, Canada.
Jack Satterly, 1954, Ontario Dept. Mines Ann. Rept., v. 62, pt. 7, p. 15–16.

Gibbons conglomerate lentil (in Marble Falls formation)
Lower Pennsylvanian: Texas.
F. B. Plummer, 1945, Tex. Univ. Bur. Econ. Geology Pub. 4401, p. 65–66.

Gibson limestone member (of Grindstone Creek formation)
Middle Pennsylvanian (Strawn): Texas.
H. T. Mann *in* R. J. Cordell, H. J. Fitzgeorge, and J. B. Sparks, 1954, Abilene Geol. Soc. Guidebook, p. 22, fig. 16.

Gila cyclothem (including Gila limestone)
Pennsylvanian: Illinois.
W. A. Newton and J. M. Weller, 1937, Ill. State Geol. Survey Rept. Inv. 45, p. 27–28.

Gilbert andesite
Pliocene: Nevada.
H. G. Ferguson, S. W. Muller, and S. H. Cathcart, 1953, Geology of the Coaldale quadrangle, Nevada: U. S. Geol. Survey Geol. Quadrangle Map [GQ 23].

Gile Mountain formation
Middle Ordovician(?): Vermont and New Hampshire.
C. G. Doll, [1945?], Vt. State Geologist 24th Rept., p. 18–19.

Giles Cove formation
Ordovician: Newfoundland, Canada.
G. R. Heyl, 1937, Newfoundland Geol. Survey Bull. 8, p. 10–11.

Gillies Lake porphyry
Precambrian (Algoman): Ontario, Canada.
G. D. Furse, 1948, *in* Structural geology of Canadian ore deposits: Canadian Inst. Mining and Metallurgy, p. 487.

Gilman sandstone member (of Leadville dolomite)
Mississippian: Colorado.
Ogden Tweto and T. S. Lovering, 1947, Colo. Min. Res. Board [Bull.], p. 380 (chart)
Ogden, Tweto, 1949, Colo. Sci. Soc. Proc., v. 15, no. 4, p. 177–184, table 1.

Ginseng siltstone member (of Brodhead formation)
Lower Mississippian: Kentucky.
P. B. Stockdale, 1939, Geol. Soc. America Special Paper 22, p. 151–153.

Glacier Park facies (of Belt series)
Precambrian: Alberta, Canada; and Montana.
C. L. Fenton and M. A. Fenton, 1937, Geol. Soc. America Bull., v. 48, no. 12, p. 1877

Glamorgan granite gneiss
Precambrian: Ontario, Canada.
Jack Satterly and D. F. Hewitt, 1955, Ontario Dept. Mines Geol. Circ. 2, p. 4.

Glasco limestone lentil (of Rondout waterlime)
Upper Silurian: New York.
G. H. Chadwick, 1944, N. Y. State Mus. Bull. 336, p. 44–51 [1946].

Glass Mountain lava
Recent: California.
C. A. Anderson, 1941, Calif. Univ. Dept. Geol. Sci. Bull., v. 25, no. 7, p. 374, 375–376

Glenbrooke shale
Silurian: Quebec, Canada.
T. H. Clark, 1936, Canadian Field Naturalist, v. 50, no. 3, p. 33.

Glendale member (of Denmark formation)
Middle Ordovician (Trentonian): New York.
P. A. Chenoweth, 1952, Geol. Soc. America Bull., v. 63, no. 6, p. 530–531.

Glendo shale
Permian: Wyoming and South Dakota.
G. E. Condra, E. C. Reed, and O. J. Scherer, 1940, Nebr. Geol. Survey Bull. 13, p. 2, 4, 45.

Glendora volcanics
Miocene: California.
J. S. Shelton, 1946, U. S. Geol. Survey Oil and Gas Inv. Prelim. Map 63.

Glen Ellen formation
Pliocene(?) and Pleistocene: California.
C. E. Weaver, 1949, Geol. Soc. America Mem. 35, p. 16 (table 3), 98–99.

Glen Falls formation
Lower Cambrian (Hanfordian): New Brunswick, Canada.
A. O. Hayes and B. F. Howell, 1937, Geol. Soc. America Special Paper 5, p. 64–66

Glenhaven member (of Guttenberg formation)
Middle Ordovician: Illinois.
J. S. Templeton and H. B. Willman, 1952, Tri-State Geol. Soc. Guidebook 16th Ann. Field Conf., figs. 3, 9.

Glenlyon granodiorite
Upper Jurassic or Cretaceous(?): Yukon, Canada.
J. R. Johnston, 1936, Canada Geol. Survey Mem. 200, p. 14.

Glennon limestone member (of Lykins formation)
Permian: Colorado.
L. W. LeRoy, 1946, Colo. School Mines Quart., v. 41, no. 2, p. 31, 36–40.

Glenwood series
Precambrian: Quebec, Canada.
H. J. Conolly and R. C. Hart, 1936, Canadian Inst. Mining and Metallurgy Trans., v. 39, p. 11.

Glenwood tongue (of Weber sandstone)
Pennsylvanian to Permian: Colorado.
J. W. Vanderwilt, 1953, *in* Rocky Mtn. Assoc. Geologists Guidebook Field Conf., May 14–16, p. 15, fig. facing p. 12.

Glenwood tuff
[Quaternary]: Hawaiian Islands (Hawaii).
J. B. Stone, 1926, Bernice P. Bishop Mus. Bull. 33, p. 26, 27.
C. K. Wentworth, 1938, Hawaiian Volcano Observatory 3d Special Rept., p. 55–56

Glenwood Canyon member (of Dotsero formation)
Upper Cambrian: Colorado.
N. W. Bass and S. A. Northrop, 1953, Am. Assoc. Petroleum Geologists Bull., v. 37, no. 5, p. 897–899.

Gloria formation
Pliocene, middle: Baja California, Mexico.
I. F. Wilson, 1948, Am. Assoc. Petroleum Geologists Bull., v. 32, no. 9, p. 1780–1781.

Goat Island member (of Lockport formation)
Middle Silurian (upper Niagaran): New York.
B. F. Howell and J. T. Sanford, 1947, Wagner Free Inst. Sci. Bull., v. 22, no. 4, p. 34.

Goat River horizon (of McBride group)
Precambrian: Alberta, Canada.
M. K. Sorensen, 1955, Alberta Soc. Petroleum Geologists Guidebook 5th Ann. Field Conf., p. 57.

Goat Rock pyroclastic deposits
Quaternary: Washington.
Jean Verhoogen, 1937, Calif. Univ. Dept. Geol. Sci. Bull., v. 24, no. 9, p. 274–277.

Goat Seep limestone
Permian (Guadalupe series): Texas and New Mexico.
P. B. King, 1942, Am. Assoc. Petroleum Geologists Bull., v. 26, no. 4, p. 588–589, 593, pl. 2.

Gobbler formation
Pennsylvanian (Morrowan?-Missourian): New Mexico.
L. C. Pray, 1954, N. Mex. Geol. Soc. Guidebook 5th Field Conf., p. 93.

Goble volcanic series
Eocene, upper: Oregon and Washington.
W. C. Warren, Hans Norbisrath, and R. M. Grivetti, 1945, U. S. Geol. Survey Oil and Gas Inv. Prelim. Map 42.

Goddard shale member (of Springer formation)
Pennsylvanian: Oklahoma.
M. G. Cheney and others, 1945, Am. Assoc. Petroleum Geologists Bull., v. 29, no. 2, p. 143.
H. D. Miser and others, 1954, Geologic Map of Okla. (1:500,000), U. S. Geol. Survey.

Godfrey shales
Upper Cretaceous: California.
N. L. Taliaferro, 1943, Calif. Dept. Nat. Res., Div. Mines Bull. 118, pt. 2, p. 132 [preprint 1941].

Godineau beds
Pleistocene: Trinidad, British West Indies.
H. G. Kugler, 1936, Am. Assoc. Petroleum Geologists Bull., v. 20, no. 11, p. 1451 (chart).
H. H. Suter, 1951, Colonial Geology and Min. Res., v. 2, no. 3, p. 212 (table 17), 213 [1952].

Godineau River marls

Oligocene, Trinidad, British West Indies.

C. J. Maury, 1925, Bull. Am. Paleontology, v. 10, no. 42, p. 169 (17).

R. A. Liddle, [1928], The geology of Venezuela and Trinidad: Forth Worth, Tex., J. P. MacGowan, p. 458–459.

Goeland granite

Precambrian: Quebec, Canada.

P. E. Imbault, 1948, Quebec Dept. Mines Prelim. Rept. 218, p. 8.

Gog formation

Lower Cambrian: Alberta and British Columbia, Canada.

Charles Deiss, 1939, (abs.) Geol. Soc. America Bull., v. 50, no. 12, p. 1906; 1940, v. 51, no. 5, p. 771–773.

Goldale formation

Precambrian: Ontario, Canada.

B. S. W. Buffam, 1948, *in* Structural geology of Canadian ore deposits: Canadian Inst. Mining and Metallurgy, p. 459.

Gold Butte granite

Age unknown: Nevada.

C. R. Longwell, 1936, Geol. Soc. America Bull., v. 47, no. 9, p. 1405.

Gold Centre series

Precambrian (Keewatin): Ontario, Canada.

G. B. Langford, 1941, Am. Inst. Mining Engineers Trans. ,v. 144, p. 153.

Golden member (of Arapahoe-Denver formation)

Tertiary: Colorado.

L. W. LeRoy, 1946, Colo. School Mines Quart., v. 41, no. 2, p. 100, 103, 104.

Golden Gate formation

Upper Cretaceous: California.

J. M. Kirby, 1943, Calif. Dept. Nat. Res., Div. Mines Bull. 118, pt. 3, p. 606.

Golden Grove intrusives

Pre-Carboniferous: New Brunswick, Canada.

A. O. Hayes and B. F. Howell, 1937, Geol. Soc. America Special Paper 5, p. 25–39.

Goldens Ranch formation

Eocene: Utah.

Siegfried Muessig, 1951, Science, v. 114, no. 2957, p. 234.

Golden Valley formation

Eocene: North Dakota and Montana.

W. E. Benson and W. M. Laird, 1947, (abs.) Geol. Soc. America Bull., v. 58, no. 12, pt. 2, p. 1166,1167.

W. D. Johnson, Jr., and R. P. Kunkel, 1954, U. S. Geol. Survey Oil and Gas Inv. Map OM 148.

Gold Park gabbro-diorite

Precambrian: California.

W. J. Miller, 1938, Geol. Soc. America Bull., v. 49, no. 3, p. 419–420.

Goldsborough formation

Cretaceous(?): Tobago, British West Indies.

J. C. Maxwell, 1948, Geol. Soc. America Bull., v. 59, no. 8, p. 816–817.

Goldson formation
Silurian: Newfoundland, Canada.
W. H. Twenhofel and R. R. Shrock, 1937, Geol. Soc. American Bull., v. 48, no. 12, p. 1749, 1767.

Goldvue quartz diorite
Precambrian (Archean): Quebec, Canada.
W. W. Weber, 1951, Quebec Dept. Mines Prelim. Rept. 255, p. 2, 11.

Goler formation
Eocene to Miocene: California.
T. W. Dibblee, Jr., 1952, Calif. Dept. Nat. Res., Div. Mines Bull. 160, p. 19–25.

Gonioceras Bay formation
Middle Ordovician (Black River): North Greenland.
G. T. Troedsson, 1926, Meddel. om Grønland, bind 71, nr. 1, p. 12, 110–111.

Gonzalez sands
Miocene: Tabasco and Chiapas, Mexico.
Ramiro Robles Ramos, 1942, Irrigación en Mexico, v. 23, no. 3, p. 45 (correlation chart).
G. P. Salas and Ernesto Lopez Ramos, 1951, Asociación Mexicana Geólogos Petroleros Bol., v. 3, nos. 1–2, p. 36–37.

Good Hope limestone
Eocene, lower: Jamaica, British West Indies.
C. A. Matley, 1924, Pan-Am. Geologist, v. 42, no. 4, p. 312.

Goodrich formation
Lower Cretaceous: British Columbia, Canada.
R. T. D. Wickenden and George Shaw, 1943, Canada Geol. Survey Paper 43–13, p. 7–8.

Goose Cove formation
Lower Cambrian: Newfoundland, Canada.
E. R. Rose, 1948, Newfoundland Geol. Survey Bull. 32, pt. 2, p. 44.

Goose Cove schist
Ordovician (?): Newfoundland, Canada.
J. R. Cooper, 1937, Newfoundland Geol. Survey Bull. 9, p. 24.

Goose Lake clay
Pennsylvanian: Illinois.
H. R. Wanless, 1939, Geol. Soc. America Special Paper 17, p. 25–26, 84.

Goose Tickle slate
Ordovician: Newfoundland, Canada.
J. R. Cooper, 1937, Newfoundland Geol. Survey Bull. 9, p. 8–9.

Gorbut member (of Gravel Point formation)
Middle Devonian: Michigan.
W. A. Kelly and G. W. Smith, 1947, Am. Assoc. Petroleum Geologists Bull., v. 31, no. 3, p. 457.

Gordo formation
Upper Cretaceous (Tuscaloosa group): Alabama, Mississippi, and Georgia.
L. C. Conant and W. H. Monroe, 1945, U. S. Geol. Survey Oil and Gas Inv. Prelim. Map 37.

Gordon Creek shale member (of Cook Mountain formation)
Eocene (Claiborne group): Mississippi.
E. P. Thomas, 1942, Miss. State Geol. Survey Bull. 48, p. 57–59.

Gore Mountain gabbro

Precambrian (Algoman) : New York.

M. H. Krieger, 1937, N. Y. State Mus. Bull. 308, p. 28–32, 36.

Gorgora shale member (of Fayette formation)

Eocene (Jackson) : Texas.

J. M. Patterson, 1942, Am. Assoc. Petroleum Geologists Bull., v. 26, no. 2, p. 259 (fig. 2), 268–269.

Gorman formation (in Ellenburger group)

Lower Ordovician : Texas.

V. E. Barnes and P. E. Cloud, Jr., 1945, Tex. Univ. Bur. Econ. Geology Min. Res. Circ. 34, p. 1, 8–19.

Goss Pond volcanics

Ordovician (?) : Newfoundland, Canada.

A. K. Snelgrove, 1931, Canadian Mining and Metall. Bull. 228, p. 485–487.

Gothic formation

Pennsylvanian (Des Moinesian) : Colorado.

R. L. Langenheim, Jr., 1951, (abs.) *in* Am. Assoc. Petroleum Geologists 36th Ann. Meeting [program], p. 29; 1952, Am. Assoc. Petroleum Geologists Bull., v. 36, no. 4, p. 561–563, 568–569.

Goudron sands (in Moruga formation)

Miocene, upper : Trinidad, British West Indies.

Ernst Lehner, 1935, [France] Office national des combustibles liquides Annales, 10e année, no. 4, p. 717 (table).

H. H. Suter, 1951, Colonial Geology and Min. Res., v. 2, no. 3, p. 205 (table 13), 209 [1952].

Gould glacial substage

Pleistocene (Wisconsin) : Colorado.

D. F. Eschman, 1952, (abs.) Geol. Soc. America Bull., v. 63, no. 12, pt. 2, p. 1380; 1955, Jour. Geology, v. 63, no. 3, p. 203–205.

Gouldbusk limestone member (of Moran formation)

Permian (Wolfcamp age) : Texas.

R. C. Moore *in* M. G. Cheney, 1948, Abilene Geol. Soc. [Guidebook] Spring Field Trip, June 11–12, p. 5, 13, sheets 3, 4.

R. C. Moore, 1949, U. S. Geol. Survey Oil and Gas Inv. Prelim. Map 80, sheets 1, 2.

Gove chalk

Cretaceous (Mid-Cretacic) : Kansas.

[C. R.] Keyes, 1941, Pan-Am. Geologist, v. 76, no. 4, p. 304 (chart).

Gove member (of Berwick formation)

Paleozoic (probably Ordovician and Silurian) : New Hampshire.

Jacob Freedman, 1950, Geol Soc. America Bull., v. 61, no. 5, p. 460, 464.

Governor diorite

Miocene, upper : Colorado.

McClelland Dings, 1941, Geol. Soc. America Bull., v. 52, no. 5, p. 701–707.

Gracias formation

Pliocene, lower : Honduras.

E. C. Olson and P. O. McGrew, 1938, (abs.) Geol. Soc. America Bull., v. 49, no. 12, pt. 2, p. 1895.

Graciosa coarse-grained member (of Careaga sandstone)
Pliocene, upper: California.
W. P. Woodring, M. N. Bramlette, and K. E. Lohman, 1943, Am. Assoc. Petroleum Geologists Bull., v. 27, no. 10, p. 1356–1358.

Graham Ferry formation
Pliocene and Pleistocene: Mississippi.
G. F. Brown and others, 1944, Miss. State Geol. Survey Bull. 60, p. 45–54.

Grahamville formation
Cambro-Ordovician: Vermont.
W. F. Brace, 1953, Vt. Geol. Survey Bull. 6, p. 47–48, tables 2, 3.

Graminia member (of Winterburn formation)
Devonian: Alberta, Canada (subsurface).
D. B. Layer, chm., 1950, Am. Assoc. Petroleum Geologists Bull., v. 34, no. 9, p. 1815.

Grampian Hills member (of Nanafalia formation)
Eocene (Wilcox): Alabama.
B. W. Blanpied and R. T. Hazzard, 1939, Shreveport Geol. Soc. Guidebook 14th Ann. Field Trip, p. 126, 128 (correlation chart).

Granada conglomerate
Precambrian (Timiskaming): Quebec, Canada.
M. E. Wilson, 1943, Royal Soc. Canada Trans., ser. 3, v. 37, sec. 4, p. 126, 127.

Granada greywacke
Precambrian (Timiskaming): Quebec, Canada.
M. E. Wilson, 1943, Royal Soc. Canada Trans., ser. 3, v. 37, sec. 4, p. 126, 127.

Grand Bay beds
Miocene, lower: The Grenadines (Carriacou), British West Indies.
C. T. Trechmann, 1935, Geol. Mag., v. 72, no. 12, p. 541, 553.
Alfred Senn, 1940, Am. Assoc. Petroleum Geologists Bull., v. 24, no. 9, p. 1581, 1597.

Grand Bayou member (of Hall Summit formation)
Paleocene (Midway): Louisiana.
D. P. Meagher and L. C. Aycock, 1942, La. Dept. Conserv. Geol. Pamph. 3, p. 12–16.
G. E. Murray, Jr., and E. P. Thomas, 1945, Am. Assoc. Petroleum Geologists Bull., v. 29, no. 1, p. 59.

Grand Beach rhyolite-porphyry
Devonian(?): Newfoundland, Canada.
R. E. Van Alstine, 1948, Newfoundland Geol. Survey Bull. 23, p. 21.

Grand Detour formation
Middle Ordovician: Illinois.
J. S. Templeton and H. B. Willman, 1952, Tri-State Geol. Soc. Guidebook 16th Ann. Field Conf., p. 6, fig. 3.

Grande Anse formation
Pennsylvanian: New Brunswick, Canada.
G. W. H. Norman, 1941, Canada Geol. Survey Map 647A.

Grande River–Portage River formation
Silurian and Devonian: Quebec, Canada.
H. W. McGerrigle, 1950, Quebec Dept. Mines Geol. Rept. 35, p. 24.

Grande Riviere formation

Lower Cretaceous: Trinidad, British West Indies.

A. G. Hutchison, 1938, Bol. Geología y Minería (Venezuela), v. 2, nos. 2–4 (English ed.), p. 235 (table).

H. G. Kugler, 1953, Vereinigung Schweizer Petroleum Geologen u. Ingenieure Bull., v. 20, no. 59, p. 32.

Grande Riviere Road limestone

Cretaceous (Aptian or Albian): Trinidad, British West Indies.

A. G. Hutchison, 1938, Bol. Geología y Minería (Venezuela), v. 2, nos. 2–4 (English ed.), p. 232, 235 (table).

Grande Terre limestone

Miocene: Gaudeloupe (Grande Terre), French West Indies.

Alfred Senn, 1940, Am. Assoc. Petroleum Geologists Bull., v. 24, no. 9, p. 1581.

Grand Falls drift

Quaternary: New Brunswick and Quebec, Canada.

H. A. Lee, 1955, Canada Geol. Survey Paper 55–15, p. 6.

Grandge slate

Lower Ordovician: Vermont.

Charles Schuchert, 1937, Geol. Soc. America Bull., v. 48, no. 7, p. 1072–1074, 1075.

Grand Lake Brook series

Cambrian: Newfoundland, Canada.

T. N. Walthier, 1949, Newfoundland Geol. Survey Bull. 35, pt. 1, p. 18–20.

Grand Ledge cyclothem (in Saginaw formation)

Pennsylvanian: Michigan.

Michigan Geol. Soc., 1954, *in* Geologic cross section of Paleozoic rocks central Mississippi to northern Michigan: Am. Assoc. Petroleum Geologists, p. 28.

Grand River formation

Pennsylvanian: Michigan.

W. A. Kelly, 1936, Mich. Dept. Conserv. Geol. Div. Pub. 40, Geol. Ser. 34, p. [206]–214.

Grand River limestone

Mississippian (Chesterian): Oklahoma.

J. M. Weller and others, 1948, Geol. Soc. America Bull., v. 59, no. 2, p. 146, Chart 5.

Grand Savanna gravel series

Pleistocene: Dominica, British West Indies.

J. W. W. Spencer, 1902, Geol. Soc. London Quart. Jour., v. 58, pt. 3, p. 349.

Grandview limestone

Pennsylvanian (Pottsville): Indiana.

D. W. Franklin, 1944, Ill. State Acad. Sci. Trans., v. 37, nos. 3–4, p. 86, 89.

Granite Falls limestone

Pennsylvanian and/or Permian: Washington.

R. A. Anderson, 1941, Wash. State Coll. Research Studies, v. 9, no. 3, p. 189, 201.

Graniteville granite

Precambrian: Missouri.

H. B. Graves, 1938, Acad. Sci. St. Louis Trans., v. 29, no. 5, p. 119.

Grantmire member (of Windsor series)

Mississippian: Nova Scotia, Canada.

W. A. Bell and E. A. Goranson, 1938, Canada Geol. Survey Map 359A.

Grantsville formation
Middle Triassic: Nevada.
S. W. Muller and H. G. Ferguson, 1939, Geol. Soc. America Bull., v. 50, no. 10, p. 1592–1594.

Granville formation
Lower Cambrian: Vermont.
P. H. Osberg, 1952, Vt. Geol. Survey Bull. 5, p. 49–55, 116.

Grasselli dolomite (in Kingsport formation)
Lower Ordovician (Canadian): Tennessee.
C. R. L. Oder and H. W. Miller, 1945, Am. Inst. Mining and Metall. Engineers (Mining Technology, v. 9, no. 3) Tech. Pub. 1818, p. 4, 6 (table 2).

Grass Valley formation
Upper Triassic: Nevada.
S. W. Muller, H. G. Ferguson, and R. J. Roberts, 1951, Geology of the Mount Tobin quadrangle, Nevada: U. S. Geol. Survey Geol. Quadrangle Map [GQ 7].

Grassy member (of Blackhawk formation)
Upper Cretaceous: Utah.
R. G. Young, 1955, Geol. Soc. America Bull., v. 66, no. 2, p. 186.

Gratiot flow (in Portage Lake lava series)
Precambrian (middle Keweenawan series): Michigan.
J. C. Wright and H. R. Cornwall, 1954, Bedrock geology of the Bruneau Creek quadrangle, Michigan: U. S. Geol. Survey Geol. Quadrangle Map [GQ 35].

Gratton limestone
Middle Ordovician: Virginia.
B. N. Cooper and C. E. Prouty, 1943, Geol. Soc. America Bull., v. 54, no. 6, p. 872–873.

Gravelbourg formation
Jurassic: Saskatchewan, Canada (subsurface).
J. R. Ower, 1953, Canadian Inst. Mining and Metallurgy Trans., v. 56, p. 397–398.
R. L. Milner and G. E. Thomas, 1954, Western Canada sedimentary basin: Tulsa, Okla., Am. Assoc. Petroleum Geologists, p. 257–260.

Grayburg formation (in Whitehorse group)
Permian: Subsurface in New Mexico and Texas.
R. K. DeFord *in* Addison Young, Max David, and E. A. Wahlstrom, 1939, Am. Assoc. Petroleum Geologists Bull., v. 23, no. 10, p. 1551.
R. I. Dickey, 1940, Am. Assoc. Petroleum Geologists Bull., v. 24, no. 1, p. 44–47.

Gray Gulch formation
Tertiary: Utah.
E. M. Spieker, 1949, Utah Geol. Soc. Guidebook 4, p. 37, 38, geol. map.

Grayling formation
Lower Triassic: British Columbia and Yukon, Canada.
E. D. Kindle, 1944, Canada Geol. Survey Paper 44–16. p. 6–10.

Gray Mesa member (of Madera limestone)
Pennsylvanian: New Mexico.
V. C. Kelley and G. H. Wood, 1946, U. S. Geol. Survey Oil and Gas Inv. Prelim. Map 47.

Grazier member (of Hatter formation)
Middle Ordovician (Chazyan): Pennsylvania.
G. M. Kay, 1943, Econ. Geology, v. 38, no. 3, p. 193.

Greasy Creek facies (of Fort Payne formation)
Lower Mississippian: Kentucky and Tennessee.
H. J. Klepser, 1937, Ohio State Univ. Abs. Doctors' Dissert. 24, p. 182.
P. B. Stockdale, 1939, Geol. Soc. America Special Paper 22, p. 53.

Great Falls lake sands
Pleistocene: Montana.
J. B. Lyons, 1944, Geol. Soc. America Bull., v. 55, no. 4, p. 449 (fig. 2), 452.

Great Harbour Deep granite
Precambrian: Newfoundland, Canada.
F. C. Foley, 1937, Newfoundland Geol. Survey Bull. 10, p. 11.

Great Sitkin volcanics
Tertiary and Quaternary: Alaska (Aleutian Islands).
F. S. Simons and D. E. Mathewson, 1947, U. S. Geol. Survey Alaskan Volcano Inv. Rept. 2, pt. 4, p. 63.

Gredal formation
Eocene, upper: California.
Martin Van Couvering and H. B. Allen, 1943, Calif. Dept. Nat. Res., Div. Mines Bull. 118, pt. 3, p. 496–500.

Greely Fjord group
Permian: Northwest Territories (Ellesmere Island), Canada.
J. C. Troelsen, 1950, Meddel. om Grønland, bind 149, nr. 7, p. 67–73.

Green Canyon group
Pennsylvanian (Derry): New Mexico.
M. L. Thompson, 1942, N. Mex. State Bur. Mines Min. Res. Bull. 17, p. 27, 32–33, 35–36.

Green Head formation
Precambrian: New Brunswick, Canada.
A. O. Hayes and B. F. Howell, 1937, Geol. Soc. America Special Paper 5, p. 23–25.

Greenhorn Mountain quartzite
Precambrian (Belt): Montana.
Adolph Knopf, 1950, Am. Mineralogist, v. 35, nos. 9–10, p. 839.

Greenland sandstone member (of Atoka formation)
Pennsylvanian: Arkansas.
L. G. Henbest, 1953, Am. Assoc. Petroleum Geologists Bull., v. 37, no. 8, p. 1946–1947.

Greenlandian
Late Precambrian: Greenland.
Lauge Koch, 1933, Meddel. om Grønland, v. 73, afd. 1, nr. 2, p. 36; *in* Erich Krenkel, editor, 1935, Geologie von Grönland, Geologie der Erde, p. 3–24.

Green Mountain conglomerate
Tertiary (post-Eocene, pre-Miocene): Colorado.
L. W. LeRoy, 1946, Colo. School Mines Quart., v. 41, no. 2, p. 111–113.

Greenock formation
Carboniferous: Alberta, Canada.
R. A. C. Brown, 1952, Canada Geol. Survey Mem. 264, p. 22–25.

Greenup cyclothem (including Greenup limestone)
Pennsylvanian: Illinois.
W. A. Newton and J. M. Weller, 1937, Ill. State Geol. Survey Rept. Inv. 45, p. 26–27.

Green Valley formation

Pliocene, lower: California.

Carlton Condit, 1938, Carnegie Inst. Washington Pub. 476, p. 248.
B. L. Clark, 1940, (abs.) Geol. Soc. America Bull., v. 51, no. 12, pt. 2, p. 1957.

Green Valley tonalite

Upper Cretaceous: California.

F. S. Miller, 1937, Geol. Soc. America Bull., v. 48, no. 10, p. 1408–1409.
E. S. Larsen and George Switzer, 1939, Am. Jour. Sci., v. 237, no. 8, p. 562–563.

Green Valley volcanic series

Tertiary: Texas.

S. S. Goldich and M. A. Elms, 1946, (abs.) Geol. Soc. American Bull., v. 57, no. 12, pt. 2, p. 1197.

Gregory member (of Pierre shale)

Upper Cretaceous: South Dakota.

W. V. Searight, 1937, S. Dak. State Geol. Survey Rept. Inv. 27, p. 10–20, pl. 3.

Gregory series

Precambrian: Northeast Greenland.

N. E. Odell, 1939, Meddel. om Grønland, bind 119, nr. 6, p. 15–20, 31, pl. 2.

Gregwa formation

Middle Cambrian: Nova Scotia, Canada.

R. D. Hutchinson, 1952, Canada Geol. Survey Mem. 263, p. 18–20.

Grejsdalen granite

Lower Paleozoic (Caledonian?): Northeast Greenland.

Erdhart Frankl, 1953, Meddel. om Grønland, bind 113, nr. 4, p. 98, 139–141, 157.

Griffith beds

Cretaceous(?): California.

G. J. Neuerburg, 1953, Calif. Dept. Nat. Res., Div. Mines Special Rept. 33, p. 7 (table 1), 18–19, pl. 1.

Griffon Cove River beds

Devonian: Quebec, Canada.

E. M. Kindle, 1938, Bull. Am. Paleontology, v. 24, no. 82, p. 51–52 (17–18).

Grimes Canyon sand and gravel member (of Santa Barbara formation)

Pleistocene, lower: California.

T. L. Bailey, 1954, *in* Pacific Petroleum Geologist, v. 8, no. 9, p. 1.
R. G. Thomas and others, 1954, Calif. Dept. Nat. Res., Div. Mines Bull. 170, chap. 6, p. 20, pl. 2.

Grindstone group

Jurassic (Knoxville): California.

F. M. Anderson, 1943, Calif. Dept. Nat. Res., Div. Mines Bull. 118, pt. 2, p. 184 [preprint, 1941].

Grindstone Point unit (in Winnipeg formation)

Ordovician: Saskatchewan, Canada.

W. O. Kupsch, 1953, Saskatchewan Dept. Nat. Res. Rept. 10, p. 11.

Grizzly formation

Precambrian: South Dakota.

T. A. Dodge, 1942, Geol. Soc. America Bull., v. 53, no. 4, p. 563.
J. A. Noble and J. O. Harder, 1948, Geol. Soc. America Bull., v. 59, no. 9, p. 944, 952, pl. 1.

Groos Quarry member (of Trenton formation)
Middle Ordovician: Michigan.
R. C. Hussey, 1952, Mich. Dept. Conserv. Geol. Survey Div. Pub. 46, Geol. Ser. 39, p. 13–14.

Grosmont member (of Woodbend formation)
Upper Devonian: Alberta, Canada (subsurface).
H. R. Belyea, 1952, Canada Geol. Survey Paper 52–27, p. 21.

Grove Creek formation
Upper Cambrian: Montana.
Erling Dorf and Christina Lochman, 1938, (abs.) Geol. Soc. America Proc. 1937, p. 275–276.

Grover gravel
Miocene(?): Missouri and Illinois.
Leland Horberg, 1950, Ill. Acad. Sci. Trans., v. 43, p. 173.
W. W. Rubey, 1952, U. S. Geol. Survey Prof. Paper 218, p. 61–74.

Grumbler formation
Upper Devonian: Northwest Territories (Mackenzie), Canada.
C. H. Crickmay, 1953, New Spiriferidae from the Devonian of western Canada: Calgary, Canada, Imperial Oil Limited, p. 1, 11.

Grundy Knob limestone
Pennsylvanian: Kentucky.
J. A. Culberston, 1932, The paleontology and stratigraphy of the Pennsylvanian strata between Caseyville, Ky., and Vincennes, Ind.; Abs. Thesis, Ill. Univ.: Urbana, Ill., p. 3, 8.
H. R. Wanless, 1939, Geol. Soc. America Special Paper 17, p. 85.

Grupera formation
Permian (Wolfcamp): Chiapas, Mexico.
M. L. Thompson and A. K. Miller, 1944, Jour. Paleontology, v. 18, no. 6, p. 484.

Guacamaya beds
Permian: Tamaulipas, Mexico.
Manuel Maldonado-Koerdell, 1954, Associación Mexicana Geólogos Petroleros Bol., v. 6, nos. 3–4, p. 119.

Guacamayas dacitic tuffs and flows
Pliocene(?): Honduras.
R. H. Carpenter, 1954, Geol. Soc. America Bull., v. 65, no. 1, p. 29, fig. 2.

Guadalcazar limestone
Upper Cretaceous (Gulf series): San Luis Potosí, Mexico.
J. P. Larios, 1948, Soc. Mexicana Geografía y Estadistica Bol., tomo 65, nos. 2–3, p. 291.

Guajalote formation
Miocene, lower: Tamaulipas and Nuevo Leon, Mexico.
Julia Gardner, 1945, Geol. Soc. America Mem. 11, p. 19–21.

Guajataca member (of Cibao marl)
Oligocene: Puerto Rico.
A. D. Zapp, H. R. Bergquist, and C. R. Thomas, 1948, U. S. Geol. Survey Oil and Gas Inv. Prelim. Map 85, sheets 1, 2.

Guanajibo formation

Miocene, upper, or Pliocene, lower: Puerto Rico (subsurface).

C. L. McGuinness, 1948, Ground-water resources of Puerto Rico: [San Juan?] Puerto Rico Aqueduct and Sewer Service, p. 226–227.

Guato formation

Eocene to Oligocene: Cuba.

J. F. de Albear, 1941, Soc. Cubana Ingenieros Rev., v. 36, chart facing p. 564.
Jorge Brodermann, 1945, Soc. Cubana Ingenieros Rev., v. 42, no. 1, p. 127–128, chart facing p. 144.

Guaxaro andesite

Age not stated: Panama.

Karl Sapper, 1937, Mittelamerika, Handbuch der regionalen Geologie: Heidelberg, Band 8, Abt. 4a, Heft 29, p. 134.

Guayaguayare beds

Upper Cretaceous: Trinidad, British West Indies (subsurface).

Hans Bolli, 1952, Jour. Paleontology, v. 26, no. 4, p. 671.

Guayal limestone

Cretaceous (Aptian-Albian): Tabasco, Mexico.

G. P. Salas, 1949, Soc. Geol. Mexicana Bol., tomo 14, p. 54.

Guffey volcanics

Oligocene: Colorado.

J. E. Bever, 1954, Dissert. Abs., v. 14, no. 7, p. 1088.

Guide Hill group

Upper Carboniferous or Lower Permian: Northwest Territories (Ellesmere Island), Canada.

R. G. Blackadar, 1954, Canada Geol. Survey Paper 53–10, p. 14–15.

Guilarte limestone

Upper Cretaceous: Puerto Rico.

R. C. Mitchell, 1954, Puerto Rico Univ. Agr. Expt. Sta. Tech. Paper 13, p. 47, 48.

Guilford granite

Age unknown (post-Glenarm series): Maryland.

Ernst Cloos and C. H. Broedel, 1940, Geologic map of Howard County and adjacent parts of Montgomery and Baltimore Counties (1 : 62,500): Md. Geol. Survey.

Guinda formation

Upper Cretaceous (Chico): California.

J. M. Kirby, 1942, (abs.) Am. Assoc. Petroleum Geologists Bull., v. 26, no. 5, p. 899; 1943, v. 27, no. 3, p. 283–284.

Gulf Hammock limestone

Eocene (Claiborne or Jackson): Florida.

D. B. Ericson, 1945, Science, v. 102, no. 2644, p. 234.

Gull Island formation

Middle Ordovician (?): Newfoundland, Canada.

G. H. Espenshade, 1937, Newfoundland Geol. Survey Bull. 6, p. 9.

Gull Lake anorthosite

Precambrian: Quebec, Canada.

B. C. Freeman, 1939, Jour. Geology, v. 47, p. 28.

Gull River formation
Middle Ordovician (Black River): Ontario, Canada.
V. J. Okulitch, 1939, Royal Canadian Inst. Trans., v. 22, pt. 2, p. 325–329.

Gullwing Lake conglomerate
Precambrian: Ontario, Canada.
W. D. Harding, 1951, Ontario Dept. Mines Ann. Rept., v. 59, pt. 4, p. 15–16.

Gullwing Lake volcanics
Precambrian: Ontario, Canada.
W. D. Harding, 1951, Ontario Dept. Mines Ann. Rept., v. 59, pt. 4, p. 18.

Gum Sulphur siltstone member (of New Providence formation)
Lower Mississippian: Kentucky.
P. B. Stockdale, 1939, Geol. Soc. America Special Paper 22, p. 118–119.

Gunn member (of Mt. Simon formation)
Upper Cambrian: Illinois (subsurface).
J. S. Templeton, Jr., 1950, Ill. Acad. Sci. Trans., v. 43, p. 155.

Gun River formation
Silurian: Quebec, Canada.
W. H. Twenhofel, 1928, Canada Geol. Survey Mem. 154, p. 16.

Gunther dolomite
Precambrian (Chuaran): Arizona.
Charles Keyes, 1938, Pan-Am. Geologist, v. 70, no. 2, p. 107, 112.

Gunton member (of Stony Mountain formation)
Upper Ordovician (Richmond): Manitoba, Canada.
V. J. Okulitch, 1943, Royal Soc. Canada Trans., sec. 4, v. 37, p. 60.

Guymard quartzite
Lower to Middle Silurian: New York.
C. F. Kilfoyle, 1954, N. Y. State Mus. Bull. 348, p. 499–500, 650.

Gypsum Spring formation
Middle Jurassic: Wyoming, South Dakota, and Montana.
J. D. Love, 1939, Geol. Soc. Ameriea Special Paper 20, p. 45–46.

Gypsy quartzite
Cambrian: Washington.
C. F. Park, Jr., 1938, Econ. Geology, v. 33, no. 7, p. 713, 714 (fig. 2).
C. F. Park, Jr., and R. S. Cannon, Jr., 1943, U. S. Geol. Survey Prof. Paper 202, p. 6, 13–15, pl. 1.

Hagan shale member (of Clinch sandstone)
Lower Silurian: Virginia.
R. L. Miller and J. O. Fuller, 1947, U. S. Geol. Survey Oil and Gas Inv. Prelim. Map 76.

Hagar group
Lower Paleozoic (Caledonian): Northeast Greenland.
C. E. Wegmann, 1935, Meddel. om Grønland, bind 103, nr. 3, p. 32, pl. 1.

Hager limestone or formation
Middle Ordovician: Missouri.
E. R. Larson, 1951, Am. Assoc. Petroleum Geologists Bull., v. 35, no. 9, p. 2053–2058.

Haggard limestone (in Cumberland sandstone)

Upper Ordovician: Kentucky.

W. R. Jillson, 1953, The Haggard limestone: Frankfort, Ky., Roberts Printing Co., p. 9–12.

Hagman formation

Eocene, upper: Mariana Islands (Saipan).

Risaburo Tayama, 1938, Geomorphology, geology, and coral reefs of Saipan Island: Tropical Industry Inst., Palau, South Sea Islands, Bull. 1 [English translation in library of U. S. Geol. Survey, p. 50–51].

Josiah Bridge *in* W. S. Cole and Josiah Bridge, 1953, U. S. Geol. Survey Prof. Paper 253, p. 7.

Halberstadt limestone

Eocene, lower: Jamaica, British West Indies.

J. G. Sawkins, 1869, Reports on the geology of Jamaica: [Great Britain] Geol. Survey Mem., p. 91, 93.

C. A. Matley, 1951, Geology and physiography of the Kingston district, Jamaica: Inst. of Jamaica, p. 32, geol. map.

Halberstadt volcanic group

Eocene, lower: Jamaica, British West Indies.

C. A. Matley, 1940, Geol. Soc. London Abs. Proc. 1373, p. 100; 1951, Geology and physiography of the Kingston district, Jamaica: Inst. of Jamaica, p. 32, geol. map.

Halcyon Lake calc-dolomite

Lower Ordovician: New York.

E. B. Knopf, 1946, (abs.) Geol. Soc. America Bull., v. 57, no. 12, pt. 2, p. 1212.

Haldeman siltstone member (of Brodhead formation)

Lower Mississippian: Kentucky.

P. B. Stockdale, 1939, Geol. Soc. America Special Paper 22, p. 180, 182–187.

Hall cyclothem (including Hall limestone)

Pennsylvanian: Illinois.

R. C. Moore and others, 1944, Geol. Soc. America Bull., v. 55, no. 6, Chart 6, column 29.

C. L. Cooper, 1946, Ill. State Geol. Survey Bull. 70, p. 12, 16.

Halle Mountains formation

Upper Carboniferous (Namurian): Northeast Greenland.

Lauge Koch *in* Erich Krenkel, editor, 1935, Geologie von Grönland, Geologie der Erde, p. 56, 62–66.

Hallian stage

Pliocene: California.

Manley Natland, 1953, Pacific Petroleum Geologist, v. 7, no. 2, p. 2.

Hall Lake member (of McRae formation)

Upper Cretaceous and Tertiary, lower: New Mexico.

H. P. Bushnell, 1955, Compass, v. 33, no. 1, p. 14–16.

Hallnor conglomerate

Precambrian: Ontario, Canada.

Peter Price and R. C. E. Bray, 1948, *in* Structural geology of Canadian ore deposits: Canadian Inst. Mining and Metallurgy, p. 559.

Halloran complex

Precambrian: California.

W. J. Miller, 1946, Geol. Soc. America Bull., v. 57, no. 5, p. 499.

Halloran Spring complex

See Halloran complex.

Hallowell member (of Cobourg formation)
Middle Ordovician (Mohawkian): Ontario, Canada; and New York.
G. M. Kay, 1937, Geol. Soc. America Bull., v. 48, no. 2, p. 278–280.

Halls diorite porphyry
Miocene, middle or upper: Oregon.
T. P. Thayer, 1939, Oreg. Dept. Geology and Mineral Industries Bull. 15, p. 10.

Halls Town formation
Precambrian (Upper Proterozoic): Newfoundland, Canada.
R. D. Hutchinson, 1954, Canada Geol. Survey Mem. 275, p. 14–16.

Hall Summit formation
Paleocene (Midway): Louisiana.
G. [E.] Murray, Jr., 1941, (abs.) Am. Assoc. Petroleum Geologists Bull., v. 25, no. 5, p. 941–942.
G. E. Murray, Jr., and E. P. Thomas, 1945, Am. Assoc. Petroleum Geologists Bull., v. 29, no. 1, p. 58–60.

Ham granite
Precambrian: Manitoba, Canada.
J. M. Harrison, 1949, Canada Geol. Survey Mem. 250, p. 19.

Hamakua volcanic series
Tertiary, upper, to Quaternary: Hawaiian Islands (Hawaii).
G. A. Macdonald, 1945, Am. Jour. Sci., v. 243, no. 4, p. 211–214.

Hamilton series
Precambrian: Newfoundland (Labrador) and Quebec, Canada.
J. K. Gustafson and A. E. Moss, 1953, Mining Eng., v. 5, no. 6, p. 595 (table 1).

Hammond River formation
Lower or Upper Carboniferous: New Brunswick, Canada.
A. O. Hayes and B. F. Howell, 1937, Geol. Soc. America Special Paper 5, p. 111–113.

Hana volcanic series
Pleistocene and Recent: Hawaiian Islands (Maui).
H. T. Stearns *in* H. T. Stearns and G. A. Macdonald, 1942, Hawaii Div. Hydrography Bull. 7, p. 90–102.

Hanawi basaltic andesite
Pleistocene(?): Hawaiian Islands (Maui).
G. A. Macdonald *in* H. T. Stearns and G. A. Macdonald, 1942, Hawaii Div. Hydrography Bull. 7, p. 230, 253–254.

Hancock member (of Pinney Hollow formation)
Lower Cambrian: Vermont.
P. H. Osberg, 1952, Vt. Geol. Survey Bull. 5, p. 55, 61.

Haney limestone
Mississippian (Chester): Kentucky.
A. C. McFarlan and others, 1955, Ky. Geol. Survey, ser. 9, Bull. 16, p. 18.

Hanford Brook formation
Lower Cambrian (Hanfordian): New Brunswick, Canada.
A. O. Hayes and B. F. Howell, 1937, Geol. Soc. America Special Paper 5, p. 66–69.

Hanley sandstone (in Cattaraugus formation)
Devonian: Pennsylvania.
C. R. Fettke, 1938, Pa. Geol. Survey, ser. 4, Bull. M 21, p. 37–38.

Hannah formation
Miocene, lower: California.
Martin Van Couvering and H. B. Allen, 1943, Calif. Dept. Nat. Res., Div. Mines Bull. 118, pt. 3, p. 496–500.

Hannan limestone
Mississippian: Montana.
Charles Deiss, 1941, Geol. Soc. America Bull., v. 52, no. 12, pt. 2, p. 1896; 1943, v. 54, no. 2, p. 228–230.

Hanover granodiorite porphyry
Cretaceous or younger: New Mexico.
P. F. Kerr and others, 1950, Geol. Soc. America Bull., v. 61, no. 4, p. 287–288.

Hanover limestone (in Carbondale formation)
Pennsylvanian: Illinois.
H. R. Wanless, 1939, Geol. Soc. America Special Paper 17, p. 22.

Hanover pebble bed (in Cuyahoga formation)
Mississippian: Ohio.
J. E. Hyde, 1953, Ohio Div. Geol. Survey Bull. 51, p. 98.

Hansonburg group
Pennsylvanian (Missouri series): New Mexico.
M. L. Thompson, 1942, N. Mex. State Bur. Mines Min. Res. Bull. 17, p. 27, 63–65.

Hanson Creek formation
Upper Ordovician: Nevada.
C. W. Merriam, 1940, Geol. Soc. America Special Paper 25, p. 10–11.

Harbour Main volcanics
Precambrian: Newfoundland, Canada.
B. F. Howell, 1925, Bull. Am. Paleontology, v. 11, no. 43, p. 20.

Hardrock "porphyry"
Precambrian: Ontario, Canada.
J. A. Reid, 1945, Econ. Geology, v. 40, no. 8, p. 509–511.

Hardscrabble limestone
Mississippian: Colorado.
J. C. Maher, 1950, U. S. Geol. Survey Oil and Gas Inv. Prelim. Chart 39.

Hardwood Point shales and flags
Mississippian (Kinderhook): Michigan.
H. M. Martin, 1936, The centennial geological map of the southern peninsula of Michigan (1:500,000): Mich. Geol. Survey Div. Pub. 39 (Geol. Ser. 33).

Hardwood Ridge flow
Pennsylvanian or older: New Brunswick, Canada.
J. E. Muller, 1951, Canada Geol. Survey Mem. 260, p. 12, 13.

Hardy Creek limestone (of Moccasin limestone)
Middle Ordovician: Virginia.
R. L. Miller and J. C. Fuller, 1947, U. S. Geol. Survey Oil and Gas Inv. Prelim. Map 76.

Hardy Hill quartzite member (of Orfordville formation)
Middle Ordovician(?): New Hampshire and Vermont.
C. A. Chapman and others, 1938, Geologic map and structure sections of the Mascoma quadrangle, New Hampshire (1:62,500): N. H. Highway Dept.
C. A. Chapman, 1939, Geol. Soc. America Bull., v. 50, no. 1, p. 132–133.

Hare Island limestone
Middle Ordovician (Chazy): Newfoundland, Canada.
J. R. Cooper, 1937, Newfoundland Geol. Survey Bull. 9, p. 7.

Harg shale facies (of Portwood formation)
Middle Devonian: Kentucky.
Guy Campbell, 1946, Geol. Soc. America Bull., v. 57, no. 9, p. 862–864, 866.

Harkers fanglomerate
Pliocene: Utah.
L. W. Slentz, 1955, Utah Geol. Soc. Guidebook 10, p. 24, 28–30.

Harlow Bridge quartzite member (of Cram Hill formation)
Middle Ordovician: Vermont.
L. W. Currier and R. H. Jahns, 1941, Geol. Soc. America Bull., v. 52, no. 9, p. 1493, 1495.

Harmon member (of Peace River formation)
Lower Cretaceous: Alberta, Canada.
P. C. Badgley, 1952, Canada Geol. Survey Paper 52–11, p. 8.

Harmony formation
Upper Cambrian(?): Nevada.
R. J. Roberts, 1951, Geology of the Antler Peak quadrangle, Nevada: U. S. Geol. Survey Geol. Quadrangle Map [GQ 10].

Harmony Hill formation
Middle Ordovician: Illinois.
J. S. Templeton and H. B. Willman, 1952, Tri-State Geol. Soc. Guidebook 16th Ann. Field Conf., p. 21, figs. 3, 12.

Harold formation
Pleistocene, upper: California.
L. F. Noble, 1953, Geology of the Pearland quadrangle, California: U. S. Geol. Survey Geol. Quadrangle Map [GQ 24].

Harp Lake anorthosite
Precambrian: Newfoundland (Labrador), Canada.
D. M. Baird, 1953, Newfoundland Geol. Survey Inf. Circ. 4 (revised), p. 137.

Harriett formation
Silurian: Ohio.
Wilbur Stout, 1941, Ohio Geol. Survey, ser. 4, Bull. 42, p. 90–91.

Harriman shale member (of Lykins formation)
Permian: Colorado.
L. W. LeRoy, 1946, Colo. School Mines Quart., v. 41, no. 2, p. 31–33.

Harrington soil
Pleistocene: Bermuda Islands.
R. W. Sayles, 1931, Am. Acad. Arts Sci. Proc., v. 66, no. 11, p. 394–395.

Harrisite dolomite
Middle Silurian: Utah.
F. W. Osterwald, 1953, U. S. Geol. Survey Trace Elements Inv. Rept. TEI–330, p. 105.

Harter member (of Frankfort formation)
Upper Ordovician (Cincinnatian): New York.
Marshall Kay, 1953, N. Y. State Mus. Bull. 347, p. 64, 66.

Hartford Hill rhyolite tuff

Oligocene(?): Nevada.

V. P. Gianella, 1934, Mining and Metallurgy, v. 15, no. 331, p. 299; 1936, Nev. Univ. Bull., v. 30, no. 9, p. 45–52.

Hartley shale and sandstone (in Chinle formation)

Upper Triassic: Utah.

P. D. Proctor, 1953, Utah Geol. Mineralog. Survey Bull. 44, p. 10–11, 19.

Hartline chert

Mississippian: Illinois.

J. M. Weller *in* J. M. Weller and G. E. Ekblaw, 1940, Ill. State Geol. Survey Rept. Inv. 70, p. 19–20.

Hartz Fjaeld formation

Lower Cretaceous (Neocomian): East Greenland.

Alfred Rosenkrantz *in* Lauge Koch, 1929, Meddel. om Grønland, bind 73, afd. 2, nr. 1, p. 149.

Harvey group

Pre-Carboniferous: Yukon, Canada.

R. B. Campbell, 1954, Canada Geol. Survey Paper (Prelim. Map) 54–12.

Hasenclever member (of Frankfort formation)

Upper Ordovician (Cincinnatian): New York.

Marshall Kay, 1953, N. Y. State Mus. Bull. 347, p. 64, 66.

Hasler formation

Lower Cretaceous: British Columbia, Canada.

R. T. D. Wickenden and George Shaw, 1943, Canada Geol. Survey Paper 43–13, p. 6–7.

Hassel formation

Lower Cretaceous or younger: Northwest Territories (Ellef Ringnes Island), Canada.

W. W. Heywood, 1955, Canadian Mining and Metall. Bull., v. 48, no. 514, p. 60, 61.

Hastings Cove formation

Middle Cambrian (Loch Lomond): New Brunswick, Canada.

A. O. Hayes and B. F. Howell, 1937, Geol. Soc. America Special Paper 5, p. 73–76.

†Hatbox tongue (of Chandler formation)

Lower Cretaceous: Alaska.

George Gryc, W. W. Patton, Jr., and T. G. Payne, 1951, Washington Acad. Sci. Jour. v. 41, no. 5, p. 164.

Hat Creek basalt

Recent: California.

C. A. Anderson, 1940, Am. Jour. Sci. v. 238, no. 7, p. 477, 479 (fig. 2), 480–485.

Hatter limestone

Middle Ordovician (Chazyan?): Pennsylvania.

G. M. Kay, 1941, (abs.) Geol. Soc. America Bull., v. 52, no. 12, pt. 2, p. 1969.

Hatterian subseries

Middle Ordovician (Bolarian): Pennsylvania, Kentucky, West Virginia, Virginia, Maryland, and New York, and Ontario, Canada.

Marshall Kay, 1947, (abs.) Geol. Soc. America Bull., v. 58, no. 12, pt. 2, p. 1198; 1948, Am. Assoc. Petroleum Geologists Bull., v. 32, no. 8, p. 1406–1409.

Haupu formation

Pliocene(?): Hawaiian Islands (Kauai).

H. T. Stearns, 1946, Hawaii Div. Hydrography Bull. 8, p. 85, 87.

Havallah formation

Permian (Wolfcamp and Leonard? age): Nevada.

S. W. Muller, H. G. Ferguson, and R. J. Roberts, 1951, Geology of the Mount Tobin quadrangle, Nevada: U. S. Geol. Survey Geol. Quadrangle Map [GQ 7].

Havasu member (of Muav formation)

Middle Cambrian: Arizona.

E. D. McKee, 1945, Carnegie Inst. Washington Pub. 563, p. 14, 29, 109–110.

Haverhill granodiorite

Upper Devonian(?) (New Hampshire magma series): New Hampshire.

J. B. Hadley and others, 1938, Geologic map and structure sections of the New Hampshire portion of the Mt. Cube quadrangle (1:62,500): N. H. Highway Dept.
J. B. Hadley, 1942, Geol. Soc. America Bull., v. 53, no. 1, p. 148.

Hawi volcanic series

Pleistocene: Hawaiian Islands (Hawaii).

H. T. Stearns and G. A. Macdonald, 1946, Hawaii Div. Hydrography Bull. 9, p. 173, 178–180.

Hawkesbury series

Pennsylvanian: Nova Scotia, Canada.

G. W. H. Norman, 1935, Canada Geol. Survey Mem. 177, p. 45.

Hawkhill formation

Eocene, middle: California.

Ralph Stewart, 1949, U. S. Geol. Survey Oil and Gas Inv. Prelim. Chart 34, sheet 2.

Hawkins limestone member (of Chimneyhill formation)

Lower Silurian: Oklahoma.

R. A. Maxwell, 1936, Northwestern Univ. Summaries of Doctoral Dissert., v. 4, p. 132, 133.

Hawkins Creek member (of Modin formation)

Upper Triassic: California.

A. F. Sanborn, [1953], Stanford Univ. Abs. Dissert., v. 27, p. 436.

Hawks Bill formation

Cretaceous(?): Tobago, British West Indies.

J. C. Maxwell, 1948, Geol. Soc. America Bull., v. 59, no. 8, p. 828–830.

Hayden group

Pennsylvanian: Wyoming and Colorado.

G. E. Condra, E. C. Reed, and O. J. Scherer, 1940, Nebr. Geol. Survey Bull. 13, p. 2, 3, 22, 45.

Hayden Branch formation

Upper Pennsylvanian: Indiana and Illinois.

C. A. Malott *in* K. A. Payne, 1937, Jour. Paleontology, v. 11, no. 4, p. 276–279.

Hayes conglomerate

Miocene or younger: Jamaica, British West Indies.

C. A. Matley, 1929, Geol. Soc. London Quart. Jour., v. 85, pt. 4, p. 462.

Hay Flat limestone

Cretaceous (Albian): Arizona.

A. A. Stoyanow, 1937, (abs.) Geol. Soc. America Proc. 1936, p. 296, 297 (table).

Haymeadow Creek member (of Trenton formation)
Middle Ordovician: Michigan.

R. C. Hussey, 1952, Mich. Dept. Conserv. Geol. Survey Div. Pub. 46, Geol. Ser. 39, p. 13–14.

Haynesville formation
Upper Jurassic: Subsurface in Louisiana, Alabama, Arkansas, Mississippi, and Texas.

T. H. Philpott and R. T. Hazzard, 1949, *in* Shreveport Geol. Soc. Guidebook 17th Ann. Field Trip, fig. 5 (correlation chart).
L. A. Goebel, 1950, Am. Assoc. Petroleum Geologists Bull., v. 34, no. 10, p. 1978–1979.

Hay River series
Upper Devonian: Northwest Territories (Mackenzie), Canada.

A. E. Cameron, 1922, Canada Geol. Survey Summ. Rept. 1921, pt. B, p. 25–29.

Hazel Green member (of Quimbys Mill formation)
Middle Ordovician: Illinois.

J. S. Templeton and H. B. Willman, 1952, Tri-State Geol. Soc. Guidebook 16th Ann. Field Conf., figs. 3, 9.

Hazelwood member (of Mifflin formation)
Middle Ordovician: Illinois.

J. S. Templeton and H. B. Willman, 1952, Tri-State Geol. Soc. Guidebook 16th Ann. Field Conf., figs. 3, 10, 16.

Hazleton Bridge formation
Upper Pennsylvanian: Indiana.

C. A. Malott, 1939, (abs.) Ind. Acad. Sci. Proc., v. 48, p. 114.

Headland gneiss
Precambrian: Newfoundland, Canada.

J. O. Fuller, 1941, Newfoundland Geol. Survey Bull. 15, p. 10.

Healy glaciation
Pleistocene (Wisconsin): Alaska.

Clyde Wahrhaftig *in* T. L. Péwé and others, 1953, U. S. Geol. Survey Circ. 289, p. 8, 13 (table 1).

Heatherton limestone
Mississippian: Newfoundland, Canada.

W. A. Bell, 1948, Canada Geol. Survey Bull. 10, p. 31, 32.

Hedley diorite-gabbro
Pre-upper Lower Cretaceous: British Columbia, Canada.

H. M. A. Rice, 1947, Canada Geol. Survey Mem. 243, p. 34.

Hedley formation
Triassic: British Columbia, Canada.

H. S. Bostock and D. A. McNaughton, 1940, Canada Geol. Survey Map 568A.

Hegler limestone member (of Cherry Canyon formation)
Permian: Texas and New Mexico.

P. B. King *in* A. K. Miller and W. M. Furnish, 1940, Geol. Soc. America Special Paper 26, p. 9.
P. B. King, 1942, Am. Assoc. Petroleum Geologists Bull., v. 26, no. 4, p. 582, pl. 2.

Helenmode member (of Erwin formation)
Lower Cambrian: Tennessee and North Carolina.

P. B. King and others, 1944, Tenn. Div. Geology Bull. 52, p. 31–32, 56.

Hell Gate glacial substage
Pleistocene (Mankato) : Colorado.
R. L. Nelson, 1954, Jour. Geology, v. 62, no. 4, p. 333.

Hell Inlet glacial stage
Pleistocene: Colorado.
R. L. Ives, 1942, Geog. Review, v. 32, no. 3, p. 450.

Hell Roaring member (of Altyn formation)
Precambrian (Belt) : Alberta, Canada; and Montana.
C. L. Fenton and M. A. Fenton, 1937, Geol. Soc. America Bull., v. 48, no. 12, p. 1882–1883.

Hells Canyon formation
Pennsylvanian: Colorado and Utah.
M. L. Thompson, 1945, Kans. State Geol. Survey Bull. 60, pt. 2, p. 31–34.

Hells Mesa member (of Datil formation)
(?) Miocene, upper : New Mexico.
W. H. Tonking, 1954, Dissert. Abs., v. 14, no. 2, p. 340; [1954?], Geologic map and sections of the Puertecito quadrangle, New Mexico (1 : 48,000) : N. Mex. Bur. Mines Min. Res. [preprint?] Bull. 41, pl. 1.

Helmick formation
Eocene: Oregon.
J. A. Cushman, R. E. Stewart, and K. C. Stewart, 1947, Oreg. Dept. Geology and Mineral Industries Bull. 36, pt. 5, p. 95–96.

Helveker volcanics
Upper Cretaceous: British Columbia, Canada.
F. A. Kerr, 1948, Canada Geol. Survey Mem. 246, p. 36–37.

Hely member (of Grand Detour formation)
Middle Ordovician: Illinois.
J. S. Templeton and H. B. Willman, 1952, Tri-State Geol. Soc. Guidebook 16th Ann. Field Conf., fig. 3.

Hemingford group
Miocene: Nebraska and Wyoming.
A. L. Lugn, 1938, Am. Jour. Sci., 5th ser., v. 36, no. 213, p. 226, 227; 1939, Geol. Soc. America Bull., v. 50, no 8, p. 1253–1254.

Hemingfordian age
Miocene: North America.
H. E. Wood, 2d, and others, 1941, Geol. Soc. America Bull., v. 52, no. 1, p. 12, pl. 1.

Hemphillian age
Pliocene: North America.
H. E. Wood, 2d, and others, 1941, Geol. Soc. America Bull., v. 52, no. 1, p. 12, pl. 1.

Henefer formation
Upper Cretaceous: Utah.
A. J. Eardley, 1944, Geol. Soc. America Bull., v. 55, no. 7, p. 840–842.

Hennepin member (of Pecatonica formation)
Middle Ordovician: Illinois.
J. S. Templeton and H. B. Willman, 1952, Tri-State Geol. Soc. Guidebook 16th Ann. Field Conf., figs. 3, 12.

Hennessey Bayou member (of Bucatunna marl and clay)
Oligocene (Vicksburg) : Mississippi.
E. C. Tonti, 1955, Dissert, Abs., v. 15 no. 8, p. 1372.

Henry formation
Triassic: British Columbia, Canada.
H. S. Bostock and D. A. McNaughton, 1940 Canada Geol. Survey Map 568A.

Henryville formation
Lower Mississippian: Indiana.
Guy Campbell, 1946, Geol. Soc. America Bull., v. 57, no. 9, p. 851.

Hepler sandstone formation
Pennsylvanian (Missouri series): Kansas, Missouri, and Nebraska.
J. M. Jewett, 1940, Kans. State Geol. Survey Bull. 30, p. 8–9.

Hercules Tower sandstone (in Lutie member of Theodosia formation)
Lower Ordovician: Missouri and Arkansas.
J. S. Cullison, 1944, Mo. Univ. School Mines and Metallurgy Bull., Tech. Ser., v. 15, no. 2, p. 29.

Hermosa lens (in Newcastle formation)
Upper Cretaceous: South Dakota.
R. M. Grace, 1952, Wyo. Geol. Survey Bull. 44, p. 14, 17.

Heron Creek sandstone member (of Gething formation)
Lower Cretaceous: British Columbia, Canada.
F. H. McLearn and E. J. W. Irish, 1944, Canada Geol. Survey Paper 44–15, p. 8.

Herrera sandstone
Miocene, lower: Trinidad, British West Indies.
G. A. Waring, 1926, Johns Hopkins Univ. Studies in Geology, no. 7, p. 50.

Herrick gravels
Pleistocene: South Dakota.
R. E. Stevenson and L. A. Carlson, 1950, Areal geology of the Bonesteel quadrangle (1 : 62,500) : S. Dak. State Geol. Survey.

Herring Head conglomerate
Silurian: Newfoundland, Canada.
D. M. Baird, 1953, Newfoundland Geol. Survey Rept. 1, p. 11–16.

Hershey limestone
Ordovician (lower Trenton) : Pennsylvania.
Carlyle Gray, 1952, Pa. Geol. Survey Progress Rept. 140, p. 4–5.

Hibbs Hole formation
Precambrian (Middle Proterozoic): Newfoundland, Canada.
R. D. Hutchinson, 1954, Canada Geol. Survey Mem. 275, p. 11–12.

Hickory Ridge member (of Oneota formation)
Lower Ordovician: Wisconsin.
G. O. Raasch, 1952, Ill. Acad. Sci. Trans., v. 45, p. 87–88, 92–93.

Hicks cyclothem (including Hicks limestone)
Pennsylvanian: Illinois.
R. C. Moore and others, 1944, Geol. Soc. America Bull., v. 55, no. 6, Chart 6, column 29.
C. L. Cooper, 1946, Ill. State Geol. Survey Bull. 70, p. 12, 16.

Hidalgo volcanics
Lower Cretaceous (Bisbee group) : New Mexico.
S. G. Lasky, 1938, Am. Assoc. Petroleum Geologists Bull., v. 22, no. 5, p. 532, fig. 2.

Hidalgos formation
Eocene, middle: Dominican Republic.
P. J. Bermudez, 1949, Cushman Lab. Foram. Research Special Pub. 25, p. 11.

Hidden Valley dolomite
Silurian and Lower Devonian: California.
J. F. McAllister, 1952, Calif. Dept. Nat. Res., Div. Mines Special Rept. 25, p. 3, 15–18.

Hidden Valley formation
Middle Cambrian(?): Northeast Greenland.
A. B. Cleaves and E. F. Fox, 1935, Geol. Soc. America Bull., v. 46, no. 3, p. 475, pl. 43.

Hidden Valley group
Silurian and Devonian: British Columbia, Canada.
H. Gabrielse, 1955, Canada Geol. Survey Paper (Prelim. Map) 54–10.

Higginsville cyclothem (including Higginsville limestone)
Pennsylvanian (Des Moines): Missouri, Iowa, Kansas, and Nebraska.
L. M. Cline, 1941, Am. Assoc. Petroleum Geologists Bull., v. 25, no. 1, p. 36.
J. M. Jewett, 1945, Kans. State Geol. Survey Bull. 58, p. 25–26, 62–63.

High Bluff member (of Pendleton formation)
Eocene, lower (Wilcox): Louisiana and Texas.
Richard Wasem and L. J. Wilbert, Jr., 1943, Jour. Paleontology, v. 17, no. 2, p. 187, fig. 4.

High Cascade series
Pliocene to Recent: California.
Howel Williams, 1949, Calif. Dept. Nat. Res., Div. Mines Bull. 151, p. 35–38.

High Falls granite
Precambrian: Quebec, Canada.
M. E. Wilson, 1920, Canada Geol. Survey Pub. (Map) 1691.
Pierre Mauffette, 1949, Quebec Dept. Mines Prelim. Rept. 223, p. 12.

Highland shale member (of Wellington formation)
Permian: Kansas.
W. A. Ver Wiebe, 1937, Wichita Municipal Univ. Bull. v. 12, no. 5, p. 5–6.

Highlands formation
Precambrian: Newfoundland, Canada.
C. E. Fritts, 1953, Newfoundland Geol. Survey Rept. 4, p. 10–13.

Highlands sandstone
Mississippian: Newfoundland, Canada.
D. M. Baird, 1951, Canadian Inst. Mining and Metallurgy Trans., v. 54, p. 86, 90.

Highway limestone
Middle Pennsylvanian: Nevada.
H. G. Ferguson, R. J. Roberts, and S. W. Muller, 1952, Geology of the Golconda quadrange, Nevada: U. S. Geol. Survey Geol. Quadrangle Map [GQ 15].

Highwood sandstone (in Wapiabi formation)
Upper Cretaceous: Alberta, Canada.
J. B. Webb and L. G. Hertlein, 1934, Am. Assoc. Petroleum Geologists Bull., v. 18, no. 11, p. 1402.

Higuerito member (of Arroyo Blanco formation)
Miocene, lower: Dominican Republic.
P. J. Bermudez, 1949, Cushman Lab. Foram. Research Special Pub. 25, p. 29.

Hiirippo limestone
See Hirippo limestone.

Hilina volcanic series

Pleistocene(?): Hawaiian Islands (Hawaii).

H. T. Stearns and G. A. Macdonald, 1946, Hawaii Div. Hydrography Bull. 9, p. 100, 101, 102.

Hill Group

Precambrian (pre-Huronian): Ontario, Canada.

H. C. Cooke, 1946, Canada Geol. Survey Bull. 3, p. 18–19.

Hillier member (of Cobourg formation)

Middle Ordovician (Mohawkian): Ontario, Canada; and New York.

G. M. Kay, 1937, Geol. Soc. America Bull., v. 48, no. 2, p. 280–281.

Hillman gneissoid tonalite

Precambrian (Algoman): Minnesota.

M. S. Woyski, 1949, Geol. Soc. America Bull., v. 60, no. 6, p. 1002, 1011, pl. 1.

Hill Ridge biotite schist

Cambro-Ordovician(?): Maine.

L. W. Fisher, 1936, Am. Mineralogist, v. 21, no. 5, p. 323.

Hills Pond peridotite

Cretaceous(?): Kansas.

H. C. Wagner, 1954, U. S. Geol. Survey Geol. Quadrangle Map GQ 49.

Hilltop formation

Pennsylvanian: Oklahoma.

W. F. Tanner, 1953, Am. Assoc. Petroleum Geologists Bull., v. 37, no. 8, p. 2046–2050.

Hinchinbrooke granite

Precambrian: Ontario, Canada.

J. M. Harrison, 1944, Geol. Soc. America Bull., v. 55, no. 12, p. 1404–1405.

Hinkley Valley complex

Precambrian: California.

W. J. Miller, 1944, Calif. Jour. Mines and Geology, v. 40, no. 1, p. 77–79.

Hirippo limestone

Miocene [Aquitanian]: Mariana Islands (Rota).

Risaburo Tayama, 1939, Correlation of the strata of the South Sea Islands: Geol. Soc. Japan Jour., v. 46, no. 549, p. 346 (correlation table) [English translation in library of U. S. Geol. Survey]; 1952, Coral reefs in the South Seas: Japan Hydrog. Office Bull., v. 11, p. 54, table 4 [English translation in library of U. S. Geol. Survey, p. 65].

Hoadley formation

Precambrian (Belt series): Montana.

Charles Deiss, 1943, Geol. Soc. America Bull., v. 54, no. 2, p. 213, 216–217.

Hoback formation

Eocene, lower: Wyoming.

A. J. Eardley and others, 1944, Hoback-Gros Ventre-Teton Field Conference [geologic map]. Privately printed.

Leland Horberg, Vincent Nelson, and Victor Church, 1949, Geol. Soc. America Bull., v. 60, no. 1, p. 187, 190.

Hobble formation

Pennsylvanian: Utah.

H. J. Bissell, 1936, Iowa Acad. Sci. Proc., v. 43, p. 240, 241–242.

Hobsons clay

Upper Cretaceous: Trinidad, British West Indies.

P. W. Jarvis, 1929, Inst. Petroleum Technologists Jour., v. 15, no. 75, p. 440.

Hockingport sandstone

Upper Carboniferous: Ohio.

W. D. Martin, 1955, Dissert. Abs., v. 15, no. 8, p. 1371.

Hodge complex

Precambrian: California.

W. J. Miller, 1944, Calif. Jour. Mines and Geology, v. 40, no. 1, p. 79, 97–98.

Hodge volcanic series

Upper Paleozoic(?): California.

O. E. Bowen, Jr., *in* L. A. Wright and others, 1953, Calif. Jour. Mines and Geology, v. 49, nos. 1–2, pl. 2.

O. E. Bowen, Jr., 1954, Calif. Dept. Nat. Res., Div. Mines Bull. 165, p. 16 (fig. 2), 34–36.

Hodgewater group

Precambrian (Upper Proterozoic): Newfoundland, Canada.

R. D. Hutchinson, 1954, Canada Geol. Survey Mem. 275, p. 12.

Hoffmann flow

Recent: California.

H. A. Powers, 1932, Am. Mineralologist, v. 17, no. 7, p. 276–278, 288, pl. 1.

Hoffner member (of Ste. Genevieve limestone)

Mississippian (Iowa series): Illinois.

J. M. Weller *in* Stuart Weller and F. F. Krey, 1939, Ill. State Geol. Survey Rept. Inv. 60, p. 7.

Holcomb quartz monzonite

Cretaceous(?): California.

L. F. Noble, 1954, U. S. Geol. Survey Geol. Quadrangle Map GQ 50.

Holder formation

Pennsylvanian (Virgilian): New Mexico.

L. C. Pray, 1954, N. Mex. Geol. Soc. Guidebook 5th Field Conf., p. 93.

Holitna group

Middle or Upper Silurian: Alaska.

W. M. Cady and others, 1955, U. S. Geol. Survey Prof. Paper 268, p. 23–27.

Holland limestone

Pennsylvanian: Indiana.

H. R. Wanless, 1939, Geol. Soc. America Special Paper 17, p. 30, 87.

Hollis limestone member (of Deese formation)

[Pennsylvanian]: Oklahoma.

C. C. Branson, 1955, Hopper, v. 15, nos. 10–11, p. 129.

Hollis Reservoir formation

Upper Jurassic: Trinidad, British West Indies.

R. A. Liddle, 1946, The geology of Venezuela and Trinidad, 2d ed.: Ithaca, N. Y., Paleont. Research Inst., p. 701.

Hollycrest formation

Miocene, middle: California.

G. J. Neuerburg, 1953, Calif. Dept. Nat. Res., Div. Mines Special Rept. 33, p. 6 (table 1), 23–24, pl. 1.

Holmes gneiss
Precambrian (post-Keewatin): Quebec, Canada.
W. W. Longley, 1946, Quebec Dept. Mines Geol. Rept. 24, p. 11.

Holokuk basalt
Tertiary: Alaska.
W. M. Cady and others, 1955, U. S. Geol. Survey Prof. Paper 268, p. 53–55.

Holtsclaw Hill facies (of Brodhead formation)
Lower Mississippian: Kentucky.
P. B. Stockdale, 1939, Geol. Soc. America Special Paper 22, p. 139–145.

Holy Cross sandstone
Silurian: Kentucky.
W. R. Jillson, 1952, The Holy Cross sandstone: Frankfort, Ky., Roberts Printing Co., p. 5–14.

Hollyrood granite
Precambrian: Newfoundland (Labrador), Canada.
M. E. Wilson, 1939, Geologie der Erde, North America, v. 1, p. 282.

Holz shale member (of Ladd formation)
Upper Cretaceous: California.
W. P. Popenoe, 1937, Jour. Paleontology, v. 11, no. 5, p. 380.

Homberg group
Mississippian (Chester): Illinois and Missouri.
J. M. Weller, 1939, Kans. Geol. Soc. Guidebook 13th Ann. Field Conf., p. 131, 135.

Home glacial substage
Pleistocene (Wisconsin): Colorado, Wyoming, and New Mexico.
L. L. Ray, 1938, (abs.) Geol. Soc. America Proc. 1937, p. 314; 1940, Geol. Soc. America Bull., v. 51, no. 12, pt. 1, p. 1857–1860.

Home Foreland beds
Lower Cretaceous (Aptian-Albian?): Northeast Greenland.
Wolf Mayne, 1949, Meddel. om Grønland, bind 133, nr. 3, p. 137, 211–217, 281.

Homer quartzite
Triassic(?): California.
Cordell Durrell, 1940, Calif. Univ. Dept. Geol. Sci. Bull., v. 25, no. 1, p. 15, 116.

Homochitto member (of Pascagoula formation)
Miocene: Mississippi.
G. F. Brown and W. F. Guyton, 1943, Miss. State Geol. Survey Bull. 56, p. 22–23, 32–37.

Honakta formation
Upper Triassic: British Columbia, Canada.
F. A. Kerr, 1945, Canada Geol. Survey Paper (Prelim. Map) 45–30; 1948, Mem. 248, p. 20(table), 28, geol. map.

Honda formation
Upper Jurassic: California.
T. W. Dibblee, Jr., 1950, Calif. Dept. Nat. Res., Div. Mines Bull. 150, p. 22.

Hondo member (of Woodbend formation)
Upper Devonian: Alberta, Canada (subsurface).
H. R. Belyea, 1952, Canada Geol. Survey Paper 52–27, p. 25–28.

Hondo shale or formation
See **Arroyo Hondo shale member** (of Lodo formation).

Hondo slate
Precambrian: New Mexico.
Evan Just, 1937, N. Mex. School Mines Bull. 13, p. 23.

Honeycut formation (of Ellenburger group)
Lower Ordovician: Texas.
V. E. Barnes and P. E. Cloud, Jr., 1945, Tex. Univ. Bur. Econ. Geology Min. Res. Circ. 34, p. 1, 3–7, 31–41.

Honolua volcanic series
Pliocene, upper(?), or Pleistocene, lower: Hawaiian Islands (Maui).
H. T. Stearns *in* H. T. Stearns and G. A. Macdonald, 1942, Hawaii Div. Hydrography Bull. 7, p. 159, 173–179.

Honomanu volcanic series
Tertiary, upper(?): Hawaiian Islands (Maui).
H. T. Stearns *in* H. T. Stearns and G. A. Macdonald, 1942, Hawaii Div. Hydrography Bull. 7, p. 65, 68–74.

Hoodoo lavas
Quaternary: British Columbia, Canada.
F. A. Kerr, 1948, Canada Geol. Survey Mem. 246, p. 41–45.

Hook limestone member (of Macy formation)
Middle Ordovician: Missouri.
E. R. Larson, 1951, Am. Assoc. Petroleum Geologists Bull., v. 35, no. 9, p. 2060–2061.

Hookton formation
Pleistocene, upper: California.
B. A. Ogle, 1953, Calif. Dept. Nat. Res., Div. Mines Bull. 164, p. 13 (fig. 3), 57–63, pl. 1.

Hooper formation
Eocene, lower (Wilcox): Texas.
W. W. Sharp, Jr., 1953, *in* AAPG, SEPM, SEG Guidebook Field Trip Routes Joint Ann. Meeting, March, p. 53 (geol. map).

Hoover conglomerate unit (in Sycamore Canyon member of Puente formation)
Miocene, upper: California.
C. J. Kundert, 1952, Calif. Dept. Nat. Res., Div. Mines Special Rept. 18, p. 6–7.

Hopedale gneiss
Precambrian: Newfoundland (Labrador), Canada.
S. K. Roy, 1941, Field Mus. Nat. History Geol. Mem., v. 2, p. 20.
E. H. Kranck, 1953, Canada Geol. Survey Bull. 26, p. 33, 34.

Hope Gate limestone or series.
Miocene, middle or upper: Jamaica, British West Indies.
H. R. Versey, 1953, Jamaica Geol. Survey Dept. Ann. Rept. 1951–52, p. 2, 4.

Hopewell series
Precambrian: New Mexico.
Evan Just, 1937, N. Mex. School Mines Bull. 13, p. 21–23, 42–43.

Hopkintonian series
Silurian (Early Yorkic): Missouri.
[C. R.] Keyes, 1941, Pan-Am. Geologist, v. 75, no. 2, p. 157 (chart).

Hopwood conglomerate
Lower Mississippian (Oil Lake): Pennsylvania.
W. M. Laird, 1941, Pa. Topog. and Geol. Survey Progress Rept. 126, p. 14 (footnote).

Horcones formation
Eocene to Oligocene: Vera Cruz, Mexico.
Ramiro Robles Ramos, 1942, Irrigación en Mexico, v. 23, no. 3, p. 45 (correlation chart).
Rudolfo Suarez C., 1950, Asociación Mexicana Geólogos Petroleros Bol., v. 2, no. 11, p. 653–654.

Hornbrook formation
Upper Cretaceous: Oregon and California.
F. G. Wells, 1955, U. S. Geol. Survey Mineral Inv. Field Studies Map MF 38.

Hornby formation
Upper Cretaceous: British Columbia, Canada.
J. L. Usher, 1952, Canada Geol. Survey Bull. 21, p. 21, 29–30.

Hornby Bay series
Precambrian: Northwest Territories (Mackenzie), Canada.
D. F. Kidd, 1933, Canada Geol. Survey Summ. Rept. 132, pt. C, p. 13, Map 296A.

Horne rhyolites
Precambrian: Quebec, Canada.
J. A. Dresser and T. C. Denis, 1949, Quebec Dept. Mines Geol. Rept. 20, v. 3, p. 339–340.

Hornet conglomerate
Ordovician: Newfoundland, Canada.
G. R. Heyl, 1936, Newfoundland Geol. Survey Bull. 3, p. 6.

Hornsilver dolomite member (of Minturn formation)
Pennsylvanian: Colorado.
Ogden Tweto, 1949, Colo. Sci. Soc. Proc., v. 15, no. 4, p. 152, 199.

Horquilla limestone
Pennsylvanian: Arizona.
James Gilluly, J. R. Cooper, and J. S. Williams, 1954, U. S. Geol. Survey Prof. Paper 266, p. 16–18.

Horry clay
Pleistocene (probably early Peorian): South Carolina.
C. W. Cooke, 1937, Washington Acad. Sci. Jour., v. 27, no. 1, p. 1–5.

Horsehead tongue (of Mancos shale)
Upper Cretaceous: New Mexico.
W. S. Pike, Jr., 1947, Geol. Soc. America Mem. 24, p. 9, 35.

Horseranch group
Lower and Middle Cambrian: British Columbia, Canada.
H. Gabrielse, 1955, Canada Geol. Survey Paper (Prelim. Map) 54–10.

Horsethief formation
Pliocene: California.
O. P. Jenkins, 1938, Geologic map of California (1 : 500,000): Calif. Dept. Nat. Res., Div. Mines, sheet 4.

Hospital porphyry
Pliocene(?): Nevada.
James Gilluly, 1946, U. S. Geol. Survey Prof. Paper 209, p. 44.

Hospital Hill formation
Eocene, upper: Trinidad, British West Indies.
J. A. Cushman and H. H. Renz, 1948, Cushman Lab. Foram. Research Special Pub. 24, p. 3–4.

Hosston formation

Lower Cretaceous: Subsurface in Louisiana, Arkansas, and Texas.

R. W. Imlay, 1940. Ark. Geol. Survey Inf. Circ. 12, p. 28–30.

Hostetter limestone

Permian (Greene): Ohio.

A. T. Cross, W. H. Smith, and Thomas Arkle, Jr., 1950, Field guide for the special field conference on the stratigraphy, sedimentation and nomenclature of the Upper Pennsylvanian and Lower Permian strata (Monongahela, Washington and Greene series) in the northern portion of the Dunkard Basin of Ohio, West Virginia, and Pennsylvania: W. Va. Geol. and Econ. Survey, [pl. 1].

Hostler member (of Hatter formation)

Middle Ordovician (Chazyan): Pennsylvania.

G. M. Kay, 1943, Econ. Geology, v. 38, no. 3, p. 193, 195.

Hothouse formation

Precambrian: Georgia and North Carolina.

V. J. Hurst, 1955, Ga. Geol. Survey Bull. 63, p. 35–40.

Hot Springs formation

Pennsylvanian (Derry): New Mexico.

M. L. Thompson, 1942, N. Mex. State Bur. Mines Min. Res. Bull. 17, p. 27, 38–39.

House limestone

Lower Ordovician (Canadian): Utah.

L. F. Hintze, 1951, Utah Geol. Mineralog. Survey Bull. 39, p. 12–13.

Housum member (of Mercersburg formation)

Middle Ordovician (Trentonian): Pennsylvania.

L. C. Craig, 1949, Geol. Soc. America Bull., v. 60, no. 4, p. 715 (fig. 1), 732–733.

Houx cyclothem (including Houx limestone)

Pennsylvanian (Des Moines): Missouri, Iowa, Kansas, and Nebraska.

L. M. Cline, 1941, Am. Assoc. Petroleum Geologists Bull., v. 25, no. 1, p. 36, 37.
J. M. Jewett, 1945, Kans. State Geol. Survey Bull. 58, p. 63.

Howard Creek sand (in Kaskapau formation)

Cretaceous (Cenomanian): Alberta, Canada.

C. R. Stelck and J. H. Wall, 1954, Alberta Research Council Rept. 68, p. 6, 8.

Howard Quarry sandstone

Upper Devonian: Pennsylvania.

K. E. Caster, 1939, Jour. Paleontology, v. 13, no. 5, p. 532.

Howells Ridge formation

Lower Cretaceous (Bisbee group): New Mexico.

S. G. Lasky, 1938, Am. Assoc. Petroleum Geologists Bull., v. 22, no. 5, p. 533, fig. 2.

Howey diorite

Precambrian (pre-Algoman): Ontario, Canada.

H. C. Horwood and N. B. Keevil, 1943, Jour. Geology, v. 51, no. 1, p. 20.

Howse group

Precambrian (Proterozoic): Quebec and Newfoundland, Canada.

M. J. Frarey, 1952, Canada Geol. Survey Paper 52–16, p. 2.

Hoyle sedimentary series

Precambrian: Ontario, Canada.

W. R. Dunbar, 1948, *in* Structural geology of Canadian ore deposits: Canadian Inst. Mining and Metallurgy, p. 445, fig. 1.

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Huajuapan beds

Tertiary(?): Oaxaca, Mexico.

G. P. Salas, 1949, Asociación Mexicana Geólogos Petroleros Bol., v. 1, no. 2, p. 120.

Hualalai volcanic series

Pleistocene and Recent: Hawaiian Islands (Hawaii).

C. K. Wentworth, 1938, Hawaiian Volcano Observatory 3d Special Rept., p. 88–89.
H. T. Stearns and G. A. Macdonald, 1946, Hawaii Div. Hydrography Bull. 9, p. 139–148.

Hualpai limestone

Pliocene(?): Nevada.

C. R. Longwell, 1936, Geol. Soc. America Bull., v. 47, no. 9, p. 1429–1433.

Huasteca formation

Oligocene, lower: Vera Cruz, Mexico.

J. M. Muir, 1936, Geology of the Tampico region, Mexico: Tulsa, Okla., Am. Assoc. Petroleum Geologists, p. 124–131.

Huayacocotla formation

Lower Jurassic: Vera Cruz, Puebla, and Hidalgo, Mexico.

R. W. Imlay and others, 1948, Am. Assoc. Petroleum Geologists Bull., v. 32, no. 9, p. 1750–1753.

Hubbard Hill member (of Littleton formation)

Lower Devonian: New Hampshire.

M. T. Heald, 1950, Geol. Soc. America Bull., v. 61, no. 1, p. 46–50, 69–70, 78–79.

Hub Lake syenite

Precambrian: Quebec, Canada.

H. C. Cooke, W. F. James, and J. B. Mawdsley, 1931, Canada Geol. Survey Mem. 166, p. 111–112.

Huckleberry conglomerate

Lower Cambrian(?): Washington.

W. A. G. Bennett, 1941, Wash. State Dept. Conserv. Devel., Div. Geology, Rept. Inv. 5, p. 8.

Huckleberry greenstone

Lower Cambrian(?): Washington.

H. E. Culver, 1939, Wash. State Coll. Monthly Bull., v. 22, no. 7, pt. 1, p. 19.
W. A. G. Bennett, 1941, Wash. State Dept. Conserv. Devel., Div. Geology, Rept. Inv. 5, p. 8.

Hudson member (of Richfield formation)

Precambrian: British Columbia, Canada.

W. E. Cockfield and A. H. Lang, 1937, Canadian Inst. Mining and Metallurgy Trans., v. 40, p. 465.

Hudson Bay formation

Devonian: Manitoba, Canada (subsurface).

J. R. Ower, 1952, Oil in Canada, v. 5, no. 1, p. 54; 1953, Canadian Inst. Mining and Metallurgy Trans., v. 56, p. 395.

Hudson Highlands complex

Precambrian: New York.

K. E. Lowe, 1950, Geol. Soc. America Bull., v. 61, no. 3, p. 142.

Huehue flow

Recent: Hawaiian Islands (Hawaii).

G. A. Macdonald, 1949, U. S. Geol. Survey Prof. Paper 214–D, p. 75.

Huelster formation
Tertiary: Texas.
G. K. Eifler, Jr., 1951, Geol. Soc. America Bull., v. 62, no. 4, p. 342–345, pl. 1.

Hughes Gap formation
Precambrian: Georgia and North Carolina.
V. J. Hurst, 1955, Ga. Geol. Survey Bull. 63, p. 21–35.

Hughes Lake conglomerate
Precambrian: Manitoba, Canada.
J. D. Allan, 1948, Precambrian, v. 21, no. 3, p. 6.

Huichica formation
Pleistocene: California.
C. E. Weaver, 1949, Geol. Soc. America Mem. 35, p. 16 (table 3), 98.

Huizachal formation
Jurassic: Tamaulipas, Hidalgo, Durango, Vera Cruz, Puebla, San Luis Potosí, and Nuevo Leon, Mexico.
R. W. Imlay and others, 1948, Am. Assoc. Petroleum Geologists Bull., v. 32, no. 9, p 1750–1753.

Hulen beds
Lower Cretaceous: California.
F. M. Anderson, 1938, Geol. Soc. America Special Paper 16, p. 38 (table 1), 67–68, table 2.

Hulett sandstone member (of Sundance formation)
Upper Jurassic: Wyoming and South Dakota.
R. W. Imlay, 1947, Am. Assoc. Petroleum Geologists Bull., v. 31, no. 2, p. 255–257.

Humber Falls formation
Lower Carboniferous: Newfoundland, Canada.
A. O. Hayes, 1949, Newfoundland Geol. Survey Inf. Circ. 6, Map 2.

Hume shale member (of Perrysburg formation)
Upper Devonian: New York.
J. F. Pepper and Wallace de Witt, Jr., 1951, U. S. Geol. Survey Oil and Gas Inv. Chart OC 45.

Hummel facies (of Muldraugh formation)
Lower Mississippian: Kentucky.
P. B. Stockdale, 1939, Geol. Soc. America Special Paper 22, p. 214–217.

Humpback gneiss
Precambrian (Archean?): North Carolina.
C. E. Hunter and P. W. Mattocks, 1936, TVA Div. Geology Bull. 4, p. 11–12.

Hungerford formation
Upper Cambrian: Vermont.
Charles Schuchert, 1937, Geol. Soc. America Bull., v. 48, no. 7, p. 1047–1049.

Hungry Hollow formation
Middle Devonian: Ontario, Canada.
G. A. Cooper and A. S. Warthin, 1941, Washington Acad. Sci. Jour., v. 31, no. 6, p. 260.

Hungry Run sandstone member (of Orangeville shale)
Mississippian: Pennsylvania.
Wallace de Witt, Jr., 1951, Geol. Soc. America Bull., v. 62, no. 11, p. 1364–1366.

Hungry Valley formation
Pliocene, upper: California.
J. C. Crowell, 1950, Am. Assoc. Petroleum Geologists Bull., v. 34, no. 8, p. 1629 (fig. 5), 1633–1638.

Hunter sandstone and conglomerate in Puente formation
Miocene, upper: California.
M. L. Krueger, 1943, Calif. Dept. Nat. Res., Div. Mines Bull. 118, pt. 3, p. 363.
A. O. Woodford, T. G. Moran, and J. S. Shelton, 1946, Am. Assoc. Petroleum Geologists Bull., v. 30, no. 4, p. 521, 527.

Hunterian subseries
Middle Ordovician (Bolarian): Pennsylvania, Kentucky, West Virginia, Virginia, Maryland, and New York, and Ontario, Canada.
Marshall Kay, 1947, (abs.) Geol. Soc. America Bull., v. 58, no. 12, pt. 2, p. 1199; 1948, Am. Assoc. Petroleum Geologists Bull., v. 32, no. 8, p. 1409–1410.

Hunting Hill greenstone
Precambrian(?): Rhode Island and Massachusetts.
Alonzo Quinn, R. G. Ray, and W. L. Seymour *in* Alonzo Quinn and others, 1948, R. I. Port and Indus. Devel. Comm. Geol. Bull. 3, p. 12, geol. map.

Huntsville fanglomerate
Pliocene, upper: Utah.
A. J. Eardley, 1955, Utah Geol. Soc. Guidebook 10, p. 39, fig. 9.

Hurley formation
Jurassic: British Columbia, Canada.
C. E. Cairnes, 1937, Canada Geol. Survey Mem. 213, p. 18–21.

Hurley Creek formation
Pennsylvanian: New Brunswick, Canada.
J. E. Muller, 1949, Canada Geol. Survey Paper 49–13 (Prelim. Map 49–13A); 1950, Mem. 260, p. 8 (table), 19–20, geol. map.

Huron City sandstones and shales
Mississippian (Kinderhook): Michigan.
H. M. Martin, 1936, The centennial geological map of the southern peninsula of Michigan (1:500,000): Mich. Geol. Survey Div. Pub. 39 (Geol. Ser. 33).

Hurricane graywacke
Precambrian: North Carolina, Georgia, and Tennessee.
G. W. Stose and A. J. Stose, 1946, (abs.) Geol. Soc. America Bull., v. 57, no. 12, pt. 2, p. 1233; 1949, v. 60, no. 2, p. 271–272, 274–278.

Hurricane marine lentil (in Landrum member of Cook Mountain formation)
Eocene (Claiborne): Texas.
H. B. Stenzel, 1940, Am. Assoc. Petroleum Geologists Bull., v. 24, no. 9, p. 1665–1670.

Hurricane Bridge limestone
Middle Ordovician: Virginia.
R. L. Miller and W. P. Brosgé, 1950, U. S. Geol. Survey Oil and Gas Inv. Prelim. Map 104.

Hurry Fjord granite
See Hurry Inlet granite.

Hurry Inlet formation
Cambro-Ordovician(?): Northeast Greenland.
E. H. Kranck, 1935, Meddel. om Grønland, bind 95, nr. 7, p. 11, pl. 3.

Hurry Inlet gneisses
Lower Paleozoic (Caledonian?): Northeast Greenland.
E. H. Kranck, 1935, Meddel. om Grønland, bind 95, nr. 7, p. 10, 26–47.

Hurry Inlet granite
Devonian(?): Northeast Greenland.
E. H. Kranck, 1935, Meddel. om Grønland, bind 95, nr. 7, p. 10, 84–89, pl. 3.

Hurry Inlet series
See Cape Brown and Hurry Inlet series.

Hurwal formation
Upper Triassic: Oregon.
W. D. Smith and J. E. Allen, 1941, Oreg. Dept. Geology and Mineral Industries Bull. 12, p. 6, 13–14.

Hurwitz group
Precambrian: Northwest Territories (Keewatin), Canada.
G. M. Wright, 1955, Canada Geol. Survey Paper 55–17, p. 6–7.

Hyde formation
Middle Jurassic: Oregon.
R. L. Lupher, 1941, Geol. Soc. America Bull., v. 52, no. 2, p. 227, 255–259.

Hye granite
Precambrian: Texas.
V. E. Barnes, R. F. Dawson, and G. A. Parkinson, 1947, Tex. Univ. Bur. Econ. Geology Pub. 4246, p. 50 (fig. 3).

Hyolithes Creek formation
See Hyolithus Creek formation.

Hylolithus Creek formation
Cambrian (post-Lower Cambrian, pre-Upper Ozarkian): Northeast Greenland.
Christian Poulsen, 1930, Meddel. om Grønland, bind 74, nr. 12, p. 310–311.

Hyrum dolomite member (of Jefferson formation)
Devonian: Utah.
J. S. Williams, 1948, Geol. Soc. America Bull., v. 59, no. 11, p. 1139, 1140.

Ibex limestone
Lower Permian: Texas.
M. G. Cheney, 1948, Abilene Geol. Soc. [Guidebook] Spring Field Trip, June 11–12, p. 5.

Icaiché formation
Oligocene or Miocene: Yucatan, Mexico; and Guatemala.
Karl Sapper, 1937, Mittelamerika, Handbuch der regionalen Geologie: Heidelberg, Band 8, Abt. 4a, Heft 29, pls. 3, 4.
Manuel Alvarez, Jr., 1954, Asociación Mexicana Geólogos Petroleros Bol., v. 6, nos. 5–6, p. 209.

Ice Box shale
Middle Ordovician (Mohawkian): South Dakota.
M. R. McCoy, 1952, Billings Geol. Soc. Guidebook 3d Ann. Field Conf., p. 45–46.

Ice Springs Craters flow
Recent: Utah.
G. B. Maxey, 1946, Am. Jour. Sci., v. 244, no. 5, p. 328.

Idak basalt

Tertiary and Quaternary: Alaska (Aleutian Islands).

F. M. Byers, Jr., and others, 1947, U. S. Geol. Survey Alaskan Volcano Inv. Rept. 2, pt. 3, p. 28.

Idenbro cyclothem (including Idenbro limestone)

Pennsylvanian (Des Moines): Kansas, Missouri, and Nebraska.

J. M. Jewett, 1941, Kans. State Geol. Survey Bull. 38, pt. 11, p. 340; 1945, Bull. 58, p. 47–48, 69, 70.

Iditarod basalt

Upper Cretaceous and Paleocene(?): Alaska.

W. M. Cady and others, 1955, U. S. Geol. Survey Prof. Paper 268, p. 47–50.

Igaliko sandstone

Devonian(?): Southwest Greenland.

N. V. Ussing, 1911, Meddel. om Grønland, hefte 38, p. 13–22.

Iisa beds

Pliocene: Caroline Islands (Kusaie).

Risaburo Tayama, 1952, Coral reefs in the South Seas: Japan Hydrog. Office Bull., v. 11, p. 70, table 5 [English translation in library of U. S. Geol. Survey, p. 85].

Ijamsville phyllite

Precambrian(?): Maryland.

A. I. Jonas and G. W. Stose, 1938, Washington Acad. Sci. Jour., v. 28, no. 8, p. 346.

Ikertoq gneiss complex

Precambrian: Southwest Greenland.

Hans Ramberg, 1948, Meddel. Dansk Geol. Foren., bind 11, hefte 3, p. 313, 318–319, fig. 1.

Ilimausak complex

Devonian (?): Southwest Greenland.

N. V. Ussing, 1911, Meddel. om Grønland, hefte 38, p. 23, 108–120.

Ilimausak porphyries

Devonian(?): Southwest Greenland.

N. V. Ussing, 1911, Meddel. om Grønland, hefte 38, p. 90–92, 217–221.

Illipah formation

Upper Mississippian: Nevada and Utah.

F. W. Christiansen, 1951, Utah Geol. Mineralog. Survey [Utah Geol. Soc.] Guidebook 6, p. 76.

R. C. Spivey, 1954, Pacific Petroleum Geologist, v. 8, no. 7, p. 1.

Ilmon basalt

(?) Miocene, lower: California.

T. W. Dibblee, Jr., and C. W. Chesterman, 1953, Calif. Dept. Nat. Res., Div. Mines Bull., 168, p. 12, 37–38.

Imperial formation

Upper Devonian: Northwest Territories (Mackenzie) and Yukon, Canada.

G. S. Hume and T. A. Link, 1945, Canada Geol. Survey Paper 45–16, p. 34–39.

Indart sandstone

Eocene: California.

N. L. Taliaferro, [1949], Geologic map of the Hollister quadrangle, California (1:62,500): Calif. Dept. Nat. Res., Div. Mines [preprint?] Bull. 143, pl. 1.

Independence formation
Triassic and/or older: British Columbia, Canada.
H. S. Bostock and D. A. McNaughton, 1940, Canada Geol. Survey Map 568A.

Indian Creek granite
Precambrian: Colorado.
M. F. Boos and E. J. Aberdeen, 1936, (abs.) Geol. Soc. America Proc. 1935, p. 67; 1940, Geol. Soc. America Bull., v. 51, no. 5, p. 699, 728.

Indian Fort shale member (of Brodhead formation)
Lower Mississippian: Kentucky.
P. B. Stockdale, 1939, Geol. Soc. America Special Paper 22, p. 174–176, 188–189.

Indian Island group
Silurian: Newfoundland, Canada.
D. M. Baird, 1950, Canada Geol. Survey Paper 50–22, p. 32–36.

Indian Meadows formation
Eocene, lower: Wyoming.
J. D. Love, 1939, Geol. Soc. America Special Paper 20, p. 58–63.

Indian Mountain leucogranodiorite
Cretaceous: California.
E. S. Larsen, Jr., 1948, Geol. Soc. America Mem. 29, p. 85–87.

Indianola formation or group
Upper Cretaceous: Utah.
S. L. Schoff, 1938, Ohio State Univ. Abs. Doctors' Dissert. 25, p. 378.
E. M. Spieker, 1946, U. S. Geol. Survey Prof. Paper 205–D, p. 128–130.

Indian River hornblende syenite
Precambrian: New York.
A. F. Buddington, 1939, Geol. Soc. America Mem. 7, p. 85, 285, 286.

Indiantown gabbro
Pre-Carboniferous: New Brunswick, Canada.
A. O. Hayes and B. F. Howell, 1937, Geol. Soc. America Special Paper 5, p. 33–34.

Infierno formation
Pliocene, upper: Baja California, Mexico.
I. F. Wilson, 1948, Am. Assoc. Petroleum Geologists Bull., v. 32, no. 9, p. 1781–1782.

Ingenika group
Lower Cambrian: British Columbia, Canada.
E. F. Roots, 1948, Canada Geol. Survey Paper 48–5, p. 6–9.

Ingleside formation
Recent: Texas.
W. A. Price, 1939 (abs.) Am. Assoc. Petroleum Geologists Bull., v. 23, no. 12, p. 1875.

Inglis member (of Moodys Branch formation)
Eocene (Jackson): Florida.
R. O. Vernon, 1951, Fla. Geol. Survey Bull. 33, p. 115–140.

Ingramian stage
Late Cretaceous: California.
P. P. Goudkoff, 1945, Am. Assoc. Petroleum Geologists Bull., v. 29, no. 7, p. 985–987.

Inklin group

Lower Cretaceous(?) : British Columbia, Canada.

F. A. Kerr, 1945, Canada Geol. Survey Papar (Prelim. Map) 45–30; 1948, Mem. 248, p. 19 (table), 37–38, geol. map.

Inman formation

Ordovician: Tennessee.

C. W. Wilson, Jr., 1949, Tenn. Div. Geology Bull. 56, p. 175–179.

Inoceramus series

Upper Cretaceous (Cenomanian) : Jamaica, British West Indies.

V. A. Zans, 1953, Jamaica Geol. Survey Dept. Ann. Rept. 1951–52, p. 2.

L. J. Chubb, 1955, Geol. Mag., v. 92, no. 3, p. 190–192.

Inskip formation

Permian(?) : Nevada.

S. W. Muller, H. G. Ferguson, and R. J. Roberts, 1951, Geology of the Mount Tobin quadrangle, Nevada: U. S. Geol. Survey Geol. Quadrangle Map [GQ 7].

Interlake group

Silurian: Manitoba, Canada.

A. D. Baillie, 1951, Manitoba Dept. Mines and Nat. Res. Div. Mines Pub. 50–1, p. 6.

Intrepid Bay formation

Cretaceous or Tertiary(?): Northwest Territories (Cornwallis Island), Canada.

R. Thorsteinsson and Y. O. Fortier, 1954, Canada Geol. Survey Paper 53–24, p. 14–15.

Inverness formation

Pennsylvanian: Nova Scotia, Canada.

G. W. H. Norman, 1935, Canada Geol. Survey Mem. 177, p. 47–48.

Iowa Gulch porphyry

Upper Cretaceous(?) or Tertiary, lower: Colorado.

C. H. Behre, Jr., E. N. Goddard, and A. E. Sandberg, 1939, Preliminary geologic map of west slope of Mosquito Range in the vicinity of Leadville, Colorado (1 : 12,000) : U. S. Geol. Survey.

C. H. Behre, Jr., 1939, Colo. Sci. Soc. Proc., v. 14, no. 2, p. 64.

Ipsorisok strata

Miocene: West Greenland.

A. E. Nordenskiöld, 1872, Geol. Mag., v. 9, p. 458–459.

Ireland Point volcanics (in Maiden Point sandstone)

Ordovician: Newfoundland, Canada.

J. R. Cooper, 1937, Newfoundland Geol. Survey Bull. 9, p. 10.

Ireson felsite

Upper Silurian or Lower Devonian: Maine.

G. H. Chadwick, 1939, Am. Jour. Sci., v. 237, no. 5, p. 361; 1942 (abs.) Geol. Soc. America Bull., v. 53, no. 12, pt. 2, p. 1796–1797.

Ireton member (of Woodbend formation)

Devonian: Alberta, Canada (subsurface).

D. B. Layer and others, 1950, Am. Assoc. Petroleum Geologists Bull., v. 34, no. 9, p. 1821.

Iron Canyon aggloremate member (of Tuscan formation)

[Pliocene]: California.

R. C. Treasher, 1947 (abs.) Geol. Soc. America Bull., v. 68, no. 12, pt. 2, p. 1257.

Iron Creek glaciation
Pleistocene (pre-Wisconsin) : Alaska.
D. M. Hopkins *in* T. L. Péwé and others, 1953, U. S. Geol. Survey Circ. 289, p. 10, 13 (table 1).

Iron Gate facies (of Clinton formation)
Middle Silurian (Niagaran) : Virginia.
Charles Butts, 1940, Va. Geol. Survey Bull. 52, pt. 1, p. 238, 239, 242–243, 439b.

Iron Springs formation
Upper Cretaceous(?) : Utah.
J. H. Mackin, 1947, Utah Geol. Soc. Guidebook 2, p. 7–8, 9.

Ironton granite
Precambrian, Missouri.
H. B. Graves, 1938, Acad. Sci. St. Louis Trans., v. 29, no. 5, p. 119.

Iroquois flow (in Portage Lake lava series)
Precambrian (middle Keweenawan series) : Michigan.
W. S. White, H. R. Cornwall, and R. W. Swanson, 1953, U. S. Geol. Survey Geol. Quadrangle Map GQ 27 [1954].

Irvine facies (of Brodhead formation)
Lower Mississippian : Kentucky.
P. B. Stockdale, 1939, Geol. Soc. America Special Paper 22, p. 166–177.

Irvine shale (in Santiago formation)
Eocene : California.
George Lunetta, 1953, Calif. Dept. Nat. Res., Div. Mines Min. Inf. Service, v. 6, no. 10, p. 4–6.

Irvingtonian age.
Pleistocene, early : North America.
D. E. Savage, 1951, Calif. Univ. Pubs. Dept., Geol. Sci. Bull., v. 28, no 10, p. 289.

Irwinton sand member (of Barnwell formation)
Eocene, upper : Georgia.
P. E. LaMoreaux, 1946, Ga. Geol. Survey Bull. 50, pt. 1, p. 17–21.

Isachsen formation
Lower Cretaceous or younger : Northwest Territories (Ellef Ringnes Island), Canada.
W. W. Heywood, 1955, Canadian Mining and Metall. Bull., v. 48, no. 514, p. 60, 61

Isfjord zone
Lower Paleozoic (Caledonian) : Northeast Greenland.
C. E. Wegmann, 1935, Meddel. om Grønland, bind 103, nr. 3, p. 30–31, pl. 1.

Ishpa formation
Precambrian or Lower Cambrian : British Columbia, Canada.
A. H. Lang, 1938, Canada Geol. Survey Paper 38–16, p. 12–13.

Iskut River lava
Quaternary : British Columbia, Canada.
F. A. Kerr, 1948, Canada Geol. Survey Mem. 246. p. 40–41.

Island Lakes gabbroic anorthosite
Precambrian : Ontario, Canada.
J. M. Harrison, 1944, Geol. Soc. America Bull., v. 55, no. 12, p. 1409.

Islay member (of Mannville formation)
Lower Cretaceous: Albert, Canada (subsurface).
A. W. Nauss, 1945, Am. Assoc. Petroleum Geologists Bull., v. 29, no. 11, p. 1614.

Isortoq gneiss complex
Precambrian: Southwest Greenland.
Hans Ramberg, 1948, Meddel. Dansk Geol. Foren., bind 11, hefte 3, p. 313, 319–320, fig. 1.

Ithaca Peak granite
Mesozoic(?): Arizona.
B. E. Thomas, 1949, Econ. Geology, v. 44, no. 8, p. 667.

Itkillik glaciation
Pleistocene (Wisconsin): Alaska.
R. L. Detterman *in* T. L. Péwé and others, 1953, U. S. Geol. Survey Circ. 289, p. 11, 13 (table 1).

Ivanhoe glacial substage
Pleistocene (Cary): Colorado.
R. L. Nelson, 1954, Jour. Geology, v. 62, no. 4, p. 331–333.

Iversen basalt
"Between late Cretaceous and Oligocene": California.
C. E. Weaver, 1944, Wash. [State] Univ. Pubs. in Geology, v. 6, no. 1, p. 4 (table), 5, 17–18.

Ives breccia
Mississippian: Texas.
F. B. Plummer, 1939, *in* W. Tex. Geol. Soc. [Guidebook] Nov. 11–12, p. 15.
V. E. Barnes, P. E. Cloud, Jr., and L. E. Warren, 1947, Geol. Soc. America Bull., v. 58, no. 2, p. 132–135.

Ixcoy limestone
Mesozoic: Guatemala.
Franz Termer, 1932, Gesell. Erdkunde Berlin Zeitschr. no. 7/8, p. 243–244, 247.

Izee group
Middle Jurassic: Oregon.
R. L. Lupher, 1941, Geol. Soc. America Bull., v. 52, no. 2, p. 227, 255.

Jabaco formation
Eocene, upper: Cuba.
P. J. Bermudez, 1937, Soc. Cubana Historia Nat. Mem., v. 11, no. 5, p. 325–336; 1950, Soc. Cubana Historia Nat. Mem., v. 19, no. 3, p. 247–249.

Jack Creek formation
Upper Cretaceous: California.
N. L. Taliaferro, 1941, (abs.) Am. Assoc. Petroleum Geologists Bull., v. 25, no. 11, p. 2095; 1944, v. 28, no. 4, p. 474–484.

Jackpot limestone
Permian and/or Carboniferous: British Columbia, Canada.
A. H. Lang, 1938, Canada Geol. Survey Paper 38–16, p. 14.

Jacksons Arm conglomerate member (of Giles Cove formation)
Ordovician: Newfoundland, Canada.
G. R. Heyl, 1937, Newfoundland Geol. Survey Bull. 8, p. 11.

Jaco sandstone (of Chicontepec formation)
Eocene, lower: Tamaulipas, Mexico.
Arnold Heim, 1940, Eclogae Geologicae Helvetiae, v. 33, no. 2, p. 330.

Jacobs Chapel shale
Lower Mississippian: Indiana.
Guy Campbell, 1946, Geo. Soc. America Bull., v. 57, no. 9, p. 855–856.

Jagua formation
Upper Jurassic: Cuba.
R. H. Palmer, 1945, Jour. Geology, v. 53, no. 1, p. 5 (table 1), 6.
R. W. Imlay, 1952, Geol. Soc. America Bull., v. 63, no. 9, p. 969, Chart 8C.

Jaimanitas formation
Pleistocene: Cuba.
Jorge Brodermann, 1940, Soc. Cubana Ingenieros Rev., v. 34, no. 2, geol. map and cross sections.
P. J. Bermudez, 1950, Soc. Cubana Historia Nat. Mem., v. 19, no. 3, p. 306–307.

Jalama formation
Upper Cretaceous: California.
T. W. Dibblee, Jr., 1950, Calif. Dept. Nat. Res., Div. Mines Bull. 150, p. 23–24.

James limestone
Lower Cretaceous (Comanche series): Subsurface in Arkansas, Louisiana, and Texas.
W. B. Weeks, 1938, Am. Assoc. Petroleum Geologists Bull., v. 22, no. 8, p. 970.

Jameson shale member (of Markley sandstone)
Eocene: California.
C. E. Weaver, 1949, Geol. Soc. America Mem. 35, p. 17 (table 3), 62–64.

James River granite
Lower Ordovician(?): Nova Scotia, Canada.
M. Y. Williams, 1914, Canada Geol. Survey Mem. 60, p. 101–105.

Janssen clay member (of Dakota formation)
Upper Cretaceous: Kansas.
Norman Plummer, 1942, (abs.) Compass, v. 22, no. 4, p. 327.
Norman Plummer and J. F. Romary, 1942, Kans. State Geol. Survey Bull. 41, pt. 9, p. 319, 328, 336–340.

Jardine "basalt"
Age unknown: Wyoming.
A. D. Howard, 1937, Geol. Soc. America Special Paper 6, p. 16–17.

Jaronú limestone
Upper Cretaceous: Cuba.
R. H. Palmer, 1945, Jour. Geology, v. 53, no. 1, p. 13.

Jaruco formation
Oligocene, middle: Cuba.
Jorge Brodermann, 1940, Soc. Cubana Ingenieros Rev., v. 34, no. 2, geol. map and cross sections.
P. J. Bermudez, 1950, Soc. Cubana Historia Nat. Mem., v. 19, no. 3, p. 270.

Jasper Lake greenstone conglomerate or agglomerate
Precambrian (Knife Lake): Minnesota.
J. W. Gruner, 1941, Geol. Soc. America Bull., v. 52, no. 10, p. 1583, 1593–1594.

Jasso formation
Upper Cretaceous (?): Mexico and Distrito Federal, Mexico.
R. M. Berbeyer, 1953, Congreso Cient. Mexicano Mem., tomo 4. table 6.

Jayville granite
Precambrian: New York.
A. F. Buddington, 1939, Geol. Soc. America Mem. 7, p. 84–85, 285, 286.

Jcaiché beds
See Icaiché formation.

Jealousy formation
Oligocene: St. Croix, Virgin Islands.
D. J. Cederstrom, 1941, Am. Jour. Sci., v. 239, no. 8, p. 557; 1950, U. S. Geol. Survey Water-Supply Paper 1067, p. 19–20.

Jeddito formation
Quaternary: Arizona.
J. T. Hack, 1941, Geog. Review, v. 31, no. 2, p. 262–263; 1942, Harvard Univ. Peabody Mus. Am. Archaeology and Ethnology Papers, v. 35, no. 1, p. 48–51.

Jeff conglomerate member (of Huelster formation)
Tertiary: Texas.
G. K. Eifler, Jr., 1951, Geol. Soc. America Bull., v. 62, no. 4, p. 343–345, pl. 1.

Jeff Davis granite
Precambrian(?): Georgia.
J. W. Clarke, 1952, Ga. Geol. Survey Bull. 59, p. 23–28.

Jeffreys limestone
Mississippian: Newfoundland, Canada.
W. A. Bell, 1948, Canada Geol. Survey Bull. 10, p. 24, 26.

Jenkins Branch chert bed (in Cotter dolomite)
Lower Ordovician: Missouri.
J. S. Cullison, 1944, Mo. Univ. School Mines and Metallurgy Bull., Tech. Ser., v. 15, no. 2, p. 35.

Jenness Pond member (of Littleton formation)
Lower Devonian: New Hampshire.
M. T. Heald, 1955, The geology of the Gilmanton quadrangle, New Hampshire: N. H. State Plan. Devel. Comm., p. 8–9, 10.

Jicotea member (of Jabaco formation)
Eocene, upper: Cuba.
Jorge Bordermann, 1940, Soc. Cubana Ingenieros Rev., v. 34, no. 2, geol. map and cross sections.
P. J. Bermudez, 1950, Soc. Cubana Historia Nat. Mem., v. 19, no. 3, p. 249–251.

Jimaní formation
Pliocene: Dominican Republic.
P. J. Bermudez, 1949, Cushman Lab. Foram. Research Special Pub. 25, p. 36.

Jim Ned shale member (of Belle Plains formation)
Permian (Leonard? age): Texas.
M. G. Cheney, 1940, Am. Assoc. Petroleum Geologists Bull., v. 24, no. 1, p. 66, 96.

Joaquin Ridge sandstone member (of Panoche formation)
Upper Cretaceous: California.
P. P. Goudkoff, 1945, Am. Assoc. Petroleum Geologists Bull., v. 29, no. 7, p. 989, 1006.
A. S. Huey, 1948, Calif. Dept. Nat. Res., Div. Mines Bull. 140, p. 31.

Joe Lott tuff
Tertiary: Utah.
Eugene Callaghan, 1939, Am. Geophys. Union Trans. 20th Ann. Meeting, pt. 3, p. 449–450.

Joes River beds

Eocene, upper: Barbados, British West Indies.

A. B. Thompson, 1925, Oil field exploration and development, v. 1, Oil field principles: New York, N. Y., D. Van Nostrand Co., p. 395.

Alferd Senn, 1940, Am. Assoc. Petroleum Geologists Bull., v. 24, no. 9, p. 1572–1577, 1581.

Joes Valley member (of North Horn formation)

Paleocene: Utah.

C. L. Gazin, 1941, U. S. Natl. Mus. Proc., v. 91, no. 3121, p. 6.

John Brown formation

Middle or Upper Jurassic: British Columbia, Canada.

R. E. Sommers, 1955, British Columbia Bur. Mines Ann. Rept. 1954, p. A89–A90.

Johnson Mill graphite schist

Age not stated: Virginia.

W. A. Nelson, 1949, (abs.) Va. Acad. Sci. Proc. 1948–1949, p. 140.

Johnson Peak tuff breccia

Miocene, middle, or older: California.

J. S. Shelton, 1955, Geol. Soc. America Bull., v. 66, no. 1, p. 65, pl. 1.

Johnston Hill glaciation

Pleistocene (pre-Wisconsin): Alaska.

E. H. Muller *in* T. L. Péwé and others, 1953, U. S. Geol. Survey Circ. 289, p. 2, 13 (table 1).

Jojoba formation

Precambrian (Algonkian): Sonora, Mexico.

A. A. Stoyanow, 1942, Geol. Soc. America Bull., v. 53, no. 9, p. 1264.

Joli Fou formation

Lower or Upper Cretaceous: Alberta, Canada.

R. T. D. Wickenden, 1949, Canada Geol. Survey Paper 49–15, p. 16–21.

Jonas Creek formation

Precambrian and (?) Lower Cambrian: Alberta, Canada.

R. D. Hughes, 1955, Alberta Soc. Petroleum Geologists Guidebook 5th Ann. Field Conf., p. 74–78.

Jones Creek formation

Upper Silurian: New Brunswick, Canada.

G. S. Mackenzie, 1951, Canada Geol. Survey Paper (Prelim. Map) 51–15.

Jones Ranch beds

Pleistocene: Kansas.

H. T. U. Smith, 1940, Kans. State Geol. Survey Bull. 34, p. 110–111.

Jonestown beds or formation

Ordovician: Pennsylvania.

Bradford Willard, 1939, Pa. Acad. Sci. Proc., v. 13, p. 129, 131.

Jordan Narrows unit

Oligocene (?) to Miocene, middle: Utah.

L. W. Slentz, 1955, Utah Geol. Soc. Guidebook 10, p. 24–26.

Jornada limestone

Upper Ordovician: New Mexico.

V. C. Kelley, 1951, Am. Assoc. Petroleum Geologists Bull., v. 35, no. 10, p. 2201 (table).

José shale member (of Yegua formation)
Eocene (Claiborne): Texas, and Tamaulipas, Mexico.
J. M. Patterson, 1942, Am. Assoc. Petroleum Geologists Bull., v. 26, no. 2, p. 259 (fig. 2), 265.

Jose Creek member (of McRae formation)
Upper Cretaceous and Tertiary, lower: New Mexico.
H. P. Bushnell, 1955, Compass, v. 33, no. 1, p. 12–14.

Joserita member (of Lowell formation)
Lower Cretaceous: Arizona.
A. A. Stoyanow, 1949, Geol. Soc. America Mem. 38, p. 11–12, 15.

Joshua schist
Paleozoic(?): Virginia.
W. R. Brown, 1951, (abs.) Geol. Soc. America Bull., v. 62, no. 12, pt. 2, p. 1547; 1953, Ky. Geol. Survey, ser. 9, Special Pub. 1, [p. 9] (fig. 1).

Joshua schist
Pre-Triassic: Massachusetts.
M. E. Willard, 1951, Bedrock geology of the Mount Toby quadrangle, Massachusetts: U. S. Geol. Survey Geol. Quadrangle Map [GQ 8].

Joshua submember (of Otisco member of Ludlowville formation)
Middle Devonian: New York.
W. A. Oliver, Jr., 1951, Am. Jour. Sci., v. 249, no. 10, p. 716–717.

Josselin gneiss
Precambrian (post-Keewatin): Quebec, Canada.
W. W. Longley, 1946, Quebec Dept. Mines Geol. Rept. 24, p. 11.

Joyita sandstone member (of Yeso formation)
Permian: New Mexico.
C. E. Needham and R. L. Bates, 1943, Geol. Soc. America Bull., v. 54, no. 11, p. 1660.

Juab limestone
Lower Ordovician (Chazyan): Utah.
L. F. Hintze, 1951, Utah Geol. Mineralog. Survey Bull. 39, p. 17–18.

Juana Lopez sandstone member (of Carlile shale)
Upper Cretaceous: New Mexico and Colorado.
C. H. Rankin, 1944, N. Mex. State Bur. Mines Min. Res. Bull. 20, p. 7, 12.

Jubilee phase (of Amargosa chaos)
Post-Miocene(?): California.
L. F. Nobel, 1940, (abs.) Geol. Soc. America Bull., v. 51, no. 12, pt. 2, p. 1936; 1941, v. 52, no. 7, p. 972–977.

Judkins formation
Quaternary: Texas.
R. M. Huffington and C. C. Albritton, Jr. 1941, Am. Jour. Sci., v. 239, no. 5, p. 327–329.

Judson member (of St. Lawrence formation)
Upper Cambrian (St. Croixian): Minnesota.
C. R. Stauffer, G. M. Schwartz, and G. A. Thiel, 1938, (abs.) Geol. Soc. America Bull., v. 49, no. 12, pt. 2, p. 1902.

Julianehaab granite
Precambrian (upper Algonkian?): Southwest Greenland.
N. V. Ussing, 1911, Meddel. om Grønland, hefte 38, p. 10–13.

Julies Harbour group
Middle Ordovician(?) : Newfoundland, Canada.
G. H. Espenshade, 1937, Newfoundland Geol. Survey Bull. 6, p. 9–10.

Jumonville sandstone
Upper Devonian (Conewango) : Pennsylvania.
W. M. Laird, 1941, Pa. Topog. and Geol. Survey Progress Rept. 126, p. 11 (footnote).

Jumpingpound member (of Alberta shale)
Upper Cretaceous: Alberta, Canada.
G. S. Hume, 1938, Canada Geol. Survey Paper 38–22, p. 11.

Juncal formation
Eocene, middle: California.
B. M. Page, J. G. Marks, and G. W. Walker, 1951, Am. Assoc. Petroleum Geologists Bull., v. 35, no. 8, p. 1749–1756.

Junction City facies (of New Providence formation)
Lower Mississippian: Kentucky.
P. B. Stockdale, 1939, Geol. Soc. America Special Paper 22, p. 115–117.

Junction Creek sandstone
Upper Jurassic: Colorado.
M. I. Goldman and A. C. Spencer, 1941, Am. Assoc. Petroleum Geologists Bull., v. 25, no. 9, p. 1750–1751, fig. 2.

June Lake basalt
Pleistocene: California.
W. C. Putman, 1940, (abs.) Geol. Soc. America Bull., v. 51, no. 12, pt. 2, p. 1939.

Jungle Ridge limestone member (of Fort Creek formation)
Upper Devonian: Northwest Territories (Mackenzie) and Yukon, Canada.
G. S. Hume and T. A. Link, 1945, Canada Geol. Survey Paper 45–16, p. 30.

Juniperan stage
Eocene, early: California.
V. S. Mallory, 1953, (abs.) Jour. Paleontology, v. 27, no. 6, p. 903.

Juniperian stage
See Juniperan stage.

Junipero sandstone
Eocene: California.
R. R. Thorup, 1941, (abs.) Geol. Soc. America Bull., v. 52, no. 12, pt. 2, p. 1958; 1943, Calif. Dept. Nat. Res., Div. Mines Bull. 118, pt. 3, p. 463–465.

Jupiter shales
Precambrian (Chuaran) : Arizona.
Charles Keyes, 1938, Pan-Am. Geologist, v. 70, no. 2, p. 107, 112.

Jutiapa rhyolitic tuffs and sediments
Pliocene(?) : Honduras.
R. H. Carpenter, 1954, Geol. Soc. America Bull., v. 65, no. 1, p. 29.

Kaaterskillian series
Devonian (Devonic) : Missouri.
[C. R.] Keyes, 1941, Pan-Am. Geologist, v. 75, no. 4, p. 311.

Kaau mud flow
Quaternary: Hawaiian Islands (Oahu).
H. T. Stearns, 1940, Hawaii Div. Hydrography Bull. 5, p. 51–52.

Kagman andesite
See **Hagman formation.**

Kahochella formation
Precambrian (Proterozoic): Northwest Territories (Mackenzie), Canada.
C. H. Stockwell, 1936, Canada Geol. Survey Map 377A.

Kahuku volcanic series
Pleistocene: Hawaiian Islands (Hawaii).
H. T. Stearns and G. A. Macdonald, 1946, Hawaii Div. Hydrography Bull. 9, p. 68–71.

Kaipokok gneiss
Precambrian: Nowfoundland (Labrador), Canada.
E. H. Kranck, 1953, Canada Geol. Survey Bull. 26, p. 37.

Kakarsuak porphyrite
Devonian(?): Southwest Greenland.
N. V. Ussing, 1911, Meddel. om Grønland, hefte 38, p. 101.

Kalaupapa basalt
Pleistocene(?): Hawaiian Islands (Molokai).
H. T. Stearns, 1946, Hawaii Div. Hydrography Bull. 8, p. 73, fig. 18.

Kameset (Gamusetsu) agglomerate
Eocene: Caroline Island (Babelthaup).
Risaburo Tayama, 1939, Brief report on the geology and ore resources of Babelthaup Island (Palau Island proper): Tropical Industry Inst., Palau South Sea Islands, Bull. 3 [Engish translation in library of U. S. Geol. Survey, p. 15, 18]; 1952, Coral reefs in the South Seas: Japan Hydrog. Office Bull., v. 11, p. 64, table 4 [English translation in library of U. S. Geol. Survey, p. 75–76].

Kanab Canyon member (of Muav formation)
Lower and/or Middle Cambrian: Arizona.
E. D. McKee, 1945, Carnegie Inst. Washington Pub. 563, p. 14, 29, 102–105.

Kanapou volcanic series
Pliocene(?): Hawaiian Islands (Kahoolawe).
H. T. Stearns, 1946, Hawaii Div. Hydrography Bull. 8, p. 63, fig. 16.

Kanawha volcanic zone (of Eagleford formation)
Cretaceous: Texas.
R. T. Hazzard, 1939, Shreveport Geol. Soc. Guidebook 14th Ann. Field Trip, p. 138–140.

Kangamiut diabases
Precambrian: Southwest Greenland.
Hans Ramberg, 1948, Meddel. Dansk Geol. Foren., bind 11, hefte 3, p. 315–319..

Kangamiut gneiss complex
Precambrian: Southwest Greenland.
Hans Ramberg, 1948, Meddel. Dansk Geol. Foren., bind 11, hefte 3, p. 313, 315–319, fig. 1.

Kangerdlugssuaq complex
Tertiary: Southeast Greenland.
L. R. Wager and W. A. Deer *in* L. R. Wager, 1937, Geog. Jour. v. 90, no. 5, p. 416.
L. R. Wager, 1947, Meddel. om Grønland, bind 134, nr. 5, p. 41–44, 46, pl. 6.

Kangerdlugsuak series
Upper Cretaceous(?): Southeast Greenland.
L. R. Wager, 1934, Meddel. om Grønland, bind 105, nr. 2, p. 25–27.

Kaniapiskau series
Precambrian (Proterozoic): Newfoundland (Labrador), Canada.
Carl Faessler, 1948, Le Naturaliste Canadien, v. 75, nos. 1–2, p. 16–17.

Kanosh shale
Lower Ordovician (Chazyan): Utah and Nevada.
L. F. Hintze, 1951, Utah Geol. Mineralog. Survey Bull. 39, p. 18–19.

Kapaula basaltic andesite
Pleistocene(?): Hawaiian Islands (Maui).
G. A. Macdonald *in* H. T. Stearns and G. A. Macdonald, 1942, Hawaii Div. Hydrography Bull. 7, p. 230, 244–246.

Kap Biot formation
See Cape Biot formation.

Kap Bull series
Devonian: Northeast Greenland.
Heinrich Butler, 1935, Naturf. Gesell, Schaffhausen, Mitt., Heft 12, p. 26–29, fig. 4.

Kap Calhoun formation
See Cape Calhoun series.

Kap Clay formation
See Cape Clay formation.

Kap Dalton series
See Cape Dalton formation.

Kap Edvard Holm complex
See Cape Edward Holm complex.

Kap Fletcher series
See Cape Fletcher series.

Kap Franklin conglomerate
Devonian: Northeast Greenland.
Wolf Mayne, 1940, Meddel. om Grønland, bind 114, nr. 5, p. 10, 11; 1949, bind 114, nr. 2, p. 17, 53, 61.

Kap Franklin–Vildtal granite
Middle Devonian: Northeast Greenland.
Heinrich Butler, 1954, Meddel. om Grønland, bind 116, nr. 7, p. 69–71.

Kap Frederick VII formation
See Cape Frederick VII formation.

Kap Graah series
See Cape Graah formation.

Kap Gustav Holm series
Upper Cretaceous: Southeast Greenland.
L. R. Wager, 1934, Meddel. om Grønland, bind 105, nr. 2, p. 22–25.

Kap Holbaek sandstone
Cambrian or Ordovician (pre-upper Canadian, post-upper Precambrian): North Greenland.
P. J. Adams and J. W. Cowie, 1953, Meddel. om Grønland, bind 111, nr. 7, p. 9, 12.

Kap Kent formation
See Cape Kent formation.

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Kap Kolthoff series
Devonian: Northeast Greenland.
Heinrich Butler, 1935, Naturf. Gesell. Schaffhausen, Mitt., Heft 12, p. 26–29, fig. 4.

Kap Oswald formation
See Cape Oswald formation.

Kap Parry complex
See Cape Parry alkaline complex.

Kap Schuchert formation
See Cape Schuchert formation.

Kap Simpson complex
Tertiary: Northeast Greenland.
H. B. Schaub *in* Wolf Mayne and others, 1938, Meddel. om Grønland, bind 114, nr. 1, p. 32, 40–44, fig. 1.

Kap Stosch formation
See Cape Stosch formation.

Kap Tyson formation
See Cape Tyson formation.

Kapukapu tuff
[Quaternary]: Hawaiian Islands (Hawaii).
C. K. Wentworth, 1938, Hawaiian Volcano Observatory 3d Special Rept., p. 36.

Kapur limestone
Oligocene: Trinidad, British West Indies.
J. A. Cushman and H. H. Renz, 1947, Cushman Lab. Foram. Research Special Pub. 22, p. 1.
R. M. Stainforth, 1948, Am. Assoc. Petroleum Geologists Bull., v. 22, no. 7, p. 1312.

Kapur Ridge limestone.
See Kapur limestone.

Kap Weber formation
See Cape Weber formation.

Kap Webster formation
See Cape Webster formation.

Kap Wood formation
See Cape Wood formation.

Karamat formation
Oligocene: Trinidad, British West Indies.
J. A. Cushman and H. H. Renz, 1947, Cushman Lab. Foram. Research Special Pub. 22, p. 1.
H. G. Kugler, 1950, Asociación Venezolano de Geología, Minería y Petróleo Bol., tomo 2, no. 1, p. 48 (correlation chart), 70.

Kashabowie series
Precambrian: Ontario, Canada.
H. S. Perdue, 1938, Jour. Geology, v. 46, no. 6, p. 844, 845 (fig. 1).

Kaskaskia sequence
Devonian (Chautauquan) to Mississippian (Osagean): Central and western United States.
L. L. Sloss, W. C. Krumbein, and E. C. Dapples *in* C. R. Longwell, chm., 1949, Geol. Soc. America Mem. 39, p. 110–111, 115.

Kaskawulsh group
Carboniferous or Permian: Yukon, Canada.
E. D. Kindle, 1953, Canada Geol. Survey Mem. 268, p. 29–31.

Kassler sandstone member (of South Platte formation)
Lower Cretaceous: Colorado.
K. M. Waagé, 1955, U. S. Geol. Survey Prof. Paper 274–B, p. 31.

Kastasakau complex
Precambrian: Quebec, Canada.
J. M. Neilson, 1950, Quebec Dept. Mines Prelim. Rept. 238, p. 4.

Kasuteshio limestone
See Kasutesyo limestone.

Kasutesyo limestone
Oligocene [Aquitanian]: Mariana Islands (Tinian).
Risaburo Tayama, 1939, Correlation of the strata of the South Sea Islands: Geol. Soc. Japan Jour., v. 46, no. 549, p. 346 (correlation table) [English translation in library of U. S. Geol. Survey]; 1952, Coral reefs in the South Seas: Japan Hydrog. Office Bull., v. 11, p. 52, table 4 [English translation in library of U. S. Geol. Survey, p. 62].

Kate Peak formation
Miocene, upper, or Pliocene: Nevada.
V. P. Gianella, 1936, Nev. Univ. Bull., v. 30, no. 9, p. 68–73.

Katherine group
Cambrian and/or older: Northwest Territories (Mackenzie) and Yukon, Canada.
J. S. Stewart, 1944, Canadian Inst. Mining and Metallurgy Trans., v. 47, p. 163.
G. S. Hume and T. A. Link, 1945, Canada Geol. Survey Paper 45–16, p. 7.

Kau volcanic series
Pleistocene, upper(?) and Recent: Hawaiian Islands (Hawaii).
H. T. Stearns and G. A. Macdonald, 1946, Hawaii Div. Hydrography Bull. 9, p. 76–78.

Kauai lavas
Age not stated: Hawaiian Islands (Kauai).
N. E. A. Hinds, 1930, Bernice P. Bishop Mus. Bull. 71, p. 56–58.

Kauffman member (of Mercersburg formation)
Middle Ordovician (Trentonian): Pennsylvania.
L. C. Craig, 1949, Geol. Soc. America Bull., v. 60, no. 4, p. 715 (fig. 1), 734–738.

Kaumajet volcanic series
Precambrian: Newfoundland (Labrador), Canada.
N. E. Odell, 1938, Am. Geog. Soc. Special Pub. 22, p. 202.

Kaupo mud flow
Pleistocene: Hawaiian Islands (Maui).
H. T. Stearns *in* H. T. Stearns and G. A. Macdonald, 1942, Hawaii Div. Hydrography Bull. 7, p. 107–108.

Kaweah series
Triassic(?): California.
Cordell Durrell, 1940, Calif. Univ. Dept. Geol. Sci. Bull., v. 25, no. 1, p. 13, 116.

Kawvian series (epoch)
Upper Pennsylvanian: North America.
R. C. Moore and M. L. Thompson, 1949, Am. Assoc. Petroleum Geologists Bull., v. 33, no. 3, p. 288–289, 297–300.

Kayrand quartz gabbro
Precambrian (Archean): Quebec, Canada.
W. W. Weber, 1951, Quebec Dept. Mines Prelim. Rept. 255, map; Prelim. Rept. 257, p. 2, 7, map.

Kaycee formation
Recent: Wyoming.
L. B. Leopold and J. P. Miller, 1954, U. S. Geol. Survey Water-Supply Paper 1261, p. 10–11.

Keanae basalt
Pleistocene(?): Hawaiian Islands (Maui).
H. T. Stearns *in* H. T. Stearns and G. A. Macdonald, 1942, Hawaii Div. Hydrography Bull. 7, p. 95, 96.

Keanakakoi formation
Recent: Hawaiian Islands (Hawaii).
C. K. Wentworth, 1938, Hawaiian Volcano Observatory 3d Special Rept. p. 37, 92–102.

Kearny formation
Pennsylvanian (Morrow): Kansas (subsurface).
M. L. Thompson, 1944, Kans. State Geol. Survey Bull. 52, pt. 7, p. 414–417.

Kedahda formation
Permian: British Columbia, Canada.
K. D. Watson and W. H. Matthews, 1944, British Columbia Dept. Mines Bull. 19, p. 15.

Keel limestone member (of Chimneyhill formation).
Lower Silurian: Oklahoma.
R. A. Maxwell, 1936, Northwestern Univ. Summaries of Doctoral Dissert., v. 4, p. 132, 133.

Keepings gneiss
Pre-Devonian: Newfoundland, Canada.
J. R. Cooper, 1954, Canada Geol. Survey Mem. 276, p. 8–9.

Kee Scarp limestone member (of Fort Creek formation)
Upper Devonian: Northwest Territories (Mackenzie) and Yukon, Canada.
G. S. Hume and T. A. Link, 1945, Canada Geol. Survey Paper 45–16, p. 30.

Keg River formation
Devonian: Alberta, Canada (subsurface).
J. Law, 1955, Alberta Soc. Petroleum Geologists Jour., v. 3, no. 6, p. 83.

Keith Knob facies (of New Providence formation)
Lower Mississippian: Kentucky.
P. B. Stockdale, 1939, Geol. Soc. America Special Paper 22, p. 112–114.

Kekekabic tuffs, agglomerates, slates, and andesite porphyry
Precambrian (Knife Lake): Minnesota.
J. W. Gruner, 1941, Geol. Soc. America Bull., v. 52, no. 10, p. 1583, 1606–1608.

Kekekabic Lake tuffs, agglomerates, slates, and andesite porphyry
See Kekekabic tuffs, agglomerates, slates, and andesite porphyry.

Keller group
Pennsylvanian (Virgil): New Mexico.
M. L. Thompson, 1942, N. Mex. State Bur. Mines Min. Res. Bull. 17, p. 27, 69–72.

Kellogg shale
Eocene, upper: California.
B. L. Clark and A. S. Campbell, 1942, Geol. Soc. America Special Paper 39, p. 5–9.

Kelly formation
Pennsylvanian: Utah.
H. J. Bissell, 1936, Iowa Acad. Sci. Proc., v. 43, p. 239–241.

Kelso shale
Lower Cambrian: California.
J. C. Hazzard, 1938, (abs.) Geol. Soc. America Proc. 1937, p. 241.

Kelvin Glen group
Middle Cambrian: Nova Scotia, Canada.
L. J. Weeks, 1954, Canada Geol. Survey Mem. 277, p. 53–55.

Kenilworth member (of Blackhawk formation)
Upper Cretaceous: Utah.
R. G. Young, 1955, Geol. Soc. America Bull., v. 66, no. 2, p. 183, 184–185.

Kennebec volcanics
Precambrian: Ontario, Canada.
W. D. Harding, 1944, Ontario Dept. Mines Ann. Rept., v. 51, pt. 4, p. 59.

Kennebecasis formation or series
Lower Carboniferous: New Brunswick, Canada.
A. O. Hayes and B. F. Howell, 1937, Geol. Soc. America Special Paper 5, p. 107–108.

Kennebecasis granite
Pre-Carboniferous: New Brunswick, Canada.
A. O. Hayes and B. F. Howell, 1937, Geol. Soc. America Special Paper 5, p. 39.

Kenoran volcanics
Precambrian: Ontario, Canada.
F. J. Pettijohn, 1937, Geol. Soc. America Bull., v. 48, no. 2, p. 187, 190.

Kensington granite-gneiss
Age unknown: Maryland.
Ernst Cloos *in* C. W. Cooke and Ernst Cloos, 1951, Geologic map of Prince Georges County and the District of Columbia (1 : 62,500) : Md. State Dept. Geology, Mines, and Water Res.

Kensington syenite
Precambrian: Quebec, Canada.
Edgar Aubert de la Rüe, 1953, Quebec Dept. Mines Geol. Rept. 50, p. 19–21.

Kenwood River granite
Precambrian: Saskatchewan, Canada.
A. R. Byers, 1949, Saskatchewan Geol. Survey (Precambrian Geology Ser.) Rept. 1, p. 14.

Kenyon member (of Mt. Simon formation)
Upper Cambrian: Illinois (subsurface).
J. S. Templeton, Jr., 1950, Ill. Acad. Sci. Trans., v. 43, p. 154–155.

Kerr Ranch schist
Pre-Devonian: California.
G. A. Manning and B. A. Ogle, 1950, Calif. Dept. Nat. Res., Div. Mines Bull. 148, p. 13–18, pl. 1.

Ketilidian period
Precambrian: Southwest Greenland.
C. E. Wegmann, 1938, Meddel. om Grønland, bind 113, nr. 2, p. 13.

Kettle Point black shale
Upper Devonian (Senecan-Chautauquan): Ontario, Canada.
W. E. Logan, 1863, Canada Geol. Survey Progress Rept. to 1863, p. 387.
G. A. Cooper and others, 1942, Geol. Soc. America Bull., v. 53, no. 12, pt. 1, p. 1769, Chart 4.

Kewagama group
Precambrian: Quebec, Canada.
H. C. Gunning and J. W. Ambrose, 1937, Canadian Inst. Mining and Metallurgy Trans., v. 40, p. 344.

Keweenaw Point volcanic series
Precambrian (middle Keweenawan): Minnesota.
R. M. Grogan, 1946, (abs.) Geol. Soc. America Bull., v. 57, no. 12, pt. 2, p. 1198.

Kickapoo Creek group
Pennsylvanian (Lampasas): Texas.
M. G. Cheney, 1947, Jour. Geology, v. 55, no. 3, p. 209–210.

Kiekie volcanic series
Pleistocene: Hawaiian Islands (Niihau).
H. T. Stearns, 1946, Hawaii Div. Hydrography Bull. 8, p. 91.

Kii Point limestone
[Quaternary]: Hawaiian Islands (Oahu).
C. K. Wentworth and J. E. Hoffmeister, 1939, Geol. Soc. America Bull., v. 50, no. 10, p. 1560–1561.

Kilbeck granite gneiss
Precambrian (Archean): California.
J. C. Hazzard and E. F. Dosch, 1937, (abs.) Geol. Soc. America Proc. 1936, p. 309.

Kilea volcanics
Pleistocene(?): Hawaiian Islands (Maui).
H. T. Stearns *in* H. T. Stearns and G. A. Macdonald, 1942, Hawaii Div. Hydrography Bull. 7, p. 158, 181.

Killarnean granites
Precambrian: Ontario, Canada.
T. T. Quirke, 1924, Pan-Am. Geologist, v. 42, no. 4, p. 308.
W. H. Collins, 1937, Geol. Soc. America Bull., v. 48, no. 10, p. 1445–1446, 1456.

Killbuck shale facies (of Cuyahoga formation)
Mississipian: Ohio.
F. T. Holden, 1941, Ill. Acad. Sci. Trans., v. 34, no. 2, p. 172.

Killigrews Brook formation
Middle Cambrian: Newfoundland, Canada.
L. J. Weeks, 1955, Canada Geol. Survey Map 1043A.

Killingworth leuco-tonalite
Mid-Carboniferous: Connecticut.
W. G. Foye, 1949, Conn. Geol. Nat. History Survey Bull. 74, p. 53.

Kimball formation
Pliocene: Nebraska.
A. L. Lugn, 1938, Am. Jour. Sci., 5th ser., v. 36, no. 213, p. 224, 227; 1939, Geol. Soc. America Bull., v. 50, no. 8, p. 1262–1263.

Kimball formation
Precambrian or Lower Cambrian: British Columbia, Canada.
A. H. Lang, 1938, Canada Geol. Survey Paper 38–16, p. 13.

Kindblade formation

Lower Ordovician (Arbuckle group): Oklahoma.

C. E. Decker, 1939, Geol. Soc. America Bull., v. 50, no. 7, p. 1320, table 1.

Kindle formation

Mississippian: British Columbia, Canada.

L. R. Laudon and B. J. Chronic, Jr., 1949, Am. Assoc. Petroleum Geologists Bull., v. 33, no. 2, p. 193, 210.

King City formation

Pliocene: California.

B. L. Clark, 1940, (abs.) Geol. Soc. America Bull., v. 51, no. 12, pt. 2, p. 1956–1957.

King Creek marl member (of Chappel formation)

Mississippian: Texas.

F. B. Plummer, 1950, Tex. Univ. Bur. Econ. Geology Pub. 4329, p. 26–27.

Kingdom formation

Middle Ordovician: Illinois.

J. S. Templeton and H. B. Willman, 1952, Tri-State Geol. Soc. Guidebook 16th Ann. Field Conf., figs. 3, 12.

King Edward formation

Precambrian or Paleozoic: British Columbia, Canada.

A. G. Jones, 1948, Canada Geol. Survey Paper 48–4, p. 2.

Kingman sandstone member (of Harper sandstone)

Permian: Kansas and Oklahoma.

G. H. Norton, 1937, Am. Assoc. Petroleum Geologists Bull., v. 21, no. 12, p. 1557; 1939, v. 23, no. 12, p. 1785–1786.

Kingman series

Tertiary: Arizona.

B. E. Thomas, 1949, Econ. Geology, v. 44, no. 8, p. 667–669.

King Salmon group

Upper Triassic: British Columbia, Canada.

F. A. Kerr, 1945, Canada Geol. Survey Paper (Prelim. Map) 45–30; 1948, Mem. 248, p. 20 (table), 24–25, geol. map.

Kingshill marl

Oligocene and Miocene: St. Croix, Virgin Islands.

J. F. Kemp, 1926, New York Acad. Sci., Sci. Survey of Porto Rico and the Virgin Islands, v. 4, pt. 1, p. 49 (reprinted? from J. F. Kemp, 1923, Report to H. H. Hough, Captain, U. S. N., Governor, Virgin Islands. Printed at the Naval Station, St. Thomas [not seen]).

D. J. Cederstrom, 1941, Am. Jour. Sci., v. 239, no. 8, p. 556–557.

Kingsport formation or dolomite

Lower Ordovician: Tennessee and Virginia.

John Rodgers, 1943, Geologic map of Copper Ridge district, Hancock and Grainger Counties, Tenn. (1 : 24,000) : U. S. Geol. Survey Strategic Minerals Inv. Prelim. Map.

C. R. L. Oder and H. W. Miller, 1945, Am. Inst. Min. Metall. Engineers (Mining Technology, v. 9, no. 3) Tech. Pub. 1818, p. 1, 2 (table 1).

Kingston Peak formation

Precambrian (Pahrump series): California.

D. F. Hewett, 1940, Washington Acad. Sci. Jour., v. 30, no. 6, p. 240.

Kingston Range monzonite porphyry

Upper Cretaceous or Tertiary, lower: California.

D. F. Hewett, 1948, Calif. Dept. Nat. Res., Div. Mines Bull. 129, pt. M, p. 199–200.

Kingsvale group
Lower Cretaceous (Albian) : British Columbia, Canada.
H. M. A. Rice, 1947, Canada Geol. Survey Mem. 243, p. 25–27.

Kings Valley siltstone member (of Siletz River volcanic series)
Eocene: Oregon.
H. E. Vokes, D. A. Myers, and Linn Hoover, 1954, U. S. Geol. Survey Oil and Gas Inv. Map OM 150.

Kinnison shale member (of Cherokee formation)
Pennsylvanian (Desmoinesian) : Oklahoma.
W. B. Howe, 1951, Am. Assoc. Petroleum Geologists Bull., v. 35, no. 9, p. 2087, 2092, 2093.

Kinojevis group
Precambrian (Archean) : Quebec, Canada.
G. W. H. Norman, 1944, Canada Geol. Survey Paper 44–9, p. 2 (Prelim. Map 44–9A).

Kipahulu formation
Pleistocene(?) : Hawaiian Islands (Maui).
H. T. Stearns *in* H. T. Stearns and G. A. Macdonald, 1942, Hawaii Div. Hydrography Bull. 7, p. 91–94.

Kippens formation
Cambrian: Newfoundland, Canada.
T. N. Walthier, 1949, Newfoundland Geol. Survey Bull. 35, pt. 1, p. 70–73.

Kirby Lake dolomite
Permian (Leonard) : Texas.
Gayle Scott and others, 1941, W. Tex. Geol. Soc. [Guidebook] Spring Field Trip, May 10–11, correction sheet.
V. C. Perini, Jr., and J. R. Day, 1946, Abilene Geol. Soc. [Guidebook] November Field Trip, p. 5, 26.

Kirkman limestone
Permian: Utah.
A. A. Baker and J. S. Williams, 1940, Am. Assoc. Petroleum Geologists Bull., v. 24, no. 4, p. 625–626.

Kirschberg evaporite (in Edwards limestone)
Cretaceous: Texas.
V. E. Barnes, 1946, Tex. Univ. Bur. Econ. Geology Pub. 4301, p. 40–43 [1944].

Kitchigama granite
Precambrian (post-Keewatin) : Quebec, Canada.
W. W. Longley, 1943, Quebec Dept. Mines Geol. Rept. 12, p. 19–20.

Kite group
Lower Devonian: Oklahoma.
R. A. Maxwell, 1936, Northwestern Univ. Summaries of Doctoral Dissert., v. 4, p. 132, 134.

Kline member (of Nesson formation)
Jurassic: Subsurface in North Dakota and Montana, and Manitoba, Canada.
J. W. Nordquist, 1955, Billings Geol. Soc. Guidebook 6th Ann. Field Conf., p. 104, 105–106, fig. 2.

Klitdal formation
Permo-Triassic(?) : East Greenland.
Alfred Rosenkrantz *in* Lauge Koch, 1929, Meddel. om Grønland, bind 73, afd. 2, nr. 1, p. 140–142.

Kløft I formation

Upper Jurassic (Oxfordian-Kimmeridgian) : Northeast Greenland.

Lauge Koch, 1929, Meddel. om Grønland, bind 73, afd. 2, nr. 2, p. 254–255.

Kluane schists

Cambrian(?) : Yukon, Canada.

R. G. McConnell, 1905, Canada Geol. Survey Summary Rept. 1904, p. 4–6, map 894.

Kluane silt

Recent: Yukon, Canada.

C. S. Denny, 1952, Geol. Soc. America Bull., v. 63, no. 9, p. 920, table 4.

Kneehills tuff

Upper Cretaceous: Alberta, Canada.

J. O. G. Sanderson, 1931, Royal Soc. Canada Trans., ser. 3, v. 25, sec. 4, p. 65–66.

Kneeling Nun rhyolite tuff

Tertiary, upper: New Mexico.

F. J. Kuellmer and others, 1953, *in* N. Mex. Geol. Soc. Guidebook 4th Field Conf., p. 42 (map), 50 (map), 57.

H. L. Jicha, Jr., 1954, N. Mex. State Bur. Mines Min. Res. Bull. 37, p. 39, 44–45.

Knickerbocker andesite

Pliocene, upper, or Pleistocene: Nevada.

V. P. Gianella, 1936, Nev. Univ. Bull., v. 30, no. 9, p. 73–76.

Knifeton cyclothem or formation

Pennsylvanian (Des Moines) : Kansas.

G. E. Abernathy, 1937, Kans. Geol. Soc. Guidebook 11th Ann. Field Conf., p. 18, 20, 22; 1938, Kans. Acad. Sci. Trans., v. 41, p. 193, 196.

Knip beds

Cretaceous(?) : Curaçao, Netherlands West Indies.

G. J. H. Molengraaff, 1929, Geologie en geohydrologie van het Eiland Curaçao: Delft, J. Waltman, Jr., p. 3–5, 15–22, 53–54.

Knob Hill andesite

Eocene: Washington.

L. B. Wright, 1947, Am. Inst. Mining and Metall. Engineers Tech. Pub. 2197, p. 5.

Knob Lake group

Precambrian (Proterozoic) : Quebec and Newfoundland (Labrador), Canada.

J. M. Harrison, 1952, Canada Geol. Survey Paper 52–20, p. 7.

Knoxville member (of Pascagoula formation)

Miocene: Mississippi.

1940, Miss. Geol. Soc. [Guidebook 1] Field Trip, Feb. 10–11, p. 4.

G. F. Brown and W. F. Guyton, 1943, Miss. State Geol. Survey Bull. 56, p. 22, 26, 31.

Knudshoved beds

Upper Cretaceous (Senonian) : Northeast Greenland.

Wolf Mayne, 1949, Meddel. om Grønland, bind 133, nr. 3, p. 144, 211–217, 281.

Kobau group

Carboniferous(?) : British Columbia, Canada.

H. S. Bostock, 1940, Canada Geol. Survey Map 341A.

Koch Fjaeld formation

Upper Jurassic (Kimmeridgian) : East Greenland.

Alfred Rosenkrantz *in* Lauge Koch, 1929, Meddel. om Grønland, bind 73, afd. 2, nr. 1, p. 147.

Koehler limestone
Middle Devonian: Michigan.
W. A. Kelly and G. W. Smith, 1947, Am. Assoc. Petroleum Geologists Bull., v. 31, no. 3, p. 454–455.

Kogosukruk tongue (of Prince Creek formation)
Upper Cretaceous: Alaska.
George Gryc, W. W. Patton, Jr., and T. G. Payne, 1951, Washington Acad. Sci. Jour., v. 41, no. 5, p. 166–167.

Kokernot formation
Quaternary: Texas.
C. C. Albritton, Jr., and Kirk Bryan, 1938, (abs.) Geol. Soc. America Bull., v. 49, no. 12, pt. 2, p. 1863; 1939, v. 50, no. 9, p. 1441–1442.

Koksoak series
Precambrian: Quebec, Canada.
M. E. Wilson, 1939, Geologie der Erde, North America, v. 1, p. 279.

Kolekole volcanics
Pleistocene(?): Hawaiian Islands (Oahu).
H. T. Stearns, 1946, Hawaii Div. Hydrography Bull. 8, p. 77.

Koloa volcanic series
Pleistocene and Recent: Hawaiian Islands (Kauai).
N. E. A. Hinds, 1930, Bernice P. Bishop Mus. Bull. 71, p. 58–59.
H. T. Stearns, 1946, Hawaii Div. Hydrography Bull. 8, p. 85, 87–89.

Kolosh member (of Kialaguik formation)
Lower Jurassic: Alaska.
L. B. Kellum, 1945, N. Y. Acad. Sci. Trans., ser. 2, v. 7, no. 8, p. 203.

Kome beds
Lower Cretaceous (Urgonian): Northwest Greenland.
Oswald Heer, 1883, Meddel. om Grønland, hefte 5, pt. 3, p. 83, 84–92; pt. 5, p. 226–227.
Lauge Koch, 1929, Meddel. om Grønland, bind 73, afd. 2, nr. 2, p. 258–262.

Kona tuff formation
Pleistocene, upper(?), and Recent: Hawaiian Islands (Hawaii).
C. K. Wentworth, 1938, Hawaiian Volcano Observatory 3d Special Rept., p. 90–91, 172.

Konocti volcanics
Quaternary: California.
J. C. Brice, 1953, Calif. Dept. Nat. Res., Div. Mines Bull. 166, p. 12, pl. 7.

Kosk member (of Modin formation)
Upper Triassic: California.
A. F. Sanborn, [1953], Stanford Univ. Abs. Dissert., v. 27, p. 436.

Kotaneelee formation
Upper Cretaceous: British Columbia, Yukon, and Northwest Territories (Mackenzie), Canada.
C. O. Hage, 1945, Canada Geol. Survey Paper 45–22, p. 21–23.

Kramer Lake beds (in Ricardo formation)
Miocene, upper: California.
H. S. Gale, 1946, Calif. Jour. Mines and Geology, v. 42, no. 4, p. 326.

Krebs group
Pennsylvanian (Des Moines age): Oklahoma.
M. C. Oakes, 1953, Am. Assoc. Petroleum Geologists Bull., v. 37, no. 6, p. 1523–1524, 1525–1526.

Krist fragmental [unit]
Precambrian: Ontario Canada.
B. S. W. Buffam, 1948, *in* Structural geology of Canadian ore deposits: Canadian Inst. Mining and Metallurgy, p. 458.
E. S. Moore, 1953, Royal Soc. Canada Trans., ser. 3, v. 47, sec. 4, p. 41, 46.

Kříž lens (in Hueco formation)
Permian (Wolfcampian): Texas.
C. O. Dunbar, 1953, Am. Jour. Sci. v. 251, no. 11, p. 802–804, figs. 1, 2.

Kruger Mountain malignite
Mesozoic: Washington.
A. C. Waters and Konrad Krauskopf, 1941, Geol. Soc. America Bull., v. 52, no. 9, pl. 1.

Kuhiwa basaltic andesite
Pleistocene(?): Hawaiian Islands (Maui).
G. A. Macdonald *in* H. T. Stearns and G. A. Macdonald, 1942, Hawaii Div. Hydrography Bull. 7, p. 230, 249–251.

Kuhn beds
Upper Jurassic (upper Kimmeridgian): Northeast Greenland.
Wolf Mayne, 1947, Meddel. om Grønland, bind 132, nr. 2, p. 38–43, 119, 131–132, pl. 6.

Kuhnpas facies
Lower Cretaceous (Valanginian): Northeast Greenland.
Andreas Vischer, 1943, Meddel. om Grønland, bind 133, nr. 1, p. 87–91, pl. 2.

Kula volcanic series
Tertiary, upper(?): Hawaiian Islands (Maui).
H. T. Stearns *in* H. T. Stearns and G. A. Macdonald, 1942, Hawaii Div. Hyrography Bull. 7, p. 65, 74–90.

Kungnat granite
Precambrian: Southwest Greenland.
C. E. Wegmann, 1938, Meddel. om Grønland, bind 113, nr. 2, p. 94–98.

Kure sandstone
Pleistocene: North Carolina.
B. W. Wells, 1944, Elisha Mitchell Sci. Soc. Jour., v. 60, no. 2, p. 129–130.

Kuskokwim group
Lower(?) and Upper Cretaceous: Alaska.
W. M. Cady and others, 1955, U. S. Geol. Survey Prof. Paper 268, p. 35–47.

Kwaguntan series
Precambrian: Arizona.
Charles Keyes, 1938, Pan-Am. Geologist, v. 70, no. 2, p. 107, 109.

Laberdie cyclothem (including Laberdie limestone)
Pennsylvanian (Des Moines): Kansas, Missouri, Nebraska, and Oklahoma.
J. M. Jewett, 1941, Kans. State Geol. Survey Bull. 38, pt. 11, p. 320–321; 1945, Bull. 58, p. 34–35, 63, 65.

La Boca marine member (of Panama formation)
Miocene, lower: Panama Canal Zone.
[T. F. Thomson], 1943, Panama Canal, Special Eng. Div., 3d Locks Proj., pt. 2, chap. 3, p. 16–17.
W. P. Woodring and T. F. Thompson, 1949, Am. Assoc. Petroleum Geologists Bull., v. 33, no. 2, p. 241–242.

Labrador series
Lower Cambrian: Newfoundland.
Charles Schuchert and C. O. Dunbar, 1934, Geol. Soc. America Mem. 1, p. 16, 17–20.

Labradoran system
Labradorian
See Labrador series .

La Brea formation
Miocene, upper: Trinidad, British West Indies.
E. H. Cunningham-Craig, 1906, Trinidad Legislative Council Paper no. 30 of 1906, p. 4; 1907, Paper no. 60 of 1907, p. 9.
H. G. Kugler, 1953, Vereinigung Schweizer Petroleum Geologen u. Ingenieure Bull., v. 20, no. 59, p. 55.

Labyrinth Lake granite
Precambrian: Quebec, Canada.
H. C. Cooke, W. F. James, and J. B. Mawdsley, 1931, Canada Geol. Survey Mem. 166, p. 129.

La Caja formation
Upper Jurassic: Coahuila and Zacatecas, Mexico.
R. W. Imlay, 1938, Geol. Soc. America Bull., v. 49, no. 11, p. 1659–1662.

La Casita formation
Upper Jurassic: Coahuila, Mexico.
R. W. Imlay, 1936, Geol. Soc. America Bull., v. 47, no. 7, p. 1110.

Lacey member (of Mt. Simon formation)
Upper Cambrian: Illinois (subsurface).
J. S. Templeton, Jr. 1950, Ill. Acad. Sci. Trans., v. 43, p. 155.

Lachine formation
Ordovician: Quebec, Canada.
T. H. Clark, 1944, Royal Soc. Canada Trans., sec. 4, v. 38, p. 29; 1952, Quebec Dept. Mines Geol. Rept. 46, p. 77–80.

Lachute beds
Cambrian and Ordovician: Quebec, Canada.
A. W. Grabau, 1936, Paleozoic formations in the light of the pulsation theory, v. 2, Cambrovician pulsation, pt. 1, Caledonian and St. Lawrence geosynclines: Peiping, China, University Press, Natl. Univ. Peking, p. 424, 425.

Lacomb gravels
Pleistocene: Oregon.
I. S. Allison, 1953, Oreg. Dept. Geology and Mineral Industries Bull. 37, p. 9.

LaCorne hornblende-granodiorite
Precambrian: Quebec, Canada.
W. C. Gussow, 1937, Royal Soc. Canada Trans., ser. 3, v. 31, sec. 4, p. 150.

Lacorocah meta-andesite tuff member (of Greenstone complex)
Precambrian: New Mexico.
Parry Reiche, 1949, Geol. Soc. America Bull., v. 60, no. 7, p. 1186, 1188.

La Crête formation
See Crête formation.

La Cruz Peak formation
Upper Cretaceous: New Mexico.
W. H. Tonking, [1954?], Geologic map and sections of the Puertecito quadrangle, New Mexico (1:48,000): N. Mex. Bur. Mines Min. Res. [preprint?] Bull. 41, pl. 1.

Ladd formation
Upper Cretaceous: California.
W. P. Popenoe, 1937, Jour. Paleontology, v. 11, no. 5, p. 380.

La Fé limestones
Upper Cretaceous (Santonian or Campanian): Cuba.
J. F. de Albear, 1947, Am. Assoc. Petroleum Geologists Bull., v. 31, no. 1, p. 76–77.

La Gloria formation
Upper Jurassic: Coahuila, Mexico.
R. W. Imlay, 1936, Geol. Soc. America Bull., v. 47, no. 7, p. 1105–1110.

Lagoon Navête group
Eocene(?): Trinidad, British West Indies.
E. H. Cunningham-Craig, 1905, Trinidad Legislative Council Paper no. 25 of 1905, p. 7, 8.

Lagoon Palmiste group
Eocene(?): Trinidad, British West Indies.
E. H. Cunningham-Craig, 1905, Trinidad Legislative Council Paper no. 25 of 1905, p. 7, 8.

La Grulla granodiorite
Cretaceous: Baja California, Mexico.
A. O. Woodford and T. F. Harriss, 1938, Geol. Soc. America Bull., v. 49, no. 9, p. 1316–1317.

Laguna series
Precambrian (Archaen): Manitoba, Canada.
J. E. Armstrong, 1941, Canada Geol. Survey Map 665A.

Laguna Seca formation
Paleocene and Eocene: California.
M. B. Payne, 1951, Calif. Dept. Nat. Res., Div. Mines Special Rept. 9, p. 11–13.

Lahaina volcanic series
Pleistocene or Recent(?): Hawaiian Islands (Maui).
H. T. Stearns *in* H. T. Stearns and G. A. Macdonald, 1942, Hawaii Div. Hygrography Bull. 7, p. 180–181.

La Huerta siltstone member (of Salado formation)
Permian: Subsurface in New Mexico and Texas.
W. B. Lang, 1942, Am. Assoc. Petroleum Geologists Bull., v. 26, no. 1, p. 68, 72–74.

Laib group
Lower Cambrian: British Columbia, Canada.
H. W. Little, 1950, Canada Geol. Survey Paper 50–19, p. 15–18.

Laina volcanics
Pleistocene or Recent(?): Hawaiian Islands (Maui).
H. T. Stearns in H. T. Stearns and G. A. Macdonald, 1942, Hawaii Div. Hygrography Bull. 7, p. 158, 180–181.

Laird sandstone
Miocene(?): California.
C. E. Weaver, 1949, Geol. Soc. America Mem. 35, p. 17 (table 3), 65–67.

La Jara member (of Datil formation)
See La Jara Peak member (of Datil formation).

La Jara Peak member (of Datil formation)
(?)Miocene, upper: New Mexico.
W. H. Tonking, 1954, Dissert. Abs., v. 14, no. 2, p. 340; [1954?], Geologic map and sections of the Puertecito quadrangle, New Mexico (1 : 48,000) : N. Mex. Bur. Mines Min. Res. [preprint?] Bull. 41, pl. 1.

Lak member (of Sundance formation)
Upper Jurassic: Wyoming and South Dakota.
R. W. Imlay, 1947, Am. Assoc. Petroleum Geologists Bull., v. 31, no. 2, p. 257–259.

Lake basalt
Pliocene(?) : California.
H. A. Powers, 1932, Am. Mineralogist, v. 17, no. 7, p. 262–264.

Lake Agnes quartz monzonite
Tertiary: Colorado.
K. A. Gorton, 1953, Wyo. Geol. Assoc. Guidebook 8th Ann. Field Conf., p. 89–90.

Lake Agnes shale lentil (of Mount Whyte formation)
Middle Cambrian: British Columbia, Canada.
C. D. Walcott, 1917, Smithsonian Misc. Coll., v. 67, no. 3, p. 93.
Franco Rasetti, 1951, Smithsonian Misc. Coll., v. 116, no. 5, p. 62–63.

Lake Branch formation
Devonian: Quebec, Canada.
H. W. McGerrigle, 1954, Quebec Dept. Mines Geol. Rept. 62, p. 45.

Lake Charles formation
Recent: Texas.
W. A. Price, 1939, (abs.) Am. Assoc. Petroleum Geologists Bull., v. 23, no. 12, p. 1875.

Lake City limestone
Eocene, middle: Florida (subsurface).
P. L. Applin and E. R. Applin, 1944, Am. Assoc. Petroleum Geologists Bull., v. 28, no. 12, p. 1680–1681, 1693–1695.

Lake Coahuila deposits
Pleistocene, upper: California.
L. A. Tarbet and W. H. Holman, 1944, (abs.) Am. Assoc. Petroleum Geologists Bull., v. 28, no. 12, p. 1782.
T. W. Dibblee, Jr., 1954, Calif. Dept. Nat. Res., Div. Mines Bull. 170, chap. 2, p. 23, 25.

Lake Crockett formation
Cretaceous (Eagle Ford) : Texas.
C. L. McNulty, Jr., 1954, Am. Assoc. Petroleum Geologists Bull., v. 38, no. 2, p. 335–337

Lake Enchantment sediments
Precambrian: Michigan.
Justin Zinn and others, 1955, Studies of stratified rocks occurring below the Huronian succession in the Marquette district, Michigan: Minn. Univ. Center for Continuation Study, Inst. of Lake Superior Geology [no pagination].

Lake Kitchigama granite
See Kitchigama granite.

Lake Mistassini group
Precambrian: Quebec, Canada.
W. G. Wahl, 1947, Quebec Dept. Mines Prelim. Rept. 211, p. 5, 7.

Lake Neosho shale member (of Altamont limestone)
Pennsylvanian (Des Moines) : Kansas, Missouri, and Nebraska.
J. M. Jewett, 1941, Kans. State Geol. Survey Bull. 38, pt. 11, p. 331–332.

Lake Robertson granite
Precambrian: Quebec, Canada.
H. C. Cooke, W. F. James, and J. B. Mawdsley, 1931, Canada Geol. Survey Mem. 166, p. 132–133.

Lake Vantage lavas
Miocene, upper: Washington.
G. F. Beck, 1936, Northwest Science, v. 10, no. 3, p. 22.

Lakeview Mountain tonalite
Cretaceous: California.
E. S. Larsen, Jr., 1948, Geol. Soc. America Mem. 29, p. 57–58.

Lake Waco formation
Cretaceous (Gulf): Texas.
W. S. Adkins and F. E. Lozo *in* F. E. Lozo, 1951, Fondren Sci. Series, no. 4, p. 120–123, fig. 25.

Lake Wolford leucogranodiorite
Cretaceous: California.
E. S. Larsen, Jr., and N. B. Keevil, 1947, Geol. Soc. America Bull., v. 58, no. 6, p. 490.
E. S. Larsen, Jr., 1948, Geol. Soc. America Mem. 29, p. 82–85.

La Laja series
Oligocene: Istmo de Tehuantepec, Mexico.
J. B. Gibson, 1936, Soc. Geol. Mexicana Bol., tomo 9, no. 5, p. 280, correlation chart.

Lambert formation
Upper Cretaceous: British Columbia, Canada.
J. L. Usher, 1952, Canada Geol. Survey Bull. 21, p. 26–27.

Lamb Point tongue (of Navajo sandstone)
Jurassic and Jurassic(?): Utah.
Paul Averitt and others, 1955, Am. Assoc. Petroleum Geologists Bull., v. 39, no. 12, p. 2521.

La Motte granite
Precambrian: Quebec, Canada.
G. W. H. Norman, 1945, Econ. Geology, v. 40, no. 1, p. 4.

LaMotte-LaCorne granite
Precambrian: Quebec, Canada.
H. C. Cooke, W. F. James, and J. B. Mawdsley, 1931, Canada Geol. Survey Mem. 166, p. 136–138.

Lampasas series
Pennsylvanian: Texas.
M. G. Cheney, 1940, Am. Assoc. Petroleum Geologists Bull., v. 24, no. 1, p. 81–82.

La Mula shales
Lower Cretaceous: Coahuila, Mexico.
R. W. Imlay, 1940, Geol. Soc. America Bull., v. 51, no. 1, p. 122, 123.

Lancha limestone (in Pacheta member of Lowell formation)
Lower Cretaceous: Arizona.
A. A. Stoyanow, 1949, Geol. Soc. America Mem. 38, p. 12.

Landrienne gabbro-peridotite complex
Precambrian (Archean): Quebec, Canada.
W. W. Weber, 1951, Quebec Dept. Mines Prelim. Rept. 255, p. 2, 3.

Landrum shale member (of Crockett formation)
Eocene, middle (Claiborne): Texas.
H. B. Stenzel, 1938, Tex. Univ. Bur. Econ. Geol. Pub. 3818, p. 20, 125, 134–148 [1939].

La Negra facies (of El Doctor limestone)
Lower Cretaceous: Queretaro, Mexico.
B. W. Wilson, J. P. Hernández M., and E. Meave T., 1955, Soc. Geol. Mexicana Bol., tomo 18, no. 1, p. 4, fig. 2.

Lanes tongue (of Ankareh formation)
Triassic: Idaho and Wyoming.
Bernhard Kummel, 1954, U. S. Geol. Survey Prof. Paper 254–H, p. 173, fig. 18.

Langdon shale
Pennsylvanian (Virgilian): Missouri, Iowa, Kansas, and Nebraska.
G. E. Condra and E. C. Reed, 1943, Nebr. Geol. Survey Bull. 14, p. 42, 43, 44.

Lansingan series
Cambrian: Minnesota, Iowa, Missouri, and Arkansas.
[C. R.] Keyes, 1941, Pan-Am. Geologist, v. 75, no. 1, p. 74–76.

Lantern marl (in Chaudiere shale)
Upper Cretaceous: Trinidad, British West Indies.
J. A. Cushman and H. H. Renz, 1947, Cushman Lab. Foram. Research Contr., v. 23, pt. 2, p. 32.

Lantz Mills facies (of Edinburg formation)
Middle Ordovician: Virginia.
B. N. Cooper and G. A. Cooper, 1946, Geol. Soc. America Bull., v. 57, no. 1, p. 78.

La Pause syenites
Precambrian: Quebec, Canada.
H. C. Cooke, W. F. James, and J. B. Mawdsley, 1931, Canada Geol. Survey Mem. 166, p. 117.

La Peña formation
Lower Cretaceous: Coahuila, Mexico.
R. W. Imlay, 1936, Geol. Soc. America Bull., v. 47, no. 7, p. 1119–1124.

La Perla shale member (of Yegua formation)
Eocene (Claiborne): Texas, and Tamaulipas, Mexico.
J. M. Patterson, 1942, Am. Assoc. Petroleum Geologists Bull., v. 26, no. 2, p. 259 (fig. 2), 264.

La Poile group
Devonian: Newfoundland, Canada.
J. R. Cooper, 1954, Canada Geol. Survey Mem. 276, p. 15–18.

Laporte group
Precambrian (Proterozoic): Quebec, Canada.
W. F. Fahrig, 1951, Canada Geol. Survey Paper (Prelim. Map) 51–23.

La Providencia granite
Cretaceous: Baja California, Mexico.
A. O. Woodford and T. F. Harriss, 1938, Geol. Soc. America Bull., v. 49, no. 9, p. 1317–1318.

Lar quartz diorite
Pre-Cretaceous(?): California.
G. J. Neuerburg, 1953, Calif. Dept. Nat. Res., Div. Mines Special Rept. 33, p. 7 (table 1), 11–12, pl. 1.

Laredo formation
Eocene, middle: Texas.
Julia Gardner, 1938, Washington Acad. Sci. Jour., v. 28, no. 7, p. 297–298.

La Reine granite
Precambrian: Quebec, Canada.
H. C. Cooke, W. F. James, and J. B. Mawdsley, 1931, Canada Geol. Survey Mem. 166, p. 131–132.

Large Island beds (of Romaine formation)
Ordovician (Beekmantown): Quebec, Canada.
A. W. Grabau, 1936, Paleozoic formations in the light of the pulsation theory, v. 2, Cambrovician pulsation, pt. 1, Caledonian and St. Lawrence geosynclines: Peiping, China, University Press, Natl. Univ. Peking, p. 522.

Larkin formation
Precambrian or Paleozoic: British Columbia, Canada.
A. G. Jones, 1948, Canada Geol. Survey Paper 48–4, p. 2.

La Ronge group
Precambrian: Saskatchewan, Canada.
J. B. Mawdsley and F. F. Grout, 1951, Saskatchewan Dept. Nat. Res. Rept. 4, p. 8.

Larrabee member (of Glens Falls formation)
Middle Ordovician (Mohawkian): Vermont and New York.
G. M. Kay, 1937, Geol. Soc. America Bull., v. 48, no. 2, p. 262–263.

Larry sandstone member (of Gething formation)
Lower Cretaceous: British Columbia, Canada.
F. H. McLearn and E. J. W. Irish, 1944, Canada Geol. Survey Paper 44–15, p. 8.

Lasca formation
Cretaceous: Texas.
R. M. Huffington, 1947, Harvard Univ. Summaries of Theses, 1943–45, p. 196.

Las Colorados conglomerates
Oligocene, middle: Dominican Republic.
P. J. Bermudez, 1949, Cushman Lab. Foram. Research Special Pub. 25, p. 23.

Las Cortinas formation
Cretaceous: Coahuila, Mexico.
W. E. Humphrey, 1941, S. Tex. Geol. Soc. [Guidebook] 13th Ann. Meeting, p. 3.

Las Cruces formation
Mississippian (Meramec): New Mexico.
L. R. Laudon and A. L. Bowsher, 1949, Geol. Soc. America Bull., v. 60, no. 1, p. 17, fig. 4.

Las Espinas volcanics
Tertiary, middle or upper: Hidalgo, Mexico.
F. S. Simons, 1951, Stanford Univ. Abs. Dissert., v. 26, p. 333.

Las Feveras formation
Tertiary or Quaternary: New Mexico.
G. O. Bachman, 1953, U. S. Geol. Survey Oil and Gas Inv. Map OM 137.

La Sierra tonalite
Cretaceous: California.
E. S. Larsen, Jr., and N. B. Keevil, 1947, Geol. Soc. America Bull., v. 58, no. 6, p. 488–489.
E. S. Larsen, Jr., 1948, Geol. Soc. America Mem. 29, p. 71–72.

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Las Juntas shale

Eocene, lower: California.

C. E. Weaver, 1953, Wash. [State] Univ. Pubs. in Geology, v. 7, p. 19 (chart), 30–32.

Las Marías limestone

Upper Cretaceous: Puerto Rico.

R. C. Mitchell, 1954, Puerto Rico Univ. Agr. Expt. Sta. Tech. Paper 13, p. 47, 48, 93 (fig. 10).

Lasso limestone

Oligocene [Aquitanian]: Mariana Islands (Tinian).

Risaburo Tayama, 1939, Correlation of the strata of the South Sea Islands: Geol. Soc. Japan Jour., v. 46, no. 549, p. 346 (correlation table) [English translation in library of U. S. Geol. Survey]; 1952, Coral reefs in the South Seas: Japan Hydrog. Office Bull., v. 11, p. 54, table 4 [English translation in library of U. S. Geol. Survey, p. 65].

Last Chance quartz monzonite

Post-Pennsylvanian: Utah.

Bronson Stringham, 1953, Geol. Soc. America Bull., v. 64, no. 8, p. 965.

Latham shale

Lower Cambrian: California.

J. C. Hazzard, 1954, Calif. Dept. Nat. Res., Div. Mines Bull. 170, chap. 4, p. 30 (table 1), pl. 2.

Latir Peak latite

Tertiary: New Mexico.

P. F. McKinlay, [1955?], N. Mex. State Bur. Mines Min. Res. Bull. 42, p. 14, pl. 1.

La Tuna member (of Magdalena formation)

Pennsylvanian: Texas.

L. A. Nelson, 1937, Colo. Univ. Studies, v. 25, no. 1, p. 89; 1940, Am. Assoc. Petroleum Geologists Bull., v. 24, no. 1, p. 167, 170.

Laulau limestone

Miocene (Aquitanian): Mariana Islands (Saipan).

Risaburo Tayama, 1938, Geomorphology, geology, and coral reefs of Saipan Island: Tropical Industry Inst., Palau, South Sea Islands, Bull. 1 [English translation in library of U. S. Geol. Survey, p. 56–60].

Josiah Bridge *in* W. S. Cole and Josiah Bridge, 1953, U. S. Geol. Survey Prof. Paper 253, p. 9–10.

Laupahoehoe volcanic series

Pleistocene and Recent(?): Hawaiian Islands (Hawaii).

G. A. Macdonald, 1945, Am. Jour. Sci., v. 243, no. 4, p. 211–213, 214–215.

Laurel migmatite

Age unknown (post-Glenarm series): Maryland.

Ernst Cloos and C. H. Broedel, 1940, Geologic map of Howard County and adjacent parts of Montgomery and Baltimore Counties (1:62,500): Md. Geol. Survey.

R. W. Chapman, 1942, Geol. Soc. America Bull., v. 53, no. 9, p. 1300–1328.

Laurel Canyon formation

Paleozoic: California.

O. P. Jenkins, 1938, Geologic map of California (1:500,000): Calif. Dept. Nat. Res., Div. Mines, sheet 4.

Lava Falls tongue

Lower and/or Middle Cambrian: Arizona.

E. D. McKee, 1945, Carnegie Inst. Washington Pub. 563, p. 14, 29, 95.

La Vainilla limestone

Permian: Chiapas, Mexico.

M. L. Thompson and A. K. Miller, 1944, Jour. Paleontology, v. 18, no. 6, p. 486.

Laval formation

Middle Ordovician (Chazy): Quebec, Canada.

T. H. Clark, 1944, Royal Soc. Canada Trans., sec. 4, v. 38, p. 29; 1952, Quebec Dept. Mines Geol. Rept. 46, p. 43–45.

Lavender shale member (of Fort Payne chert)

Mississippian: Georgia.

Charles Butts *in* Charles Butts and Benjamin Gildersleeve, 1948, Ga. Geol. Survey Bull. 54, p. 43–44.

La Vida member (of Puente formation)

Miocene, upper : California.

J. E. Schoelhamer and others, 1954, U. S. Geol. Survey Oil and Gas Inv. Map OM 154.

Lawler tuff

See **Lawlor tuff.**

Lawlor tuff

Pliocene, lower: California.

B. L. Clark, 1943, Calif. Dept. Nat. Res., Div. Mines Bull. 118, pt. 2, p. 189 (fig. 72), 191 [preprint 1941].

C. E. Weaver, 1949, Geol. Soc. America Mem. 35, p. 121–122.

Lawrence Harbour shale

Ordovician: Newfoundland, Canada.

G. R. Heyl, 1936, Newfoundland Geol. Survey Bull. 3, p. 8–9.

Lawrenceville shale (in McLeansboro formation)

Pennsylvanian: Illinois and Indiana.

J. A. Culbertson, 1932, The paleontology and stratigraphy of the Pennsylvanian strata between Caseyville, Ky. and Vincennes, Ind.; Abs. Thesis, Ill. Univ.: Urbana, Ill., p. 3, 8.

Lawson limestone

Upper Cretaceous: Florida (subsurface).

P. L. Applin and E. R. Applin, 1944, Am. Assoc. Petroleum Geologists Bull., v. 28, no. 12, p. 1681, 1708–1709.

Layton formation

Pliocene: Jamica, British West Indies.

J. W. Spencer, 1898, Canadian Inst. [Toronto] Trans., v. 5, pt. 2, p. 338–342.

Leach formation

Pennsylvanian(?): Nevada.

S. W. Muller, H. G. Ferguson, and R. J. Roberts, 1951, Geology of the Mount Tobin quadrangle, Nevada: U. S. Geol. Survey Geol. Quadrangle Map [GQ 7].

Leach River [formation]

Carboniferous and younger: British Columbia, Canada.

1948, Canada Geol. Survey Map 932A.

Leahurst formation

Upper Devonian: Alberta, Canada.

J. M. Andrichuk and J. S. Wonfor, 1954, Am. Assoc. Petroleum Geloogists Bull., v. 38, no. 12, p. 2505.

Leatham formation
Mississippian (Kinderhookian): Utah.
F. D. Holland, Jr., 1952, Am. Assoc. Petroleum Geologists Bull. v. 36, no. 9, p. 1719–1723.

Levenworth glacial stage
Pleistocene: Washington.
B. M. Page, 1939, Jour. Geology, v. 47, no. 8, p. 795–805.

Lebanon Junction siltstone member (of Brodhead formation)
Lower Mississippian: Kentucky.
P. B. Stockdale, 1939, Geol. Soc. America Special Paper 22, p. 147.

Lebeau member (of Le Moyen formation)
Recent: Louisiana (subsurface and surface).
P. H. Jones *in* P. H. Jones, A. N. Turcan, Jr., and H. E. Skibitzke, 1954, La. Dept. Conserv. Geol. Bull. 30, p. 89–90.

Lebec quartz monzonite
Jurassic(?): California.
J. C. Crowell, 1952, Calif. Dept. Nat. Res., Div. Mines Special Rept. 24, p. 8–10.

Leckie group
Lower or Upper Cretaceous: British Columbia, Canada.
C. E. Cairnes, 1943, Canada Geol. Survey Paper 43–15, p. 7.

Leclercville shale
Ordovician: Quebec, Canada.
T. H. Clark, 1947, Quebec Dept. Mines Prelim. Rept. 204, p. 8, 11.

Ledbetter slate
Ordovician: Washington.
C. F. Park, Jr., 1938, Econ. Geology, v. 33, no. 7, p. 713, 714 (fig. 2).
C. F. Park, Jr., and R. S. Cannon, Jr., 1943, U. S. Geol. Survey Prof. Paper 202, p. 6, 19–22, pl. 1.

Leduc member (of Woodbend formation)
Devonian: Alberta, Canada (subsurface).
D. B. Layer, chm., 1950, Am. Assoc. Petroleum Geologists Bull., v. 34, no. 9, p. 1821–1822.

Leecher metamorphics
Age uncertain (pre-Chelan batholith): Washington.
J. D. Barksdale, 1948, Northwest Science, v. 22, no. 4, p. 165, 166.

Leeds facies (of Schoharie formation)
Middle Devonian: New York.
Winifred Goldring and R. H. Flower, 1942, Am. Jour. Sci., v. 240, no. 10, p. 683, 686, 691–693.

Leeds sandstone (in Silver Reef sandstone member of Chinle formation)
Upper Triassic: Utah.
P. D. Proctor, 1953, Utah Geol. Mineralog. Survey Bull. 44, p. 10–11, 25, 28.

Leeic period
Carboniferous (includes Mississippian, Chartresan, and Oshawanan of Keyes): Iowa and upper Mississippi Valley.
[C. R.] Keyes, 1941, Pan. Am. Geologist, v. 75, no. 2, p. 98, 149–150.

Le Fever limestone
Upper Silurian: New York.
G. H. Chadwick, 1944, N. Y. State Mus. Bull. 336, p. 47 (fig. 11), 51, 52 [1946].

Leffler gravels
Pleistocene: Oregon.
I. S. Allison, 1953, Oreg. Dept. Geology and Mineral Industries Bull. 37, p. 9–10.

Lefulufulua trachyte
Pliocene and lower Pleistocene(?): Samoa Islands (Tutuila).
H. T. Stearns, 1944, Geol. Soc. America Bull., v. 55, no. 11, p. 1285.

Legion Creek granite
Precambrian: Texas.
V. E. Barnes, 1940, *in* Geol. Soc. America [Guidebook] 53d Ann. Meeting, p. 47, 53 (geol. map).

Lehighton member (of Tully formation).
Upper Devonian: Pennsylvania.
R. E. Stevenson and W. S. Skinner, 1949, Pa. Acad. Sci. Proc., v. 23, p. 31.

Lehman formation
Lower Ordovician (Chazyan): Nevada and Utah.
L. F. Hintze, 1951, Utah Geol. Mineralog. Survey Bull. 39, p. 19–20.

Leicester marcasite member (of Moscow formation)
Middle Devonian: New York.
R. G. Sutton, 1951, Rochester Acad. Sci. Proc., v. 9, no. 5–6, p. 379–380.

Leila trachyte
Pliocene and lower Pleistocene(?): Samoa Islands (Tutuila).
H. T. Stearns, 1944, Geol. Soc. America Bull., v. 55, no. 11, p. 1285.

Lemba formation
Oligocene, upper: Dominican Republic.
P. J. Bermudez, 1949, Cushman Lab. Foram. Research Special Pub. 25, p. 33.

Lemhi quartzite
Precambrian (Belt series): Idaho.
C. P. Ross, 1947, Geol. Soc. America Bull., v. 58, no. 12, pt. 1, p. 1096–1097, pl. 1.

Lemon Cove schist
Triassic(?): California.
Cordell Durrell, 1940, Calif. Univ. Dept. Geol. Sci. Bull., v. 25, no. 1, p. 14–15, 116.

Lemons Bluff member (of Marble Falls formation)
Pennsylvanian (Morrow): Texas.
F. B. Plummer, 1944, Tex. Univ. Bur. Econ. Geology Min. Res. Circ. 33, p. 3, 5, 8; 1945, Tex. Univ. Pub. 4401, p. 67–69.

Lemont drift
Pleistocene (Illinoian): Illinois.
J. H. Bretz, 1939, Ill. State Geol. Survey Bull. 65, pt. 1, p. 53.
Leland Horberg and P. E. Potter, 1955, Ill. State Geol. Survey Rept. Inv. 185, p. 7–19.

Le Moyen formation
Recent: Louisiana (subsurface and surface).
P. H. Jones *in* P. H. Jones, A. N. Turcan, Jr., and H. E. Skibitzke, 1954, La. Dept. Conserv. Geol. Bull. 30, p. 88–94.

Lena member (of Fleming formation)
Miocene: Louisiana.
H. N. Fisk, 1940, La. Dept. Conserv. Geol. Bull. 18, p. 118, 151–154.

Lengua beds

Miocene: Trinidad, British West Indies.

H. G. Kugler and others, [1939], Geological conference in Trinidad; notes on the excursions: Petroleum Assoc. Trinidad, correlation table.

H. H. Renz, 1942, 8th Am. Sci. Cong. Proc., v. 4, p. 560, table facing p. 572.

Lenzie silt

Pleistocene (Tazewell or Cary): Alberta, Canada.

Leland Horberg, 1952, Jour. Geology, v. 60, no. 4, p. 313–316.

Leola volcanics

Precambrian: Washington.

C. F. Park, Jr. and R. S. Cannon, Jr., 1943, U. S. Geol. Survey Prof. Paper 202, p. 6, 9–11, pl. 1.

Leone volcanics

Recent(?): Samoa Islands (Tutuila).

R A. Daly, 1924, Carnegie Inst. Washington Pub. 340, p. 110–113, 130.

H. T. Stearns, 1944, Geol. Soc. America Bull., v. 55, no. 11, p. 1285, 1306–1308.

Lepine formation

Lower Cretaceous: British Columbia and Yukon, Canada.

E. D. Kindle, 1944, Canada Geol. Survey Paper 44–16, p. 12–13.

Lepreau diorite

Middle Devonian(?): New Brunswick, Canada.

H. R. Belyea, 1944, Acadian Naturalist, v. 1, no. 3, p. 88.

Lepreau formation

Triassic: New Brunswick, Canada.

W. J. Wright and C. S. Clements, 1943, Acadian Naturalist, v. 1, no. 1, pl. 1.

F. J. Alcock, 1945, Canada Geol. Survey Paper (Prelim. Map) 45–2.

Letham formation

Mississippian (Kinderhookian): Utah.

F. D. Holland, Jr., 1952, Am. Assoc. Petroleum Geologists Bull., v. 36, no. 9, p. 1719–1720, 1724.

Lethbridge member (of Oldman formation)

Upper Cretaceous: Alberta, Canada.

M. B. B. Crockford, 1949, Am. Assoc. Petroleum Geologists Bull., v. 33, no. 4, p. 503–505.

Levack granite

Precambrian: Ontario, Canada.

H. C. Cooke, 1946, Canada Geol. Survey Bull. 3, p. 51–52.

Lexington glacial substage

Pleistocene (Wisconsin): Massachusetts.

S. S. Judson, Jr., 1949, Peabody Foundation for Archaeology Papers, v. 4, no. 1. p. 23–34.

Lezard limestone member (of Saint Bartholomew formation)

Eocene, middle: St. Bartholomew, French West Indies.

R. A. Christman, 1953, Geol. Soc. America Bull., v. 64, no. 1, p. 70.

Liard formation

Middle Triassic: British Columbia, Canada.

E. D. Kindle, 1946, Canada Geol. Survey Paper 46–1, App. 1, p. 21–23.

Libby formation
Precambrian (Belt series) : Montana.
Russell Gibson, 1948, U. S. Geol. Survey Bull. 956, p. 9, 17–19.

Liberty facies (of Brodhead formation)
Lower Mississippian: Kentucky.
P. B. Stockdale, 1939, Geol. Soc. America Special Paper 22, p. 154–166.

Liberty Memorial shale member (of Chanute formation)
Pennsylvanian (Missouri series) : Missouri.
J. R. Clair, 1943, Mo. Geol. Survey and Water Res., 2d ser., v. 27, pl. 1.

Libertytown metarhyolite
Precambrian(?) : Maryland.
A. J. Stose and G. W. Stose, 1946, Md. Dept. Geology, Mines and Water Res., Carroll and Frederick Counties Rept., p. 58, 65.

Lichen Lake granite
Precambrian (Algoman?) : Quebec, Canada.
W. W. Longley, 1951, Quebec Dept. Mines Geol. Rept. 47, p. 16.

Licking Creek limestone
Lower Devonian: Pennsylvania.
F. M. Swartz, 1938, (abs.) Geol. Soc. America Bull., v. 49, no. 12, p. 1923.
F. M. Swartz *in* Bradford Willard, F. M. Swartz, and A. B. Cleaves, 1939, Pa. Geol. Survey, ser. 4, Bull. G 19, p. 69–71.

Lick Run conglomerate
Lower Mississippian (Oil Lake) : Pennsylvania.
W. M. Laird, 1941, Pa. Topog. and Geol. Survey Progress Rept. 126, p. 16 (footnote).

Liebre quartz monzonite
Jurassic(?) : California.
J. C. Crowell, 1952, Calif. Dept. Nat. Res., Div. Mines Special Rept. 24, p. 10–11.

Lighthouse conglomerate
Mississippian (Kinderhook) : Michigan.
H. M. Martin, 1936, The centennial geological map of the southern peninsula of Michigan (1 : 500,000) : Mich. Geol. Survey Div. Pub. 39 (Geol. Ser. 33).

Lightning formation
Recent: Wyoming.
L. B. Leopold and J. P. Miller, 1954, U. S. Geol. Survey Water-Supply Paper 1261, p. 11.

Liguanea formation
Pleistocene: Jamaica, British West Indies.
J. W. Spencer, 1898, Canadian Inst. [Toronto] Trans., v. 5, pt. 2, p. 347–349.
C. A. Matley, 1951, Geology and physiography of the Kingston district, Jamaica: Inst. of Jamaica, p. 40–43, 63, geol. map.

Lille member (of Fernie formation)
Jurassic: Alberta, Canada.
F. H. McLearn, 1929, Canada Natl. Mus. Bull. 58, p. 83.
J. Spivak, 1949, Am. Assoc. Petroleum Geologists Bull., v. 33, no. 4, p. 537.

Lilloise complex
Eocene(?) : Southeast Greenland.
L. R. Wager, 1947, Meddel. om Grønland, bind 134, nr. 5, p. 42–44, 46.

Lillooet group
Lower Cretaceous: British Columbia, Canada.
S. Duffell and K. C. McTaggert, 1952, Canada Geol. Survey Mem. 262, p. 36–39.

Lima granite
Age unknown: Pennsylvania.
W. H. Tomlinson, 1954, Pa. Acad. Sci. Proc., v. 28, p. 189–192.

Lime Creek glacial stage
Pleistocene (Illinoian?): Colorado.
R. L. Nelson, 1954, Jour. Geology, v. 62, no. 4, p. 327–328.

Lime Hill member (of Logansport formation)
Paleocene (Midway): Louisiana.
D. P. Meagher and L. C. Aycock, 1942, La. Dept. Conserv. Geol. Pamph. 3, p. 12–16.
G. E. Murray, Jr., and E. P. Thomas, 1945, Am. Assoc. Petroleum Geologists Bull., v. 29, no. 1, p. 57–58.

Limeport limestone
Upper Cambrian (Dresbachian): Pennsylvania.
B. F. Howell, Henry Roberts, and Bradford Willard, 1950, Geol. Soc. America Bull., v. 61, no. 12, p. 1360–1361, 1362, 1364–1366.

Limestone Gap shale
Pennsylvanian (Morrow): Oklahoma.
B. H. Harlton, 1938, Am. Assoc. Petroleum Geologists Bull., v. 22, no. 7, p. 854, 901–902.

Limonar formation
Miocene, lower: Cuba.
J. F. de Albear, 1941, Soc. Cubana Ingenieros Rev., v. 36, p. 493, chart facing p. 564.

Limon Bocas formation
Pliocene: Panama.
Alfred Senn, 1940, Am. Assoc. Petroleum Geologists Bull., v. 24, no. 9, p. 1578 (correlation chart).

Limones shale
Miocene, upper: Panama and Costa Rica.
H. N. Coryell and R. W. Mossman, 1942, Jour. Paleontology, v. 16, no. 2, p. 233.
J. W. Durham, 1950, Geol. Soc. America Mem. 43, pt. 2, table 10.

Lince-a-Jardin member (of Logy formation)
Precambrian: Newfoundland, Canada.
J. O. Fuller, 1941, Newfoundland Geol. Survey Bull. 15, p. 13, 14.

Lincoln sandstone
Middle Cambrian: Kentucky (subsurface).
W. R. Jillson, 1948, New oil horizons in Kentucky: Frankfort, Ky., Roberts Printing Co., p. 27–29.

Lincolnshire limestone
Middle Ordovician: Virginia.
B. N. Cooper and C. E. Prouty, 1943, Geol. Soc. America Bull., v. 54, no. 6, p. 863.

Lincolnshirian stage
Middle Ordovician (Chazyan): Virginia, West Virginia, and Kentucky.
Marshall Kay, 1948, Am. Assoc. Petroleum Geologists Bull., v. 32, no. 8, p. 1402–1403, 1405, 1406.

Lindemansbugt facies
Lower Cretaceous (Valanginian): Northeast Greenland.
Andreas Vischer, 1943, Meddel. om Grønland, bind 133, nr. 1, p. 87–91, pl. 2.

Linderman sandstone
Lower Mississippian (Oil Lake) : Pennsylvania.
W. M. Laird, 1941, Pa. Topog. and Geol. Survey Progress Rept. 126, p. 12 (footnote).

Linklater formation
Precambrian (Keewatin) : Ontario, Canada.
W. C. Gussow, 1942, Ontario Dept. Mines Ann. Rept., v. 49, pt. 6, p. 5–6.

Linn gravels
Pleistocene: Oregon.
I. S. Allison, 1953, Oreg. Dept. Geology and Mineral Industries Bull. 37, p. 11–12.

Linn subgroup
Pennsylvanian (Missourian): Kansas, Iowa, Missouri, Nebraska, and Oklahoma.
R. C. Moore, 1948, Am. Assoc. Petroleum Geologists Bull., v. 32, no. 11, p. 2029–2030, 2031.

Linnian series
Devonian (Devonic) : Iowa and Missouri.
[C. R.] Keyes, 1939, Pan-Am. Geologist, v. 72, no. 1, p. 64.

Linton formation
Pennsylvanian: Indiana.
C. E. Wier, 1950, U. S. Geol. Survey Coal Inv. Map C 1.

Linwood shales
Pennsylvanian: Kansas.
[C. R.] Keyes, 1937, Pan-Am. Geologist, v. 67, no. 5, p. 366.

Lion Head member (of Manistique formation)
Middle Silurian (Niagaran) : Ontario, Canada.
E. W. Shaw, 1937, Royal Canadian Inst. Trans., v. 21, pt. 2, p. 320.

Lippincott member (of Lost Burro formation)
Middle(?) and Upper Devonian: California.
J. F. McAllister, 1955, Calif. Dept. Nat. Res., Div. Mines Special Rept. 42, p. 12, pl. 2.

Lisco member (of Broadwater formation)
Pleistocene, lower: Nebraska.
C. B. Schultz and T. M. Stout, 1945, Am. Jour. Sci., v. 243, no. 5, p. 232–236.

Lithonia granite-gneiss
Precambrian(?) : Georgia.
T. L. Watson, 1902, Ga. Geol. Survey Bull. 9–A, p. 54, 125–127.
L. A. Herrmann, 1954, Ga. Geol. Survey Bull. 61, p. 8–15, 34–41, 68–73, 78–79.

Little Bay Head lavas
Lower Ordovician: Newfoundland, Canada.
H. J. MacLean *in* G. V. Douglas and others, 1940, Newfoundland Geol. Survey Bull. 20, p. 89.
H. J. MacLean, 1947, Newfoundland Geol. Survey Bull 22, p. 17.

Little Bear formation
Upper Cretaceous: Northwest Territories (Mackenzie), Canada.
J. S. Stewart, 1944, Canadian Inst. Mining and Metallurgy Trans., v. 47, p. 163; 1945, Canada Geol. Survey Paper 45–29, p. 7.

Little Bear formation or residuum
Lower Cretaceous: Mississippi, Alabama, Tennessee, and Kentucky.
F. F. Mellen, 1937, Miss. State Geol. Survey Bull. 34, p. 8–20, 27–29.

Little Chain limestone (in McLeansboro formation)
Pennsylvanian: Illinois.
J. A. Culbertson, 1932, The paleontology and stratigraphy of the Pennsylvanian strata between Caseyville, Ky., and Vincennes, Ind., Abs. Thesis, Ill. Univ.; Urbana, Ill., p. 3, 8.

Little Chief Canyon member (of Lodgepole limestone)
Lower Mississippian: Montana.
M. M. Knechtel, J. E. Smedley, and R. J. Ross, Jr., 1954, Am. Assoc. Petroleum Geologists Bull., v. 38, no. 11, p. 2395–2399.

Little Elk gneissoid granite
Precambrian: South Dakota.
G. L. Taylor, 1935, Am. Jour. Sci., 5th ser., v. 29, no. 171, p. 283–284.

Little Indian Pool beds
Upper Ordovician: Quebec, Canada.
H. W. McGerrigle, 1950, Quebec Dept. Mines Geol. Rept. 35, p. 31.

Little Osage shale member (of Fort Scott formation)
Pennsylvanian (Des Moines): Kansas, Missouri, and Nebraska.
J. M. Jewett, 1941, Kans. State Geol. Survey Bull. 38, pt. 11, p. 306–309.

Little Lawn formation
Ordovician(?): Newfoundland, Canada.
R. E. Van Alstine, 1948, Newfoundland Geol. Survey Bull. 23, p. 13–14.

Little Missouri lens (in Newcastle formation)
Upper Cretaceous: Wyoming.
R. M. Grace, 1952, Wyo. Geol. Survey Bull. 44, p. 14, 15–16.

Little Natches member (of Cook Mountain formation)
Eocene (Claiborne): Louisiana.
J. Huner, Jr., 1939, La. Dept. Conserv. Geol. Bull. 15, p. 101–109.

Little Pavlof agglomerate
Quaternary: Alaska.
G. C. Kennedy and H. H. Waldron, 1947, U. S. Geol. Survey Alaskan Volcano Inv. Rept. 2, pt. 2, pl. 2 (geol. map).

Little Pawnee shale member (of Cass formation)
Pennsylvanian (Virgil): Nebraska.
G. E. Condra, 1949, Nebr. Geol. Survey Bull. 16, p. 29.

Little River series
Paleozoic(?): Georgia.
A. L. Peyton and H. E. Cofer, Jr., 1950, U. S. Bur. Mines Rept. Inv. 4665, p. 4–5.
G. W. Crickway, 1952, Ga. Geol. Survey Bull. 58, p. 31–33.

Little Rock Creek limestone
Devonian: Indiana.
G. A. Cooper, 1941, Washington Acad. Sci. Jour., v. 31, no. 5, p. 181.

Little Shades sandstone member (of Parkwood formation)
Mississippian (Chester): Alabama.
R. B. Morton, 1949, Miss. Geol. Soc. Guidebook 7th Field Trip, p. 37, 38, 40, 41.

Little Union quartz latite

Tertiary, upper, or lower Pleistocene(?) : Colorado.

C. H. Behre, Jr., E. N. Goddard, and A. E. Sandberg, 1939, Preliminary geologic map of west slope of Mosquito Range in the vicinity of Leadville, Colorado (1 : 12,000) : U. S. Geol. Survey.

C. H. Behre, Jr., 1939, Colo. Sci. Soc. Proc., v. 14, no. 2, p. 66–67.

Little Valley limestone

Mississippian (Warsaw age) : Virginia.

Paul Averitt, 1941, Va. Geol. Survey Bull. 56, p. 17–21.

Little Vermilion cyclothem (including Little Vermilion limestone)

Pennsylvanian : Illinois.

R. C. Moore and others, 1944, Geol. Soc. America Bull., v. 55, no. 6, Chart 6, column 29.

C. L. Cooper, 1946, Ill. State Geol. Survey Bull. 70, p. 14, 16.

Little Wabash sandstone (In McLeansboro formation)

Pennsylvanian : Illinois and Indiana.

J. A. Culbertson, 1932, The paleontology and stratigraphy of the Pennsylvanian strata between Caseyville, Ky. and Vincennes, Ind. ; Abs. Thesis, Ill. Univ. : Urbana, Ill., p. 9.

Little Willow series

Precambrian : Utah.

A. E. Granger and others, 1952, Utah. Geol. Soc. Guidebook 8,, p. 3.

Liveoak member (of Tejon formation)

Eocene : California.

J. G. Marks, 1941,(abs.) Geol. Soc. America Bull., v. 52, no. 12, pt. 2, p. 1922.

Livingstone formation

Carboniferous : Alberta, Canada.

R. J. W. Douglas, 1953, Alberta Soc. Petroleum Geologists 3d Ann. Field Conf. and Symposium, p. 68.

Lizard Springs formation

Paleocene, lower : Trinidad, British West Indies.

Ernst Lehner, 1935, [France] Office national des combustibles liquides annales, 10e année, no. 4, p. 717 (table).

J. A. Cushman and H. H. Renz, 1946, Cushman Lab. Foram. Research Special Pub. 18, p. 1–12.

Lloydminster shale

Upper Cretaceous : Alberta, Canada (subsurface).

A. W. Nauss, 1945, Am. Assoc. Petroleum Geologists Bull., v. 29, no. 11, p. 1615–1618.

Lobato basaltic lavas

Quaternary : New Mexico.

H. T. U. Smith, 1938, Jour. Geology, v. 46, no. 7, p. 959.

Loch Lomond series

Middle Cambrian : New Brunswick, Canada.

A. O. Hayes and B. F. Howell, 1937, Geol. Soc. America Special Paper 5, p. 69–76.

Locomotive fanglomerate

Tertiary, middle(?) : Arizona.

James Gilluly, 1937, Ariz. Univ. Bull., v. 8, no. 1, p. 40-43.

Lodge Bay granite

Precambrian : Saskatchewan, Canada.

A. M. Christie, 1952, Canada Geol. Survey Mem. 269, p. 32.

Lodgepole rhyolite and obsidian
Tertiary: Wyoming.
R. E. Wilcox, 1944, Geol. Soc. America Bull., v. 55, no. 9, p. 1054–1055, pl. 2.

Lodo formation
Paleocene and Eocene: California.
R. T. White, 1938, (abs.) Geol. Soc. America Proc. 1937, p. 257; 1940, Am. Assoc. Petroleum Geologists Bull., v. 24, no. 10, p. 1735–1745.

Logan Hill formation
Pleistocene, lower: Washington.
P. D. Snavely, Jr., and others, 1951, U. S. Geol. Survey Coal Inv. Map C 8, sheet 1.

Logansport formation
Paleocene (Midway): Louisiana.
G. [E.] Murray, Jr., 1941 (abs) Am. Assoc. Petroleum Geologists Bull., v. 25, no. 5, p. 941–942.
G. E. Murray, Jr., and E. P. Thomas, 1945, (abs.) Am. Assoc. Petroleum Geologists Bull., v. 29, no. 1, p. 57–58.

Logansport limestone
Middle Devonian: Indiana.
G. A. Cooper and A. S. Warthin, 1941, Washington Acad. Sci. Jour., v. 31, no. 6, p. 259.

Loggy Bayou member (of Hall Summit formation)
Paleocene (Midway): Louisiana.
D. P. Meagher and L. C. Aycock, 1942, La. Dept. Conserv. Geol. Pamph. 3, p. 12–16.
G. E. Murray, Jr., and E. P. Thomas, 1945, Am. Assoc. Petroleum Geologists Bull., v. 29, no. 1, p. 59.

Log Springs formation
Lower Pennsylvanian (Morrow): New Mexico.
A. K. Armstrong, 1955, N. Mex. State Bur. Mines Min. Res. Circ. 39, p. 5, 9–10.

Logtown Ridge formation
Middle or Upper Jurassic: California.
N. L. Taliaferro, 1943, Calif. Dept. Nat. Res., Div. Mines Bull. 125, p. 283.

Logy formation
Precambrian: Newfoundland, Canada.
J. O. Fuller, 1941, Newfoundland Geol. Survey Bull. 15, p. 13–14.

Loma Blanca tongue (of Yegua formation)
Eocene (Claiborne): Texas.
W. G. Kane and G. B. Gierhart, 1935, Am. Assoc. Petroleum Geologists Bull., v. 19, no. 9, p. 1374–1375.
J. M. Patterson, 1942, Am. Assoc. Petroleum Geologists Bull., v. 26, no. 2, p. 259 (fig. 2), 265–266.

Loma Candela formation
Eocene, middle: Cuba.
J. A. Cushman and P. J. Bermudez, 1949, Cushman Lab. Foram, Research Contrib., v. 25, pt. 2, p. 27, 45.
P. J. Bermudez, 1950, Soc. Cubana Historia Nat. Mem., v. 19, no. 3, p. 239–244.

Loma Yucatan limestone
Upper Cretaceous (Campanian): Cuba.
H. J. MacGillavry, 1937, Geog. Geol. Meded. (Utrecht Univ.) Physiog.-Geol. Reeks, no. 14, p. 20.

Lonesome formation
Upper Jurassic(?) : Oregon.
R. L. Lupher, 1941, Geol. Soc. America Bull., v. 52, no. 2, p. 227, 265–266.

Long Draw glacial substage
Pleistocene (Wisconsin) : Colorado, Wyoming, and New Mexico.
L. L. Ray, 1939, (abs.) Geol. Soc. America Bull., v. 50, no. 12, pt. 2, p. 2007.
Kirk Bryan and L. L. Ray, 1940, Smithsonian Misc. Coll., v. 99, no. 2, p. 34.

Long Harbor series
Ordovician(?) : Newfoundland, Canada.
W. H. Twenhofel, 1947, Am. Jour. Sci., v. 245, no. 2, p. 92.

Long Mountain granite
Upper Devonian(?) : New Hampshire.
R. W. Chapman, 1946, (abs.) Geol. Soc. America Bull., v. 57, no. 12, pt. 2, p. 1187; 1948, v. 59, no. 11, p. 1079–1081, pl. 1.

Long Rapids shale
Devonian: Ontario, Canada.
E. M. Kindle, 1939, Geologie der Erde, North America, v. 1, p. 197, 199, 202.

Long Reach formation
Upper Silurian: New Brunswick, Canada.
G. S. Mackenzie, 1951, Canada Geol. Survey Paper (Prelim. Map) 51–15.

Longs Peak–St. Vrain granite
Precambrian: Colorado.
E. E. Wahlstrom, 1940, Econ. Geology, v. 35, no. 4, p. 480.

Looma member (of Grand Rapids formation)
Lower Cretaceous: Alberta, Canada (subsurface).
P. C. Badgley, 1952, Canada Geol. Survey Paper 52–11, p. 6.

Loomis member (of Mount Head formation)
Mississippian: Alberta, Canada.
R. J. W. Douglas and P. Harker, 1955, (abs.) Am. Assoc. Petroleum Geologists and Alberta Soc. Petroleum Geologists, Program Western Canada Regional Meeting and 5th Ann. Field Trip, p. 18.

Loon Lake quartz-syenitic complex
Precambrian: New York.
A. F. Buddington, 1948, Geol. Soc. America Mem. 28, p. 25; 1953, N. Y. State Mus. Bull. 346, p. 71, 81–84.

Lorane shale member (of Spencer formation)
Eocene: Oregon.
H. E. Vokes, P. D. Snavely, Jr., and D. A. Myers, 1951, U. S. Geol. Survey Oil and Gas Inv. Map OM 110.

Los Arrieros shale member (of Yegua formation)
Eocene (Claiborne) : Texas.
J. M. Patterson, 1942, Am. Assoc. Petroleum Geologists Bull., v. 26, no. 2, p. 259 (fig. 2), 266.

Los Arrojos formation
See Arrojos formation.

Los Atajos member (of Brasso formation)
Miocene, upper: Trinidad, British West Indies.
H. G. Kugler, 1936, Am. Assoc. Petroleum Geologists Bull., v. 20, no. 11, p. 1451 (chart).
H. H. Renz, 1942, 8th Am. Sci. Cong. Proc., v. 4, p. 554.

Los Banos Creek member (of "Quinto B" reef beds)
Upper Cretaceous: California.
C. T. Smith, 1945, Jour. Paleontology, v. 19, no. 1, p. 38.

Los Gatos beds
Upper Cretaceous: California.
F. M. Anderson, 1937, (abs.) Am. Assoc. Petroleum Geologists Bull., v. 21, no. 12, p. 1612.

Los Medanos formation
Pliocene, lower: California.
B. L. Clark, 1943, Calif. Dept. Nat. Res., Div. Mines Bull. 118, pt. 2, p. 189 (fig. 72), 191 [preprint 1941].

Los Muertos Creek formation
Eocene, middle: California.
I. F. Wilson, 1943, Calif. Jour. Mines and Geology, v. 39, no. 2, p. 205–206, 226 (fig. 5).

Lospe formation
(?) Miocene, lower: California.
C. F. Tolman, 1927, Econ. Geology, v. 22, no. 5, p. 459.
S. G. Wissler and F. E. Dreyer, 1943, Calif. Dept. Nat. Res., Div. Mines Bull. 118, pt. 2, p. 237, 238 [preprint 1941].

Los Pinos granite
Precambrian: New Mexico.
J. T. Stark and E. C. Dapples, 1941, (abs.) Geol. Soc. America Bull., v. 52, no. 12, pt. 2, p. 1936; 1946, v. 57, no. 12, pt. 1, p. 1136–1138.

Lost Burro formation
Middle (?) and Upper Devonian: California.
J. F. McAllister, 1952, Calif. Dept. Nat. Res., Div. Mines Special Rept. 25, p. 18–20.

Lost conglomerate member (of Pepetto formation)
Pliocene, lower: California.
C. J. Kundert, 1952, Calif. Dept. Nat. Res., Div. Mines Special Rept. 18, p. 9, 10 (fig. 9).

Lost Creek trachyte
Miocene and/or Pliocene: Wyoming.
A. D. Howard, 1937, Geol. Soc. America Special Paper 6, p. 21–24, 78.

Lost Nation quartz diorite
Upper Ordovician: New Hampshire.
R. W. Champman, 1935, Am. Jour. Sci., 5th ser., v. 30, no. 179, p. 405, fig. 1.

Lost Run conglomerate
Ordovician: Pennsylvania.
F. M. Swartz, 1948, Field Conf. Pa. Geologists Guidebook 14th Ann. [Meeting] [Supp.], p. 4–5.

Lost Sheep dolomite
Middle Silurian: Utah.
F. W. Osterwald, 1953, U. S. Geol. Survey Trace Elements Inv. Rept. TEI–330, p. 105.

Lostway member (of Richfield formation)
Precambrian or Lower Cambrian: British Columbia, Canada.
A. H. Lang, 1938, Canada Geol. Survey Paper 38–16, p. 8.

Los Vallos member (of Yeso formation)
Permian: New Mexico.
V. C. Kelley and G. H. Wood, 1946, U. S. Geol. Survey Oil and Gas Inv. Prelim. Map 47.

Lotbinière shale
Ordovician: Quebec, Canada.
T. H. Clark, 1947, Quebec Dept. Mines Prelim. Rept. 204, p. 7–8.

Louann salt
Permian: Subsurface in Arkansas, Louisiana, and Texas.
R. T. Hazzard, W. C. Spooner, and B. W. Blanpied, [1947], Shreveport Geol. Soc. 1945 Ref. Rept. v. 2, p. 483, 484, 488.

Loughridge formation
Middle Ordovician: Illinois.
J. S. Templeton and H. B. Willman, 1952, Tri-State Geol. Soc. Guidebook 16th Ann. Field Conf., p. 21, figs. 3, 12.

Lousetown formation
Pliocene upper, or Pleistocene: Nevada.
J. P. Thayer, 1937, Geol. Soc. America Bull., v. 48, no. 11, p. 1648–1649.

Loutre formation
Pennsylvanian (Des Moines): Missouri.
H. S. McQueen, 1943, Mo. Geol. Survey and Water Res., 2d ser., v. 28, p. 71–78.

Louvicourt granodiorite
Precambrian (Archean): Quebec, Canada.
A. S. MacLaren, 1950, Canada Geol. Survey Map 997A.

Lovell member (of Mt. Simon formation)
Upper Cambrian: Illinois (subsurface).
J. S. Templeton, Jr., 1950, Ill. Acad. Sci. Trans., v. 43, p. 155.

Lovington sandstone member (of San Andres formation)
Permian (Leonard): New Mexico and Texas.
J. M. Hills *in* R. L. Bates, 1942, N. Mex. State Bur. Mines Min. Res. Bull. 18, p. 269, 270–271.

Lowell formation
Lower Cretaceous: Arizona.
A. A. Stoyanow, 1949, Geol. Soc. America Mem. 38, p. 8–18.

Lower Amate formation
See Amate (Lower and Upper) formation.

Lower Medinilla limestone
See Medinilla (Lower and Upper) limestone.

Lowes Grove beds
Triassic: North Carolina.
Grover Murray, Jr., 1938, Science, v. 87, no. 2261, p. 390.

Low Hollow limestone member (of Maynardville limestone)
Upper Cambrian: Virginia.
R. L. Miller and J. O. Fuller, 1947, U. S. Geol. Survey Oil and Gas Inv. Prelim. Map 76.

Low Lands formation
Miocene: St. Martin, Netherlands and French West Indies.
G. A. F. Molengraaf, 1931, Leidsche Geol. Meded., Deel 5, p. 737.

Low Layton pillow lavas
Miocene to Pliocene: Jamaica, British West Indies.
C. T. Trechmann, 1929, Geol. Mag., v. 73, no. 6, p. 255; 1942, v. 79, no. 3, p. 174.

Lucia shale
Eocene: California.
R. R. Thorup, 1941, (abs.) Geol. Soc. America Bull., v. 52, no. 12, pt. 2, p. 1958; 1943, Calif. Dept. Nat. Res., Div. Mines Bull. 118, pt. 3, p. 464, 465.

Lucile series
Upper Triassic: Idaho.
W. R. Wagner, 1945, Idaho Bur. Mines and Geology Pamph. 74, p. 5–6.

Lucky Bill formation
Miocene(?): New Mexico.
R. M. Hernon, W. R. Jones, and S. L. Moore, 1953, N. Mex. Geol. Soc. Guidebook 4th Field Conf., p. 120.

Lucky Jim limestone (in Zincton member of Slocan series)
Triassic: British Columbia, Canada.
M. S. Hedley, 1947, British Columbia Dept. Mines Bull. 22, p. 9.

Lue Point member (of Logy formation)
Precambrian: Newfoundland, Canada.
J. O. Fuller, 1941, Newfoundland Geol. Survey Bull. 15, p. 13, 14.

Luke Arm formation
Ordovician: Newfoundland, Canada.
G. R. Heyl, 1936, Newfoundland Geol. Survey Bull. 3, p. 4–6.

Lukfata sandstone formation
Cambrian(?): Oklahoma.
W. D. Pitt, 1955, Okla. Geol. Survey Circ. 34, p. 13–15, pl. 1.

Lula facies (of Cow Bayou member of Logansport formation)
Paleocene (Midway): Louisiana.
G. E. Murray, 1948, La. Dept. Conserv. Geol. Bull. 25, p. 112–114.

Luman tongue (of Green River formation)
Eocene, lower: Wyoming.
G. N. Pipiringos, 1955, Wyo. Geol. Assoc. Guidebook 10th Ann. Field Conf., p. 100, 101.

Lushs Bight group
Ordovician(?): Newfoundland, Canada.
G. H. Espenshade, 1937, Newfoundland Geol. Survey Bull. 6, p. 13.

Lusk formation or cyclothem
Pennsylvanian: Illinois.
J. M. Weller, 1940, Ill. State Geol. Survey Rept. Inv. 71, p. 36–37.

Lutie member (of Theodosia formation)
Lower Ordovician: Missouri and Arkansas.
J. S. Cullison, 1944, Mo. Univ. School Mines and Metallurgy Bull., Tech. Ser., v. 15, no. 2, p. 25, 27, pl. 8.

Lydia granodiorite
Age not stated: Virginia.
W. A. Nelson, 1949, (abs.) Va. Acad. Sci. Proc. 1948–1949, p. 139.

Lyleton shale

Devonian: Manitoba, Canada (subsurface).

J. D. Allan and L. B. Kerr, 1950, Precambrian, v. 23, no. 10, p. 10.

Lynn outwash

Pleistocene: British Columbia, Canada.

J. E. Armstrong and W. C. Brown, 1953, Canada Geol. Survey Water Supply Paper 322, p. 48, table, map.

Lyre formation

Eocene: Washington.

C. E. Weaver, 1937, Wash. [State] Univ. Pubs. in Geology, v. 4, p. 121.

Lytle sand

Devonian: Pennsylvania.

P. A. Dickey, R. F. Sherrill, and L. S. Matteson, 1943, Pa. Geol. Survey, ser. 4, Bull M 25, p. 22, 25–26.

Maalebjerg series (of Eleonore Bay formation)

Precambrian (Greenlandian): Northeast Greenland.

John Haller, 1953, Meddel. om Grønland, bind 113, nr. 5, p. 25–28, 190, pl. 1.

Mabou Mines formation

Pennsylvanian: Nova Scotia and New Brunswick, Canada.

M. J. Copeland, 1955, Dissert. Abs., v. 15, no. 8, p. 1370.

Mabury formation

Eocene, middle: California.

Martin Van Couvering and H. B. Allen, 1943, Calif. Dept. Nat. Res., Div. Mines Bull. 118, pt. 3, p. 496–500.

Macabou limestone

Oligocene, upper: Martinique, French West Indies.

Jean Giraud, 1918, Esquisse geologique de la Martinique avec carte geologique: Hanoi-Haiphong, Imprimerie d'Extreme-Orient, p. 12.

Alfred Senn, 1940, Am. Assoc. Petroleum Geologists Bull., v. 24, no. 9, p. 1581, 1596.

McAdam Lake formation

Lower or Middle Devonian: Nova Scotia, Canada.

W. A. Bell and E. A. Goranson, 1938, Canada Geol. Survey Map 360A.

Macaya formation

Upper Cretaceous: Haiti.

Jacques Butterlin, 1954, Inst. Français d'Haïti Mem. 1, p. 52.

McBride group

Precambrian: Alberta, Canada.

M. K. Sorensen, 1955, Alberta Soc. Petroleum Geologists Guidebook 5th Ann. Field Conf., p. 57.

McBryde limestone member (of Clayton formation)

Paleocene (Midway age): Alabama.

F. S. MacNeil, 1946, U. S. Geol. Survey Strategic Minerals Inv. Prelim. Rept. 3–195, p. 7–8.

MacCodrum formation

Lower Cambrian: Nova Scotia, Canada.

R. D. Hutchinson, 1952, Canada Geol. Survey Mem. 263, p. 37–39.

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McCombs limestone member (of Bell Canyon formation)

Permian (Guadalupe series): Texas.

N. D. Newell and others, 1953, The Permian reef complex of the Guadalupe Mountains region, Texas and New Mexico: San Francisco, W. H. Freeman and Co., p. 15, 53.

W. C. Warren *in* P. B. King, N. D. Newell, and D. W. Boyd, 1955, Permian field conference to the Guadalupe Mountains: Soc. Econ. Paleontologists and Mineralogists, p. 10, 60.

McConnell formation

Devonian: British Columbia, Canada.

L. R. Laudon and B. J. Chronic, Jr., 1949, Am. Assoc. Petroleum Geologists Bull., v. 33, no. 2, p. 197.

McCoy Head formation

Upper Carboniferous: New Brunswick, Canada.

A. O. Hayes and B. F. Howell, 1937, Geol. Soc. America Special Paper 5, p. 118.

McCoy Mountains formation

Upper Paleozoic or Triassic: California.

W. J. Miller, 1944, Calif. Jour. Mines and Geology, v. 40, no. 1, p. 32, 49–52.

McCracken member (of Elbert formation)

Upper Devonian: Subsurface in Utah, Arizona, Colorado, and New Mexico.

R. L. Knight and J. C. Cooper, 1955, Four Corners Geol. Soc. Guidebook [1st] Field Conf., p. 56, fig. 1.

McCraney limestone

Lower Mississippian: Illinois.

R. E. Grim, J. E. Lamar, and W. F. Bradley, 1937, Jour. Geology, v. 45, no. 8, p. 832, 836.

M. A. Stainbrook, 1950, Am. Jour. Sci., v. 248, no. 3, p. 194–212.

McCutcheon volcanic series

Tertiary: Texas.

G. K. Eifler, Jr., 1951, Geol. Soc. America Bull., v. 62, no. 4, p. 342.

McDonald shale member (of Monterey formation)

Miocene, upper: California.

J. A. Cushman and P. P. Goudkoff, 1938, Cushman Lab. Foram. Research Contr. v. 14, pt. 1, pl. 1.

R. R. Simonson and M. L. Krueger, 1942, Am. Assoc. Petroleum Geologist Bull., v. 26, no. 10, p. 1616–1617.

Macdonald Glen formation

Pennsylvanian: New Brunswick and Nova Scotia, Canada.

M. J. Copeland, 1955, Dissert. Abs., v. 15, no. 8, p. 1370.

Macdougal group

Cambrian: Northwest Territories (Mackenzie) and Yukon, Canada.

J. S. Stewart, 1944, Canadian Inst. Mining and Metallurgy Trans., v. 47, p. 163.

G. S. Hume and T. A. Link, 1945, Canada Geol. Survey Paper 45–16, p. 7–9.

Macedonia formation or cyclothem

Pennsylvanian: Illinois.

J. M. Weller, 1940, Ill. State Geol. Survey Rept. Inv. 71, p. 39, 40.

McGalls soil

Pleistocene: Bermuda Islands.

R. W. Sayles, 1931, Am. Acad. Arts Sci. Proc., v. 66, no. 11, p. 396.

McGrath gneiss
Precambrian (Algoman): Minnesota.
M. S. Woyski, 1949, Geol. Soc. America Bull., v. 60, no. 6, p. 1002, 1014, pl. 1.

McHale slate
Precambrian (Beltian): Washington.
Ian Campbell and J. S. Loofbourow, Jr., 1946, (abs.) Geol. Soc. America Bull. v. 57, no. 12, pt. 2, p. 1250.

Machegit conglomerate member (of Tagpochau limestone)
Miocene, lower: Mariana Islands (Saipan).
P. E. Cloud, Jr., R. G. Schmidt, and H. W. Burke, 1955, *in* Military Geology of Saipan, Mariana Islands: U. S. Army Corps of Engineers, Far East Command, v. 1, p. 9, pl. 2.

Macho pyroxene andesites
Tertiary, lower(?): New Mexico.
H. L. Jicha, Jr., 1954, N. Mex. State Bur. Mines Min. Res. Bull. 37, p. 39–40.

McIntosh formation
Eocene, middle to upper: Washington.
P. D. Snavely, Jr., and others, 1951, Am. Assoc. Petroleum Geologists Bull., v. 35, no. 5, p. 1052–1060.

McKee sandstone
Middle Ordovician: Texas (subsurface).
Taylor Cole, C. D. Cordry, and H. A. Hemphill, 1942, Am. Assoc. Petroleum Geologists Bull., v. 26, no. 2, p. 279–281.

Mackentire "red-beds" tongue (of Phosphoria formation)
Permian: Utah.
J. S. Williams, 1939, Am. Assoc. Petroleum Geologists Bull., v. 23, no. 1, p. 91–93.

MacKenzie Island graywacke
Precambrian: Ontario, Canada.
F. J. Pettijohn, 1937, Geol. Soc. America Bull., v. 48, no. 2, p. 187, 190.

McKinney Knob member (of Brodhead formation)
Lower Mississippian: Kentucky.
P. B. Stockdale, 1939, Geol. Soc. America Special Paper 22, p. 162.

Mackintosh Bay granite
Precambrian: Saskatchewan, Canada.
A. M. Christie, 1952, Canada Geol. Survey Mem. 269, p. 41–43.

MacLean Brook formation
Middle Cambrian: Nova Scotia, Canada.
R. D. Hutchinson, 1952, Canada Geol. Survey Mem. 263, p. 42–45.

McLellan Brook sub-member (of Thorburn member of Stellarton series)
Pennsylvanian: Nova Scotia, Canada.
W. A. Bell, 1940, Canada Geol. Survey Mem. 225, p. 44, 45 [1941].

McLeod Brook formation
Upper Cambrian(?) and Lower Ordovician: Nova Scotia, Canada.
R. D. Hutchinson, 1952, Canada Geol. Survey Mem. 263, p. 28–30.

McMichel member (of McKenzie Hill formation)
Lower Ordovician: Oklahoma.
C. E. Decker, 1939, Geol. Soc. America Bull., v. 50, no. 7, p. 1319, table 1.

MacMullin formation
Middle Cambrian: Nova Scotia, Canada.
R. D. Hutchinson, 1952, Canada Geol. Survey Mem. 263, p. 20–26.

McNabb limestone (in Senora formation)
Pennsylvanian (Desmoinesian): Oklahoma.
C. C. Branson, 1954, Okla. Geol. Survey Guidebook 2, p. 3, 5.

MacNeil formation
Upper Cambrian: Nova Scotia, Canada.
R. D. Hutchinson, 1952, Canada Geol. Survey Mem. 263, p. 26–28.

McRae formation
Upper Cretaceous and Tertiary(?): New Mexico.
V. C. Kelley and Caswell Silver, 1952, N. Mex. Univ. Pubs. in Geology 4, p. 114, 115–120.

McShan formation
Upper Cretaceous: Alamaba and Mississippi.
L. C. Conant and W. H. Monroe, 1945, U. S. Geol. Survey Oil and Gas Inv. Prelim. Map 37.

Macumber formation
Mississippian: Nova Scotia, Canada.
L. J. Weeks, 1945, Canada Geol. Survey Paper (Prelim. Map) 45–26.

Macuspana limestone
Oligocene: Tabasco, Mexico.
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Macuspana shale
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McWain sandstone
Pennsylvanian: Illinois.
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McWatters group
Precambrian (Archean): Quebec, Canada.
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Macy limestone or formation
Middle Ordovician: Missouri.
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Mafeking formation
Middle Devonian: Manitoba, Canada.
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Magdalena series
Middle Cretaceous: Oaxaca, Mexico.
Tomás Barrera, 1946, Guía geol. de Oaxaca: Mexico Universidad Nac., Inst. Geología, p. 54.

Magenta member (of Rustler formation)
Permian (Ochoa): New Mexico.
J. E. Adams, 1944, Am. Assoc. Petroleum Geologists Bull., v. 28, no. 11, p. 1614.

Mahala sandstone and conglomerate

Miocene, upper: California.

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Mahogany member (of Ankareh formation)

Triassic: Utah.

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Maiden Point sandstone

Ordovician: Newfoundland, Canada.

J. R. Cooper, 1937, Newfoundland Geol. Survey Bull. 9, p. 9–10.

Maikasagi River gneiss

Precambrian: Quebec, Canada.

J. E. Gilbert, 1947, Quebec Dept. Mines Prelim. Rept. 210, p. 8.

Mainchi formation

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Main Ridge formation

Cretaceous(?): Tobago, British West Indies.

J. C. Maxwell, 1948, Geol. Soc. America Bull., v. 59, no. 8, p. 806.

Mainsjie formation

Eocene, upper: Curaçao, Netherlands West Indies.

H. P. Schaub, 1948, Am. Assoc. Petroleum Geologists Bull., v. 32, no. 7, p. 1283, 1285–1288.

Maitland beds

Cambrian and Ordovician: Ontario, Canada.

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Maitlen phyllite

Cambrian: Washington.

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Makaino basaltic andesite

Pleistocene(?): Hawaiian Islands (Maui).

G. A. Macdonald *in* H. T. Stearns and G. A. Macdonald, 1942, Hawaii Div. Hydrography Bull. 7, p. 230, 246–247.

Makanaka drift and stage

Pleistocene: Hawaiian Islands (Hawaii).

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Makapipi basalt

Pleistocene(?): Hawaiian Islands (Maui).

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Makaweli formation

Pliocene(?): Hawaiian Islands (Kauai).

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Mak Hill glaciation
Pleistocene (Wisconsin) : Alaska.
E. H. Muller *in* T. L. Péwé and others, 1953, U. S. Geol. Survey Circ. 289, p. 2, 13 (table 1).

Makkovik granite
Precambrian (Timiskaming) : Newfoundland (Labrador), Canada.
E. H. Kranck, 1939, Newfoundland Geol. Survey Bull. 19, p. 32.

Malagan series
Paleozoic (Late Carbonic) : Arizona and New Mexico.
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Malam (Maremu) beds
Miocene: Caroline Islands (Kusaie).
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Malartic granodiorite
Precambrian: Quebec, Canada.
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Malartic volcanics
Precambrian: Quebec, Canada.
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Mallard Lake metagabbro
Precambrian: Ontario, Canada.
D. F. Hewitt, 1955, Ontario Dept. Mines Ann. Rept., v. 63, pt. 6, p. 14.

Mallemuk formation
See Mallemuk Mountain formation.

Mallemuk Mountain formation
Upper Carboniferous: Northeast Greenland.
Lauge Koch, 1929, Meddel. om Grønland, bind 73, afd. 2, nr. 2, p. 245–246.

Mamou member (of Foley formation)
Pliocene: Louisiana (subsurface).
P. H. Jones *in* P. H. Jones, A. N. Turcan, Jr., and H. E. Skibitzke, 1954, La. Dept. Conserv. Geol. Bull. 30, p. 60–61.

Mamural clay (of Springvale formation)
Miocene, upper: Trinidad, British West Indies.
H. H. Suter, 1951, Colonial Geology and Min. Res., v. 2, no. 3, p. 205 (table 13) [1952].

Manchester schist
Precambrian: Georgia.
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Mandata formation
Lower Devonian: Pennsylvania.
F. M. Swartz, 1938, (abs.) Geol. Soc. America Bull., v. 49, no. 12, pt. 2, p. 1923.
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Maness shale member (of South Tyler formation)

Cretaceous (Comanche): Texas (subsurface).

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Manila agglomerate

Eocene: Mariana Islands (Rota).

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Mannville formation

Lower Cretaceous: Alberta, Canada (subsurface).

A. W. Nauss, 1945, Am. Assoc. Petroleum Geologists Bull., v. 29, no. 11, p. 1609–1615.

Mansfield Head granodiorite

Devonian(?): Newfoundland, Canada.

H. J. MacLean, 1947, Newfoundland Geol. Survey Bull. 22, p. 8.

Mantua lentil (of Polecat Bench formation)

Paleocene: Wyoming.

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Manville formation

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Manyberries member (of Bearpaw formation)

Upper Cretaceous: Alberta, Canada.

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Manzanillo formation

Miocene: Cuba.

Stephen Taber, 1934, Geol. Soc. America Bull., v. 45, no. 8, p. 586–588.

Manzanita limestone member (of Cherry Canyon formation)

Permian (Guadalupe series): Texas and New Mexico.

F. E. Lewis, 1941, Am. Assoc. Petroleum Geologists Bull., v. 25, no. 1, p. 92.

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Map formation

Miocene: Caroline Islands (Map and Yap).

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Maple Summit sandstone

Upper Devonian (Chautauquan): Pennsylvania.

W. M. Laird, 1941, Pa. Topog. and Geol. Survey Progress Rept. 126, p. 8 (footnote).

Maquam group

Middle Ordovician (Chazyan): Vermont.

Marshall Kay and W. M. Cady, 1947, Science, v. 105, no. 2736, p. 601.

Mara formation
Precambrian or Paleozoic: British Columbia, Canada.
A. G. Jones, 1948, Canada Geol. Survey Paper 48–4, p. 3.

Maracas beds
Jurassic: Trinidad, British West Indies.
H. H. Suter, 1951, Colonial Geology and Min. Res., v. 2, no. 3, p. 190 [1952].

Maraval beds
Jurassic: Trinidad, British West Indies.
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Marble limestone
Precambrian (Chuaran): Arizona.
Charles Keyes, 1938, Pan-Am. Geologist, v. 70, no. 2, p. 107, 112–113.

Marble Island quartzite
Precambrian (Huronian): Northwest Territories (Keewatin), Canada.
J. B. Tyrrell, 1897, Canada Geol. Survey Ann. Rept., v. 9, p. 170.

Marburg schist
Precambrian (?): Pennsylvania and Maryland.
A. I. Jonas and G. W. Stose, 1938, Washington Acad. Sci Jour., v. 28, no. 8, p. 346–347.

Marca shale member (of Moreno formation)
Upper Cretaceous: California.
M. B. Payne, 1941, (abs.) Geol. Soc. America Bull., v. 52, no. 12, pt. 2, p. 1954.

March formation
Lower Ordovician (Beekmantown): Ontario, Canada.
A. E. Wilson, 1937, Royal Soc. Canada Trans., ser. 3, v. 31, sec. 4, p. 46, 52.

Maremu beds
See Malam beds.

Maretburg facies (of Muldraugh formation)
Lower Mississippian: Kentucky.
P. B. Stockdale, 1939, Geol. Soc. America Special Paper 22, p. 212–214.

Margrethetal series
Middle Devonian: Northeast Greenland.
Heinrich Butler, 1954, Meddel. om Grønland, bind 116, nr. 7, p. 45–54, 93–94, 97–98, 108, 113–114.

Maria formation
Post-Cambrian: California.
W. J. Miller, 1944, Calif. Jour. Mines and Geology, v. 40, no. 1, p. 25–28.

Maria plutonic complex
Paleozoic or Mesozoic: California.
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Maria Creek limestone member (of Shelburn formation)
Pennsylvanian: Indiana.
C. A. Malott, 1947, Ind. Acad. Sci. Proc., v. 57, p. 125 [1948].
F. E. Kottlowski, 1954, U. S. Geol. Survey Coal Inv. Map C 11.

Marian group
Precambrian (Archean): Northwest Territories (Mackenzie), Canada.
C. S. Lord, 1939, Canada Geol. Survey Paper 39–5, p. 6–7.

Mariana limestone

Pleistocene: Mariana Islands (Tinian and Saipan).

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Maridale formation

Cretaceous (Aptian or Albian): Trinidad, British West Indies.

A. G. Hutchison, 1938, Bol. Geología y Minería (Venezuela), v. 2, nos. 2–4 (English ed.), p. 232–233, 235 (table).

Marigot formation

Paleocene: Haiti.

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Mariiru beds

Eocene: Mariana Islands (Rota).

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Maringouin formation

Mississippian and/or Pennsylvanian: New Brunswick, Canada.

G. W. H. Norman, 1941, Canada Geol. Survey Map 647A.

Marino agglomerate

Eocene: Mariana Islands (Tinian).

Risaburo Tayama, 1939, Correlation of the strata of the South Sea Islands: Geol. Soc. Japan Jour., v. 46, no. 549, p. 346 (correlation table) [English translation in library of U. S. Geol. Survey; 1952, Coral reefs in the South Seas: Japan Hydrog. Office Bull,. v. 11, p. 48, table 4 [English translation in library of U. S. Geol. Survey, p. 57].

Marino beds

Eocene: Mariana Islands (Tinian).

Risaburo Tayama, 1952, Coral reefs in the South Seas: Japan Hydrog. Office Bull., v. 11, p. 51, table 4 [English translation in library of U. S. Geol. Survey, p. 61].

Marjo Canyon diorite

Age unknown: California.

K. J. Hsu, 1955, Calif. Univ. Dept. Geol. Sci. Bull., v. 30, no. 4, p. 300–301, map 1.

Markgraf member (of Joliet formation)

Silurian (Niagaran): Illinois.

D. L. Graf, 1952, Ill. Geol. Survey Rept. Inv. 161, p. 3.

Markham Mill formation

Pennsylvanian (Bendian): Oklahoma.

B. H. Harlton, 1938, Am. Assoc. Petroleum Geologists Bull., v. 22, no. 7, p. 854, 884–886.

Marlboro member (of Hudson River formation)

Ordovician: New York.

P. H. Bird, 1941, N. Y. Acad. Sci. Trans., ser. 2, v. 3, no. 5, p. 113–114.

Marmolejo formation
Lower Cretaceous: California.
N. L. Taliaferro, 1944, Am. Assoc. Petroleum Geologists Bull., v. 28, no. 4, p. 459.

Marmorvigen conglomerate
Upper Precambrian (Greenlandian) (?): North Greenland.
Erdhart Frankl, 1955, Meddel. om Grønland, bind 103, nr. 7, p. 13, 16, 32 (footnote).

Marquer formation
Pliocene, upper: Baja California, Mexico.
I. F. Wilson, 1948, Am. Assoc. Petroleum Geologists Bull., v. 32, no. 9, p. 1768.

Marquez shale member (of Reklaw formation)
Eocene, middle (Claiborne): Texas.
H. B. Stenzel, 1938, Tex. Univ. Bur. Econ. Geol. Pub. 3818, p. 20, 71–78 [1939].

Marron formation
Eocene: British Columbia, Canada.
H. S. Bostock, 1940, Canada Geol. Survey Map 341A.

Marrowstone shale
Oligocene: Washington.
J. W. Durham, 1944, Calif. Univ. Dept. Geol. Sci. Bull., v. 27, no. 5, p. 104 (fig. 2), 106.

Marshall diorite
Precambrian (?): Washington.
M. C. Schroeder, 1952, Wash. Dept. Conserv. Devel., Div. Mines and Geology Bull. 40, p. 7, 21–23, pl. 1.

Marshall Bay formation
Lower Cambrian: North Greenland.
Christian Poulsen, 1940, Meddel. Dansk Geol. Foren., bind 9, hefte 5, p. 638–639, 641.

Marshall Creek breccia
Upper Cretaceous (?): Utah.
J. H. Mackin, 1947, Utah Geol. Soc. Guidebook 2, p. 9–12.

Marsh Brook submember (of Thorburn member of Stellarton series)
Pennsylvanian: Nova Scotia, Canada.
W. A. Bell, 1940, Canada Geol. Survey Mem. 225, p. 44, 45 [1941].

Marsland formation
Miocene: Nebraska and Wyoming.
C. B. Schultz, 1938, Am. Jour. Sci., 5th ser., v. 35, no. 210, p. 443–444.

Marston member (of Mount Head formation)
Carboniferous: Alberta, Canada.
R. J. W. Douglas, 1953, Alberta Soc. Petroleum Geologists 3d Ann. Field Conf. and Symposium, p. 68.

Marten River granite
Precambrian (Archean): Ontario, Canada.
W. G. Q. Johnston, 1954, Geol. Soc. America Bull., v. 65, no. 11, p. 1054.

Marthaville formation
Eocene (Wilcox): Louisiana.
B. W. Blanpied and R. T. Hazzard, 1939, Shreveport Geol. Soc. Guidebook 14th Ann. Field Trip, p. 128 (correlation chart).
G. E. Murray, Jr., and E. P. Thomas, 1945, Am. Assoc. Pétroleum Geologists Bull., v. 29, no. 1, p. 60–61.

Martin Creek limestone

Middle Ordovician: Virginia.

R. L. Miller and W. P. Brosgé, 1950, U. S. Geol. Survey Oil and Gas Inv. Prelim. Map 104.

Martin Ridge schist

Pre-Ordovician(?): Washington.

E. A. Youngberg and T. L. Wilson, 1952, Econ. Geology, v. 47, no. 1, p. 3.

Marvin beds

See Marvin Quarry bed.

Marvin Quarry bed

Middle Devonian: Michigan.

[G. M. Ehlers], 1938, Mich. Acad. Sci., Arts and Letters Sec. Geology and Mineralogy [Guidebook] 8th Ann. Field Excursion, [fig. 2] after p. 8.

W. A. Kelly, 1940, Mich. Acad. Sci., Arts and Letters Sec. Geology and Mineralogy [Guidebook] 10th Ann. Field Excursion, [p. 1, figs. 4, 6, 7], map 1.

Marysville sand member (of Vashon drift)

Pleistocene: Washington.

R. C. Newcomb, 1952, U. S. Geol. Survey Water-Supply Paper 1135, p. 26, 27, pl. 1.

Mascoma group

Upper Devonian(?) (Oliverian magma series): New Hampshire.

C. A. Chapman and others, 1938, Geologic map and structure sections of the Mascoma quadrangle, New Hampshire (1 : 62,500): N. H. Highway Dept.

C. A. Chapman, 1939, Geol. Soc. America Bull., v. 50, no. 1, p. 143.

Mascot dolomite

Lower Ordovician: Tennessee and Virginia.

John Rodgers, 1943, Geologic map of Copper Ridge district, Hancock and Grainger Counties, Tennessee (1 : 24,000): U. S. Geol. Survey Strategic Minerals Inv. Prelim. Map.

C. R. L. Oder and H. W. Miller, 1945, Am. Inst. Mining and Metall. Engineers (Mining Technology, v. 9, no. 3) Tech. Pub. 1818, p. 1, 2 (table 1).

Masefau volcanics

Pliocene(?): Samoa Islands (Tutuila).

H. T. Stearns, 1944, Geol. Soc. America Bull., v. 55, no. 11, p. 1285–1288.

G. A. Macdonald, 1944, Geol. Soc. America Bull., v. 55, no. 11, p. 1336–1337.

Maskerchugg granite

Mississippian(?): Rhode Island.

A. W. Quinn, 1952, Bedrock geology of the East Greenwich quadrangle, Rhode Island: U. S. Geol Survey Geol. Quadrangle Map [GQ 17].

Mata Chin formation

Cretaceous and Eocene: Panama Canal Zone.

R. T. Hill, 1898, Harvard Coll. Mus. Comp. Zoology Bull., v. 28, no. 5, p. 187–189.

Matafoa breccia

Pliocene or Pleistocene, lower: Samoa Islands (Tutuila).

R. A. Daly, 1924, Carnegie Inst. Washington Pub. 340, p. 100, 105, 129.

Matafao trachyte

Pliocene or Pleistocene, lower: Samoa Islands (Tutuila).

R. A. Daly, 1924, Carnegie Inst. Washington Pub. 340, p. 105, 129–130.

Matalanim beds

See Metalanim beds.

Matane shale
Lower Ordovician: Quebec, Canada.
Rudolf Ruedemann, 1937, Am. Jour. Sci., ser. 5, v. 33, p. 59, 62.

Matansa limestone
Eocene, upper: Mariana Islands (Saipan).
Risaburo Tayama, 1938, Geomorphology, geology, and coral reefs of Saipan Island: Tropical Industry Inst., Palau, South Sea Islands, Bull. 1 [English translation in library of U. S. Geol. Survey, p. 52–53].
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Matansya limestone
See **Matansa limestone.**

Mataranim beds
See Metalanim beds.

Mather sediments
Precambrian (Keewatin): Ontario, Canada.
G. L. Fletcher and T. N. Irvine, 1954, Ontario Dept. Mines Ann. Rept., v. 63, pt. 5, p. 15.

Matthew formation
Precambrian or Lower Cambrian: British Columbia, Canada.
A. H. Lang, 1938, Canada Geol. Survey Paper 38–16, p. 13.

Maudlow conglomerate lentil (in Livingston formation)
Paleocene: Montana.
W. J. McMannis, 1955, Geol. Soc. America Bull., v. 66, no. 11, p. 1410, pl. 7.

Maurice formation
Upper Cambrian: Montana.
Erling Dorf and Christina Lochman, 1938, (abs.) Geol. Soc. America Proc. 1937, p. 275–276.

Maverick shale
Precambrian: Arizona.
B. S. Butler and E. D. Wilson, 1938, Ariz. Bur. Mines Bull. 145, Geol. Ser. 12, pl. 3.

Max Meadows fault breccia
Upper Paleozoic: Virginia.
B. N. Cooper and J. C. Haff, 1940, Jour. Geology, v. 48, no. 8, pt. 2, p. 945–974.

Maya formation
See Moya formation.

Mayfield member (of Mt. Simon formation)
Upper Cambrian: Illinois (subsurface).
J. S. Templeton, Jr., 1950, Ill. Acad. Sci. Trans., v. 43, p. 155.

Mayflower Lake quartz diorite
Pre-Carboniferous: New Brunswick, Canada.
A. O. Hayes and B. F. Howell, 1937, Geol. Soc. America Special Paper 5, p. 38.

May Pond member (of Littleton formation)
Lower Devonian: New Hampshire.
M. T. Heald, 1950, Geol. Soc. America Bull., v. 61, no. 1, p. 50–51, 70, 79.

Mayrán formation
Pleistocene(?): Coahuila, Mexico.
R. W. Imlay, 1936, Geol. Soc. America Bull., v. 47, no. 7, p. 1135.

Mazapil conglomerate
Tertiary: Zacatecas, Mexico.
Roger Van Vloten, 1955, Leidse Geol. Meded., deel 19, p. 154.

Mazatzal granite
Precambrian: Colorado and Arizona.
N. E. A. Hinds, 1936, Carnegie Inst. Washington Pub. 463, pt. 2, p. 101.

Meach Lake conglomerate
Precambrian: Ontario, Canada.
J. B. Mawdsley, 1930, Royal Soc. Canada Trans., ser. 3, v. 24, sec. 4, p. 104–107.

Mead limestone
Middle Cambrian: Arizona.
E. T. Schenk and H. E. Wheeler, 1942, Jour. Geology, v. 50, no. 7, p. 894–896.

Meadow rhyolitic tuff
Tertiary: Wyoming.
R. E. Wilcox, 1944, Geol. Soc. America Bull., v. 55, no. 9, p. 1052.

Meagher facies (of Belt series)
Precambrian: Alberta, Canada; and Montana.
C. L. Fenton and M. A. Fenton, 1937, Geol. Soc. America Bull., v. 48, no. 12, p. 1877.

Mealy Mountains anorthosite
Precambrian: Newfoundland (Labrador), Canada.
D. M. Baird, 1953, Newfoundland Geol. Survey Inf. Circ. 4 (revised), p. 137.

Mecca formation
Miocene: California.
T. W. Dibblee, Jr., 1954, Calif. Dept. Nat. Res., Div. Mines Bull. 170, chap. 2, p. 24.

Medicine flow
Recent: California.
H. A. Powers, 1932, Am. Mineralogist, v. 17, no. 7, p. 276, 288, pl. 1.

Medicine Bow Peak quartzite
Precambrian: Wyoming.
W. J. Kivi and R. W. Mallory, 1940, *in* Kans. Geol. Soc. Guidebook 14th Ann. Field Conf., p. 107.

Medicine Lodge beds
Miocene(?): Idaho and Montana.
Robert Scholten, K. A. Keenmon, and W. O. Kupsch, 1955, Geol. Soc. America Bull., v. 66, no. 4, p. 369–370, pl. 1.

Medicine Lodge member (of Bearpaw formation)
Upper Cretaceous: Alberta, Canada.
D. M. Loranger and J. Gleddie, 1953, Alberta, Soc. Petroleum Geologosts 3d Ann. Field Conf. and Symposium, p. 164–165, 167.

Medicine Lodge volcanics
Oligocene, upper, to Miocene, lower: Montana.
Robert Scholten, K. A. Keenmon, and W. O. Kupsch, 1955, Geol. Soc. America Bull., v. 66, no. 4, p. 375–376, pl. 1.

Medill volcanic zone (of Eagleford formation)
Cretaceous: Texas.
R. T. Hazzard, 1939, Shreveport Geol. Soc. Guidebook 14th Ann. Field Trip, p. 138, 139.

Medinilla (Lower and Upper) limestone
Oligocene [Aquitanian]: Mariana Islands (Farallon de Medinilla).
Risaburo Tayama, 1952, Japan Hydrog. Office Bull., v. 11, table 4.

Medusa member (of Pecatonica formation)
Middle Ordovician: Illinois.
J. S. Templeton and H. B. Willman, 1952, Tri-State Geol. Soc. Guidebook 16th Ann. Field Conf., figs. 3, 10, 16.

Meek group
Pennsylvanian: Wyoming and Colorado.
G. E. Condra, E. C. Reed, and O. J. Scherer, 1940, Nebr. Geol. Survey Bull. 13, p. 2, 3, 22, 44.

Meetinghouse slate
Middle Ordovician (?): Vermont and New Hampshire.
C. G. Doll, [1945?], Vt. State Geologist 24th Rept., p. 19.

Mejas beds or limestone
See Mejias limestone.

Mejias limestone
Oligocene: Trinidad, British West Indies.
Alfred Senn, 1940, Am. Assoc. Petroleum Geologists Bull., v. 24, no. 9, p. 1580 (chart).
H. H. Renz, 1942, 8th Am. Sci. Cong. Proc., v. 4, table facing p. 572.

Melajo clay
Pleistocene: Trinidad, British West Indies.
H. G. Kugler, 1950, Asociación Venezolano de Geolgía, Minería y Petróleo Bol., tomo 2, no. 1, p. 48 (correlation chart), 74.

Melbourne limestone
Lower Cambrian: Quebec, Canada.
H. C. Cooke, 1954, Geol. Assoc. Canada Proc., v. 6, pt. 2, p. 40–41.

Melita formation
Upper Jurassic: Manitoba, Canada; and North Dakota.
D. F. Stott, 1955, Manitoba Dept. Mines and Nat. Res. Pub. 54–2, p. 22–25, 37, 45–47.

Melville formation
Paleocene: Montana.
G. G. Simpson, 1937, U. S. Natl. Mus. Bull. 169, p. 25.

Memramcook formation
Mississippian: New Brunswick, Canada.
G. W. H. Norman, 1941, Canada Geol. Survey Map 647A.

Menan tuff
Pleistocene: Idaho.
H. T. Stearns, Lynn Crandall, and W. G. Steward, 1938, U. S. Geol. Survey Water-Supply Paper 774, pl. 4 (geol. map).

Menchaca limestone
Lower Cretaceous: Coahuila, Mexico.
R. W. Imlay, 1940, Geol. Soc. America Bull., v. 51, no. 1, p. 123.

Menihek formation
Precambrian (Proterozoic): Quebec and Newfoundland (Labrador), Canada.
H. R. Rice, 1949, Canadian Mining Jour., v. 70, no. 9, p. 71–72.
J. M. Harrison, 1952, Canada Geol. Survey Paper 52–20, p. 13.

Mercersburg formation
Middle Ordovician: Pennsylvania.
L. C. Craig, 1941, (abs.) Geol. Soc. America Bull., v. 52, no. 12, pt. 2, p. 1964.

Merchiston formation
Cretaceous(?): Tobago, British West Indies.
J. C. Maxwell, 1948, Geol. Soc. America Bull., v. 59, no. 8, p. 823, 828.

Mercy sandstone lentil (in Tierra Loma shale member of Moreno formation)
Upper Cretaceous: California.
M. B. Payne, 1941, (abs.) Geol. Soc. America Bull., v. 52, no. 12, pt. 2, p. 1954.

Meriwitica tongue
Lower and/or Middle Cambrian: Arizona.
E. D. McKee, 1945, Carnegie Inst. Washington Pub. 563, p. 14, 29, 80–82.

Merizo limestone
Recent: Mariana Islands (Guam).
Risaburo Tayama, 1952, Coral reefs in the South Seas: Japan Hydrog. Office Bull., v. 11, p. 58–59, table 4 [English translation in library of U. S. Geol. Survey. p. 69].

Mermentau member (of Le Moyen formation)
Recent: Louisiana (subsurface and surface).
P. H. Jones *in* P. H. Jones, A. N. Turcan, Jr., and H. E. Skibitzke, 1954, La. Dept. Conserv. Geol. Bull. 30, p. 90–94.

Merrimac granodiorite
Late Jurassic(?): California.
Anna Hietanen, 1951, Geol. Soc. America Bull., v. 62, no. 6, p. 583, 584, pl. 1.

Mesa formation
Upper Mesozoic or Tertiary, lower: Sonora, Mexico.
W. G. Valentine, 1936, Geol. Soc. America Bull., v. 47, no. 1, p. 74–76.

Mesa Rica sandstone member (of Purgatoire formation)
Lower Cretaceous: New Mexico.
Ernest Dobrovolny and C. H. Summerson, 1946, U. S. Geol. Survey Oil and Gas Inv. Prelim. Map 62, sheet 1.

Mescaleran series
Paleozoic (Late Carbonic): Arizona and New Mexico.
Charles Keyes, 1940, Pan-Am. Geologist, v. 74, no. 2, p. 106 (chart).

Meseta Blanca sandstone member (of Yeso formation)
Permian: New Mexico.
G. H. Wood and S. A. Northrop, 1946, U. S. Geol. Survey Oil and Gas Inv. Prelim. Map 57.

Mesillan series
Paleozoic (Mid-Siluric): New Mexico.
[C. R.] Keyes, 1942, Pan-Am. Geologist, v. 77, no. 4, p. 319.

Mesquite schist
Precambrian(?): California.
T. W. Dibblee, Jr., 1952, Calif. Dept. Nat. Res., Div. Mines Bull. 160, p. 14.

Metacom granite-gneiss
Pre-Carboniferous: Rhode Island.
A. W. Quinn and G. H. Springer, 1954, U. S. Geol. Survey Geol. Quadrangle Map GQ 42.

Metalanim (Matalanim) beds
Miocene: Caroline Islands (Ponape).
Risaburo Tayama, 1939, Correlation of the strata of the South Sea Islands: Geol. Soc. Japan Jour., v. 46, no. 549, p. 347 (correlation table) [English translation in library of U. S. Geol. Survey]; 1952, Coral reefs in the South Seas: Japan Hydrog. Office Bull., v. 11, p. 69, table 5 [English translation in library of U. S. Geol. Survey, p. 84].

Metaline limestone formation
Middle Cambrian: Washington.
C. F. Park, Jr., 1938, Econ. Geology, v. 33, no. 7, p. 713, 714 (fig. 2).
C. F. Park, Jr., and R. S. Cannon, Jr., 1943, U. S. Geol. Survey Prof. Paper 202, p. 6, 17–19, pl. 1.

Methow gneiss
Age uncertain (pre-Chelan batholith): Washington.
J. D. Barksdale, 1948, Northwest Science, v. 22, no. 4, p. 165, 166–167.

Metis shale
Lower Ordovician: Quebec, Canada.
C. D. Walcott, 1920, Smithsonian Misc. Coll., v. 67, no. 6, p. 267–268.

Metralla sandstone member (of Tejon formation)
Eocene: California.
J. G. Marks, 1941, (abs.) Geol. Soc. America Bull., v. 52, no. 12, pt. 2, p. 1922.

Mexicana stage
Quaternary: Mexico.
A. R. V. Arellano, 1953, Congreso Cient. Mexicano Mem., tomo 3, p. 182, 186.

Mezcal beds
Lower Cretaceous: Michoacan, Mexico.
E. J. Guzman, 1950, Asociación Mexicana Geólogos Petroleros Bol., v. 2, no. 2, strat. columns.

Midas formation
Precambrian and/or Cambrian: British Columbia, Canada.
S. S. Holland, 1954, British Columbia Dept. Mines Bull. 34, p. 19–22.

Midas limestone member (of Midas formation)
Precambrian and/or Cambrian: British Columbia, Canada.
S. S. Holland, 1954, British Columbia Dept. Mines Bull. 34, p. 22.

Midco (lacustrine) member (of Wellington formation)
Permian: Oklahoma.
G. O. Raasch, 1941, (abs.) Geol. Soc. America Bull., v. 52, no. 12, pt. 2, p. 1928.

Midden-Curaçao beds
Upper Cretaceous or Paleocene: Curaçao, Netherlands West Indies.
G. J. H. Molengraaff, 1929, Geologie en geohydrologie van het Eiland Curaçao: Delft, J. Waltman, Jr., p. 23–25, 56.

Middlebury limestone
Middle Ordovician (Chazyan): Vermont.
W. M. Cady, 1945, Geol. Soc. America Bull., v. 56, no. 5, p. 524, 552–554.

Middle Creek limestone ledge (in Graneros formation)
Cretaceous: South Dakota.
M. E. Wing, 1940, S. Dak. State Geol. Survey Rept. Inv. 35, p. 6, chart facing p. 10.

Middle Curaçao beds
See Midden-Curaçao beds.

Middle River group
Silurian or Lower Devonian: Nova Scotia, Canada.
L. J. Weeks, 1954, Canada Geol. Survey Mem. 277, p. 57–62.

Midnight Peak formation
Upper Cretaceous: Washington.
J. D. Barksdale, 1948, Northwest Science, v. 22, no. 4, p. 165, 173–174.

Midridge limestone
Lower Mississippian (Kinderhook): Utah.
C. S. Bacon, Jr., 1948, Geol. Soc. America Bull., v. 59, no. 10, p. 1037, fig. 2.

Miette member (of Minnewanka formation)
Devonian: Alberta, Canada.
E. M. Kindle, 1929, Am. Jour. Sci., ser. 5, v. 18, p. 180–181.

Mifflin member (of Platteville formation)
Middle Ordovician: Wisconsin.
C. A. Bays, 1938, (abs.) Geol. Soc. America Proc. 1937, p. 269.

Milan limestone member (of Wellington formation)
Permian: Kansas.
G. H. Norton, 1937, Am. Assoc. Petroleum Geologists Bull., v. 21, no. 12, p. 1557; 1939, v. 23, no. 12, p. 1757–1759.

Mildale gabbro
Precambrian (Archean): Quebec, Canada.
W. W. Weber, 1951, Quebec Dept. Mines Prelim. Rept. 255, p. 11.

Mile End formation
Middle Ordovician (Trenton): Quebec, Canada.
T. H. Clark, 1944, Royal Soc. Canada Trans., sec. 4, v. 38, p. 29; 1952, Quebec Dept. Mines Geol. Rept. 46, p. 63–64.

Miles Canyon basalts
Tertiary: Yukon, Canada.
J. O. Wheeler, 1952, Canada Geol. Survey Paper 52–30, p. 8–9.

Milk Creek beds
Pliocene, lower or middle: Arizona.
C. O. Reed, 1950, Plateau, v. 22, no. 4, p. 75–76.

Milkish Head granite and granodiorite
Pre-Carboniferous: New Brunswick, Canada.
A. O. Hayes and B. F. Howell, 1937, Geol. Soc. America Special Paper 5, p. 38–39.

Mill member (of Red Rose formation)
Upper Jurassic and Lower Cretaceous: British Columbia, Canada.
R. E. Sommers, 1955, British Columbia Bur. Mines Ann. Rept. 1954, p. A89–A90.

Millard limestone
Middle Cambrian: Utah.
H. E. Wheeler, 1948, Nev. Univ. Bull., Geology and Mining Ser., no. 47, p. 35–36.

Millboro shale
Middle and Upper Devonian: Virginia.
B. N. Cooper, 1939, Va. Geol. Survey Bull. 55, p. 42–44.
Charles Butts, 1940, Va. Geol. Survey Bull. 52, pt. 1, p. 308–314.

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Mill City glacial stage
Pleistocene: Oregon.
T. P. Thayer, 1939, Oreg. State Dept. Geology and Mineral Res. Bull. 15, p. 20, 21–23.

Miller Lake porphyry
Precambrian: Ontario, Canada.
A. N. Miller, 1938, Canadian Mining Jour., v. 59, no. 11, p. 608.

Miller Mountain formation
Lower Cambrian: Nevada.
H. G. Ferguson, S. W. Muller, and S. H. Cathcart, 1954, U. S. Geol. Survey Geol. Quadrangle Map GQ 45.

Millersville cyclothem (including Millersville limestone)
Pennsylvanian: Illinois.
E. F. Taylor and G. H. Cady, 1944, Ill. State Geol. Survey Rept. Inv. 93, p. 22–24.
H. R. Wanless, 1955, Am. Assoc. Petroleum Geologists Bull., v. 39, no. 9, p. 1764 (table 2).

Millerton porphyry
Precambrian: Ontario, Canada.
J. Blackshaw, 1943, Canadian Inst. Mining and Metallurgy Trans., v. 46, p. 227.

Mills formation
Upper Cretaceous (Chico): California.
J. M. Kirby, 1942, (abs.) Am. Assoc. Petroleum Geologists Bull., v. 26, no. 5, p. 899; 1943, Calif. Dept. Nat. Res., Div. Mines Bull. 118, pt. 3, p. 606.

Millsite flow (in Yellowknife group)
Precambrian: Northwest Territories (Mackenzie), Canada.
C. E. G. Brown and A. S. Dadson, 1953, Canadian Inst. Mining and Metallurgy Trans., v. 56, p. 70–71.

Mill Street conglomerate (of Woodhill member of Franconia formation)
Upper Cambrian: Minnesota.
C. A. Nelson, 1951, Jour. Paleontology, v. 25, no. 6, p. 774.
R. R. Berg, 1954, Geol. Soc. America Bull., v. 65, no. 9, p. 869–870.

Milneland granite
Lower Paleozoic (Caledonian): East Greenland.
Herman Aldinger, 1935, Meddel. om Grønland, bind 99, nr. 1, p. 54, pl. 3.

Milne Land quartzite
Age unknown: East Greenland.
Alfred Rosenkrantz *in* Lauge Koch, 1929, bind 73, afd. 2, nr. 1, p. 139.

Milo tongue (of West River shale)
Upper Devonian: New York.
W. L. Grossman, 1944, Geol. Soc. America Bull., v. 55, no. 1, p. 65–66.

Mimbres conglomerate
Miocene(?) to Pliocene: New Mexico.
R. M. Hernon, W. R. Jones, and S. L. Moore, 1953, N. Mex. Geol. Soc. Guidebook 4th Field Conf., p. 118 (map), 120.

Mimbres Peak formation
Tertiary, upper: New Mexico.
F. J. Kuellmer and others, 1953, *in* N. Mex. Geol. Soc. Guidebook 4th Field Conf., p. 42 (map), 47, 50 (map).
H. L. Jicha, Jr., 1954, N. Mex. State Bur. Mines Min. Res., Bull. 37, p. 39, 45–47.

Miminiska series
Precambrian: Ontario, Canada.
V. K. Prest, 1944, Ontario Dept. Mines Ann. Rept., v. 51, pt. 3, p. 5–7.

Mina Grande formation
Permian: Texas.
C. C. Rix, 1953, *in* W. Tex. Geol. Soc. [Guidebook] Spring Field Trip, May 28–30, p. 5, 14, 15.

Minaville member (of Canajoharie formation)
Middle Ordovician (Mohawkian): New York.
G. M. Kay, 1937, Geol. Soc. America Bull., v. 48, no. 2, p. 268–270.

Minco division
Permian: Oklahoma and Kansas.
D. A. Green, 1937, Am. Assoc. Petroleum Geologists Bull., v. 21, no. 12, p. 1521–1525.

Mindi Hill beds
Eocene: Panama Canal Zone.
R. T. Hill, 1898, Harvard Coll. Mus. Comp. Zoology Bull., v. 28, no. 5 p. 180–181, 236.

Mine Creek cyclothem (including Mine Creek shale)
Pennsylvanian (Des Moines): Kansas, Missouri, and Nebraska.
J. M. Jewett, 1941, Kans. State Geol. Survey Bull. 38, pt. 11, p. 318–320; 1945, Bull. 58, p. 32–34, 65.

Mineral cyclothem or formation
Pennsylvanian (Des Moines): Kansas.
G. E. Abernathy, 1937, Kans. Geol. Soc. Guidebook 11th Ann. Field Conf., p. 18, 20, 22; 1938, Kans. Geol. Soc. Trans., v. 41, p. 193, 195.

Mineral Bluff formation
Cambrian: Georgia.
V. J. Hurst, 1955, Ga. Geol. Survey Bull. 63, p. 55–56.

Mineral Fork tillite
Precambrian: Utah.
A. E. Granger and others, 1952, Utah Geol. Soc. Guidebook 8, p. 4–6.

Minersville shale member (of Friedrich formation)
Pennsylvanian (Virgil): Nebraska and Iowa.
G. E. Condra and E. C. Reed, 1938, Nebr. Geol. Survey Paper 12, p. 9.

Mingo River formation
Lower Ordovician: Northwest Territories (Devon Island), Canada.
V. E. Kurtz, A. H. McNair, and D. B. Wales, 1952, Am. Jour. Sci., v. 250, no. 9, p. 645–646.

Mings Bight formation
Ordovician (?): Newfoundland, Canada.
K. D. Watson, 1947, Newfoundland Geol. Survey Bull. 21, p. 10.

Mining Mountain granite gneiss
Precambrian: Ontario, Canada.
D. F. Hewitt, 1954, Ontario Dept. Mines Ann. Rept., v. 62, pt. 5, p. 27.

Mink Creek conglomerate
Pliocene: Idaho and Utah.
R. D. Adamson, C. T. Hardy, and J. Stewart Williams, 1955, Utah Geol. Soc. Guidebook 10, p. 2, 7–8.

Minnechaduza beds (in Ash Hollow formation)

Pliocene (Ogallala) : Nebraska.

R. A. Stirton, 1939, Am. Jour. Sci., v. 237, no. 6, p. 433.
M. K. Elias, 1942, Geol. Soc. America Special Paper 41, p. 142.

Minneiska member (of Franconia formation)

Upper Cambrian (St. Croixian) : Minnesota.

C. R. Stauffer, G. M. Schwartz, and G. A. Thiel, 1938, (abs.) Geol. Soc. America Bull., v. 49, no. 12, pt. 2, p. 1902; 1939, v. 50, no. 8, p. 1239.

Minto basalts

Pliocene to Pleistocene: Oregon.

T. P. Thayer, 1936, Jour. Geology, v. 44, no. 6, p. 705, 709 (fig. 2), 713 (fig. 3).

Minto formation

Pennsylvanian: New Brunswick, Canada.

J. E. Muller, 1949, Canada Geol. Survey Paper 49–13 (Prelim. Map 49–13A).

Minturn formation

Pennsylvanian and Permian(?) : Colorado.

Ogden Tweto, 1949, Colo. Sci. Soc. Proc., v. 15, no. 4, p. 152, 194–198, 205–206.

Minwah limy gneiss

Cambro-Ordovician(?) : Maine.

L. W. Fisher, 1936, Am. Mineralogist, v. 21, no. 5, p. 323.

Miraflores basalt

Miocene, lower: Panama Canal Zone.

[T. F. Thompson], 1943, Panama Canal, Special Eng. Div., 3d Locks Proj., pt. 2, chap. 3, p. 26.
S. M. Jones, 1950, Geol. Soc. America Bull., v. 61, no. 9, table 2.

Miroflores pumice

Pre-Eocene: Panama Canal Zone.

R. T. Hill, 1898, Harvard Coll. Mus. Comp. Zoology Bull., v. 28, no. 5, p. 198–199, 209.

Mirikattan limestone

Recent: Mariana Islands (Rota).

Risaburo Tayama, 1939, Correlation of the strata of the South Sea Islands: Geol. Soc. Japan Jour., v. 46, no 549, p. 346 (correlation table) [English translation in library of U. S. Geol. Survey]; 1952, Coral reefs in the South Seas: Japan Hydrog. Office Bull., v. 11, p. 58, table 4 [English translation in library of U. S. Geol. Survey, p. 69].

Misopá shales

Oligocene: Tabasco and Chiapas, Mexico.

G. P. Salas and Ernesto Lopez Ramos, 1950, Asociación Mexicana Geólogos Petroleros Bol. v. 3, nos. 1–2, p. 30–31.

Missisquoibay series

Cambrian and Ordovician: Quebec, Canada.

A. W. Grabau, 1936, Paleozoic formations in the light of the pulsation theory, v. 2, Cambrovician pulsation, pt. 1, Caledonian and St. Lawrence geosynclines: Peiping, China, University Press, Natl. Univ. Peking, p. 364.

Missler member (of Meade formation)

Pleistocene: Kansas.

C. W. Hibbard, 1949, Mich. Univ. Mus. Paleontology Contr., v. 7, no. 4, p. 67–68.

Mitchell Mesa rhyolite
Tertiary: Texas.
S. S. Goldich and M. A. Elms, 1946, (abs.) Geol. Soc. America Bull., v. 57, no. 12, pt. 2, p. 1197; 1949, v. 60, no. 7, p. 1161–1162.

Mitre Peak complex
Tertiary, lower: Texas.
R. L. Ives, 1941, Am. Jour. Sci., v. 239, no. 5, p. 346–348, 351–352.

Mixtepec–El Consuelo beds
Lower Jurassic: Oaxaca, Mexico.
G. P. Salas, 1949, Asociación Mexicana Geólogos Petroleros Bol., v. 1, no. 2, p. 92–97.

Mobridge member (of Pierre shale)
Upper Cretaceous: South Dakota.
W. V. Searight, 1937, S. Dak. State Geol. Survey Rept. Inv. 27, p. 44–49, pl. 3.

Moccasin Gap member (of Unicoi formation)
Lower Cambrian: Tennessee.
H. W. Ferguson and W. B. Jewell, 1951, Tenn. Div. Geol. Bull. 57, p. 22–23.

Moccasin Springs formation
Middle Silurian (Niagaran): Missouri, Oklahoma, and Illinois.
H. A. Lowenstam, 1949, Ill. State Geol. Survey Rept. Inv. 145, p. 16–18.

Moenave formation
Upper Triassic(?): Arizona.
G. A. Williams, 1954, U. S. Geol. Survey Trace Elements Inv. Rept. TEI–440, p. 34.
Paul Averitt and others, 1955, Am. Assoc. Petroleum Geologists Bull., v. 39, no. 12, p. 2517, 2519.

Moisie series
Precambrian (Grenville): Quebec, Canada.
H. R. Hogan, 1954, (abs.) Canadian Mining Jour., v. 75, no. 6, p. 104.

Mokelumne formation
Permian: California.
N. L. Taliaferro, 1951, Calif. Dept. Nat. Res., Div. Mines Bull. 154, pl. 1.

Mokuone member (of Makaweli formation)
Pliocene(?): Hawaiian Islands (Kauai).
G. A. Macdonald, D. A. Davis, and D. C. Cox, 1954, Volcano Letter 526, p. 2.

Molalla formation
Pliocene: Oregon.
E. M. Baldwin, 1950, Geol. Soc. Oreg. Country News Letter, v. 16, no. 11, p. 92.
W. D. Lowry and E. M. Baldwin, 1952, Geol. Soc. America Bull., v. 63, no. 1, p. 13–14, pl. 2.

Moleen formation
Lower Pennsylvanian (Springeran-Atokan): Nevada.
R. H. Dott, Jr., 1955, Am. Assoc. Petroleum Geologists Bull., v. 39, no. 11, p. 2234–2243, fig. 2.

Molly Gibson formation
Lower Cretaceous: Arizona.
A. A. Stoyanow, 1937, (abs.) Geol. Soc. America Proc. 1936, p. 297 (table); 1949, Geol. Soc. America Mem. 38, p. 30–31.

Monach formation
Upper Jurassic or Lower Cretaceous: British Columbia, Canada.
W. H. Matthews, 1947, British Columbia Dept. Mines Bull. 24, p. 11–12.

Monahans formation
Quaternary: Texas.
R. M. Huffington and C. C. Albritton, Jr., 1941, Am. Jour. Sci., v. 239, no. 5, p. 329–331.

Monarch glacial stage
Pleistocene (upper Wisconsin): Colorado.
R. L. Ives, 1937, (abs.) Colo. Univ. Studies, v. 25, no. 1, p. 75; 1938, Geol. Soc. America Bull., v. 49, no. 7, p. 1060.

Monastery formation
Lower Cambrian: Vermont.
P. H. Osberg, 1952, Vt. Geol. Survey Bull. 5, p. 42–49, 116.

Monck Lake leuco-granite gneiss
Precambrian: Ontario, Canada.
Jack Satterly and D. F. Hewitt, 1955, Ontario Dept. Mines Geol. Circ. 2, p. 5.

Moncrief member (of Wasatch formation)
Eocene, lower: Wyoming.
R. P. Sharp, 1948, Jour. Geology, v. 56, no. 1, p. 1–2.

Moncton group
Mississippian: New Brunswick, Canada.
J. S. Stewart, 1941, Canada Geol. Survey Map 604A.

Mongeant limestone member (of Saint Bartholomew formation)
Eocene, middle: St. Bartholomew, French West Indies.
R. A. Christman, 1953, Geol. Soc. America Bull., v. 64, no. 1, p. 69.

Mono Craters obsidian
Pleistocene: California.
W. C. Putnam, 1940, (abs.) Geol. Soc. America Bull., v. 51, no. 12, pt. 2, p. 1939.

Monos beds
Upper Pennsylvanian: Sonora, Mexico.
Charles Schuchert, 1935, Historical geology of the Antillean-Caribbean region: New York, John Wiley and Sons, p. 138.

Montana Peak formation
Cenozoic(?): Arizona.
B. P. Webb and K. C. Coryell, 1954, U. S. Atomic Energy Comm. RME–2009, p. 7, pl. 1.

Mont Celsius series
Devonian: Northeast Greenland.
Heinrich Butler, 1935, Naturf. Gesell. Schaffhausen Mitt., Heft 12, p. 26–29, fig. 4.

Montediablan stage
Pliocene, early: California.
D. E. Savage, 1955, Calif. Univ. Pubs. Geol. Sci., v. 31, no. 1, p. 19–24.

Monteith formation
Upper Jurassic or Lower Cretaceous: British Columbia, Canada.
W. H. Matthews, 1947, British Columbia Dept. Mines Bull. 24, p. 10–11.

Montezuma formation
Pleistocene: California.
C. E. Weaver, 1949, Geol. Soc. America Mem. 35, p. 16 (table 3), 103–106.

Montgomery formation
Pleistocene: Louisiana.
H. N. Fisk, 1938, La. Dept. Conserv. Geol. Bull. 10, p. 160–163.

Mont Hogbom series

Upper Devonian: Northeast Greenland.

Henrich Butler, 1935, Naturf. Gesell. Schaffhausen Mitt., Heft 13, p. 5.

Montreal formation

Middle Ordovician (Trenton): Quebec, Canada.

T. H. Clark, 1944, Royal Soc. Canada Trans., sec. 4, v. 38, p. 29; 1952, Quebec Dept. Mines Geol. Rept. 46, p. 65.

Montserrat sand member (of Upper Brasso formation)

Miocene: Trinidad, British West Indies.

Ernst Lehner, 1935, [France] Office national des combustibles liquides Annales, 10e année, no. 4, p. 700, 716 (table).

H. G. Kugler, 1953, Vereinigung Schweizer Petroleum Geologen u. Ingenieure Bull., v. 20, no. 59, p. 54.

Moon Hill quartzite member (of Skookum formation)

Precambrian: Washington.

M. C. Schroeder, 1952, Wash. Dept. Conserv. Devel., Div. Mines and Geology Bull. 40, p. 9, 13–14.

Moore formation

Pennsylvanian (Atokan): Oklahoma (subsurface).

R. R. Wheeler, 1947, World Oil, v. 127, no. 7, p. 156, 161.

Moore Hill formation

Middle Ordovician (Black River): Ontario, Canada.

V. J. Okulitch, 1939, Royal Canadian Inst. Trans., v. 22, pt. 2, p. 329–331.

Moorehouse member (of Onondaga limestone)

Middle Devonian: New York.

W. A. Oliver, Jr., 1954, Geol. Soc. America Bull., v. 65, no. 7, p. 628–629, 637.

Mooring Cove volcanics

Ordovician(?): Newfoundland, Canada.

W. H. Twenhofel, 1947, Am. Jour. Sci., v. 245, no. 2, p. 92.

Mooringsport formation

Lower Cretaceous (Comanche series): Subsurface in Arkansas, Louisiana, and Texas.

R. W. Imlay, 1940, Ark. Geol. Survey Inf. Circ. 12, p. 36–37.

Moose Jaw group

Devonian: Subsurface in Saskatchewan and Manitoba, Canada.

J. R. Ower, 1952, Oil in Canada, v. 5, no. 1, p. 54; 1953, Canadian Inst. Mining and Metallurgy Trans., v. 56, p. 395.

Moose Lake conglomerate

Precambrian (Knife Lake): Minnesota.

J. T. Stark and V. G. Sleight, 1939, Geol. Soc. America Bull., v. 50, no. 7, p. 1032 (table 2), 1038 (fig. 4).

Moose Lake granite

Precambrian: Quebec, Canada.

H. C. Cooke, W. F. James, and J. B. Mawdsley, 1931, Canada Geol. Survey Mem. 166, p. 128–129.

Moose Mountain member (of Kootenay formation)

Lower Cretaceous: Alberta, Canada.

H. H. Beach, 1943, Canada Geol. Survey Mem. 236, p. 37.

Moose River formation
Lower and Middle Devonian: Ontario, Canada.
A. E. Wilson, J. S. Stewart, and J. F. Caley, 1941, Royal Soc. Canada Trans., ser. 3, v. 35, sec. 4, p. 169.

Moqui member (of Moenkopi formation)
Lower Triassic: Arizona.
E. D. McKee, 1954, Geol. Soc. America Mem. 61, p. 18, 19.

Morales caliche
Pleistocene: Cuenca de México, Mexico.
Kirk Bryan, 1948, Soc. Geol. Mexicana Bol., tomo 13, p. 12, pl. 1.

Moravian Heights formation
Precambrian: Pennsylvania.
B. L. Miller, 1939, Pa. Geol. Survey, ser. 4, Bull. G 16, p. 6.
D. M. Fraser *in* B. L. Miller, D. M. Fraser, and R. L. Miller, 1939, Pa. Geol. Survey, ser. 4, Bull. C 48, p. 170–175.

Morcate formation
Oligocene, lower: Cuba.
Jorge Brodermann, 1949, Soc. Cubana Ingenieros Rev., v. 48, no. 3, chart facing p. 330.

Moreau gravels
Pleistocene (pre-Wisconsin): South Dakota.
J. C. Mickelson and C. L. Baker, 1950, Areal geology of the Mouth of Moreau quadrangle [geol. map, 1 : 62,500]: S. Dak. Geol. Survey.

Morehead facies (of Brodhead formation)
Lower Mississippian: Kentucky.
P. B. Stockdale, 1939, Geol. Soc. America Special Paper 22, p. 177–191.

Morehouse formation
Pennsylvanian(?): Subsurface in Louisiana and Arkansas.
R. W. Imlay, 1940, Ark. Geol. Survey Inf. Circ. 12, p. 7–8.

Moretown formation
Ordovician: Vermont.
P. H. Osberg, 1952, Vt. Geol. Survey Bull. 5, p. 116, 117.

Morgan Creek limestone member (of Wilberns formation)
Upper Cambrian: Texas.
Frederick Romberg and V. E. Barnes, 1944, Geophysics, v. 9, no. 1, p. 88.
P. E. Cloud, Jr., V. E. Barnes, and Josiah Bridge, 1946, Tex. Univ. Bur. Econ. Geology Pub. 4301, p. 149, 155 [1945].

Morgan Lewis beds (in Scotland formation)
Eocene, lower: Barbados, British West Indies.
Alfred Senn, 1940, Am. Assoc. Petroleum Geologists Bull., v. 24, no. 9, p. 1553.

Mørkebjerg formation
Upper Precambrian (Greenlandian): Northeast Greenland.
H. R. Katz, 1954, Meddel. om Grønland, bind 72, afd. 2, nr. 4, p. 51–54, 59–61.

Morne Daniel gravel series
Pleistocene: Dominica, British West Indies.
J. W. W. Spencer, 1902, Geol. Soc. London Quart. Jour., v. 58, pl. 3, p. 348.
F. R. C. Reed, 1921, Geology of the British Empire: London, Edward Arnold and Co., p. 170; 1949, 2d ed., p. 252.

Morne Delmas formation

Miocene: Haiti.

Jacques Butterlin, 1950, Rev. Soc. Haïtienne Histoire, Géographie et Géologie, v. 21, no. 76, p. 56; 1954, Inst. Français d'Haïti Mem. 1, p. 65.

Morne Diablo beds

Oligocene: Trinidad, British West Indies.

R. A. Liddle, [1928], The geology of Venezuela and Trinidad: Fort Worth, Tex., J. P. MacGowan, p. 458–459.

H. G. Kugler, 1936, Am. Assoc. Petroleum Geologists Bull., v. 20, no. 11, p. 1444–1445, 1451 (chart).

Morne Roche beds

Eocene, upper: Trinidad, British West Indies.

H. G. Kugler, 1936, Am. Assoc. Petroleum Geologists Bull., v. 20, no. 11, p. 1451 (chart); 1953, Vereinigung Schweizer Petroleum Geologen u. Ingenieure Bull., v. 20, no. 59, p. 42, 45.

Morne Vent limestone

Oligocene, upper: Martinique, French West Indies.

Jean Giraud, 1918, Esquisse géologique de la Martinique avec carte géologique: Hanoi-Haiphong, Imprimerie d'Extrême-Orient, p. 12.

Alfred Senn, 1940, Am. Assoc. Petroleum Geologists Bull., v. 24, no. 9, p. 1581, 1596.

Moroni formation

Tertiary, middle or upper: Utah.

S. L. Schoff, 1938, Ohio State Univ. Abs. Doctors' Dissert. 25, p. 381.

Morrison formation

Cambrian and older(?): Nova Scotia, Canada.

L. J. Weeks, 1947, Canada Geol. Survey Paper (Prelim. Map) 47–17.

Morrison River formation

Lower Cambrian: Nova Scotia, Canada.

Nova Scotia Department of Mines Engineering Staff, [1950?], Geology of Nova Scotia: Halifax, Nova Scotia, p. 7.

R. D. Hutchinson, 1952, Canada Geol. Survey Mem. 263, p. 34–36.

Morro member (of Palliser formation)

Upper Devonian: Alberta, Canada.

R. deWit and D. J. McLaren, 1950, Canada Geol. Survey Paper 50–23, p. 6.

Morses Line slate

Lower Ordovician: Vermont.

Phillip Fowler, 1950, Vt. Geol. Survey Bull. 2, pl. 1.

A. B. Shaw, 1951, Jour. Paleontology, v. 25, no. 1, p. 98.

Mortimer member (of Dunleith formation)

Middle Ordovician: Illinois.

J. S. Templeton and H. B. Willman, 1952, Tri-State Geol. Soc. Guidebook 16th Ann. Field Conf., p. 33, fig. 3.

Morton granite gneiss

Precambrian: Minnesota.

G. A. Thiel and C. E. Dutton, 1935, Minn. Geol. Survey Bull. 25, p. 88–94, pl. 5.

E. H. Lund, 1953, Econ. Geology, v. 48, no. 1, p. 46–52.

Morton shale

Pennsylvanian (Virgilian): Nebraska, Iowa, and Kansas.

G. E. Condra and E. C. Reed, 1943, Nebr. Geol. Survey Bull. 14, p. 41–42, 43, 44.

Mortons volcanics
Ordovician: Newfoundland, Canada.
G. R. Heyl, 1936, Newfoundland Geol. Survey Bull. 3, p. 7–8.

Moses Hill beds
Upper Cambrian to Lower Ordovician (Ozarkian): New York.
A. W. Grabau, 1936, Paleozoic formations in the light of the pulsation theory, v. 2, Cambrovician pulsation, pt. 1, Caledonian and St. Lawrence geosynclines: Peiping, China, University Press, Natl. Univ. Peking, p. 518.

Mosherville sandstone member (of Gailor dolomite)
Lower Ordovician: New York.
D. W. Fisher and G. F. Hanson, 1951, Am. Jour. Sci., v. 249, no. 11, p. 806.

Mosley Hill formation
Oligocene (Vicksburg): Louisiana.
G. E. Murray, 1952, Am. Assoc. Petroleum Geologists Bull., v. 36, no. 4, p. 703–706.

Moss Back member (of Chinle formation)
Upper Triassic: Utah and Colorado.
J. H. Stewart and J. F. Smith, Jr., 1954, Intermountain Assoc. Petroleum Geologists [Guidebook] 5th Ann. Field Con., p. 29, 31, 32.

Mossman picritic basalt
Pleistocene(?): Hawaiian Islands (Maui).
G. A. Macdonald *in* H. T. Stearns and G. A. Macdonald, 1942, Hawaii Div. Hydrography Bull. 7, p. 230, 247–249.

Mossy Ridge lentil (of Verda member of Yazoo clay)
Eocene, upper: Louisiana.
H. N. Fisk, 1938, La. Dept. Conserv. Geol. Bull. 10, p. 78, 103–104.

Motherlode series
Precambrian: British Columbia, Canada.
R. A. McGuire, 1941, The Miner, v. 14, no. 10, p. 58.

Moulton sandstone member (of Oakville formation)
Miocene: Texas.
B. C. Renick, 1936, Tex. Univ. Bur. Econ. Geology Bull. 3619, p. 77, 78–79, table 1.

Moulton Hill granite
Ordovician or Silurian: Quebec, Canada.
R. C. Rowe, 1944, Canadian Mining Jour., v. 65, no. 1, p. 4 (map).

Mound Ridge member (of Oneota formation)
Lower Ordovician: Wisconsin.
G. O. Raasch, 1952, Ill. Acad. Sci. Trans., v. 45, p. 87–88, 92.

Mountain Meadows dacite porphyry
Mesozoic or younger (pre-middle Miocene): California.
A. O. Woodford, J. S. Shelton, and T. G. Moran, 1944, U. S. Geol. Survey Oil and Gas Inv. Prelim. Map 23.
J. S. Shelton, 1955, Geol. Soc. America Bull., v. 66, no. 1, p. 54, pl. 1.

Mountain Spring volcanics
Jurassic: California.
G. R. Heyl and J. H. Eric, 1948, Calif. Dept. Nat. Res., Div. Mines Bull. 144, pt. 1, p. 52, 53, pl. 7.

Mount Alexander series
Middle Silurian: Quebec, Canada.
H. W. McGerrigle, 1950, Quebec Dept. Mines Geol. Rept. 35, p. 24, 25.

Mount All beds (in Scotland formation)

Eocene, middle: Barbados, British West Indies.

A. B. Thompson, 1925, Oil field exploration and development, v. 1, Oil field principles: New York, N. Y., D. Van Nostrand Co., p. 395.

Alfred Senn, 1940, Am. Assoc. Petroleum Geologists Bull., v. 24, no. 9, p. 1557–1558, 1581.

Mount Aylmer granite

Devonian or younger: Quebec, Canada.

T. H. Clark *in* H. C. Cooke and T. H. Clark, 1937, Canada Geol. Survey Mem. 211, p. 75.

Mt. Barren metamorphic complex

Post-Middle Ordovician: Newfoundland, Canada.

J. R. Cooper, 1936, Newfoundland Geol. Survey Bull. 4, p. 17, 22.

Mount Belknap rhyolite

Tertiary: Utah.

Eugene Callaghan, 1939, Am. Geophys. Union Trans. 20th Ann. Meeting, pt. 3, p. 447–449.

Mount Dillon formation

Cretaceous(?): Tobago, British West Indies.

J. C. Maxwell, 1948, Geol. Soc. America Bull., v. 59, no. 8, p. 809–810.

Mount Disraeli group

Precambrian or Paleozoic: Northwest Territories (Ellesmere Island), Canada.

R. G. Blackadar, 1954, Canada Geol. Survey Paper 53–10, p. 8, 10.

Mount Edgar limestone

Lower Permian: California.

J. C. Hazzard, 1938, (abs.) Geol. Soc. America Proc. 1937, p. 240.

Mt. Elden formation

Upper Devonian: Arizona.

Louis Hussakof, 1941, (abs.) Geol. Soc. America Bull., v. 52, no. 12, pt. 2, p. 1988; 1942, Am. Mus. Novitates, no. 1186, p. 1–2.

Mt. Emmons volcanics

Quaternary: Alaska.

G. C. Kennedy and H. H. Waldron, 1947, U. S. Geol. Survey Alaskan Volcano Inv. Rept. 2, pt. 2, pl. 2 (geol. map).

Mt. Evans quartz monzonite

Precambrian: Colorado.

M. F. Boos and Esther Aberdeen, 1940, Geol. Soc. America Bull., v. 51, no. 5, p. 725, pl. 1.

Mount Greenock formation

See Greenock formation.

Mt. Hague volcanics

Quaternary: Alaska.

G. C. Kennedy and H. H. Waldron, 1947, U. S. Geol. Survey Alaskan Volcano Inv. Rept. 2, pt. 2, pl. 2 (geol. map).

Mount Harris beds (of Pointe-à-Pierre formation)

Eocene, lower or middle: Trinidad, British West Indies.

R. A. Liddle, [1928], The geology of Venezuela and Trinidad: Fort Worth, Tex., J. P. MacGowan, p. 446–447.

Mount Hawk formation
Upper Devonian: Alberta, Canada.
R. deWit and D. J. McLaren, 1950, Canada Geol. Survey Paper 50–23, p. 5.

Mount Head formation
Carboniferous: Alberta, Canada.
R. J. W. Douglas, 1953, Alberta Soc. Petroleum Geologists 3d Ann. Field Conf. and Symposium, p. 68.

Mount Hillaby beds
Eocene: Barbados, British West Indies.
Alfred Senn, 1940, Am. Assoc. Petroleum Geologists Bull., v. 24, no. 9, p. 1581, 1584.

Mount Hoffmann complex
Pleistocene to Recent(?): California.
C. A. Anderson, 1941, Calif. Univ. Dept. Geol. Sci. Bull., v. 25, no. 7, p. 365–367.

Mount Hole granodiorite
Cretaceous: California.
E. S. Larsen, Jr., and N. B. Keevil, 1947, Geol. Soc. America Bull., v. 58, no. 6, p. 489–490.
E. S. Larsen, Jr., 1948, Geol. Soc. America Mem. 29, p. 89–90.

Mt. Hood lavas
Pliocene and Pleistocene: Oregon.
W. D. Lowry and E. M. Baldwin, 1952, Geol. Soc. America Bull., v. 63, no. 1, pt. 2.

Mount Hybla group
Eocene, lower: Jamaica, British West Indies.
C. A. Matley, 1929, Geol. Soc. London Quart. Jour., v. 85, pt. 4, p. 451, 452.

Mount Ida group
Precambrian or Paleozoic: British Columbia, Canada.
A. G. Jones, 1948, Canada Geol. Survey Paper 48–4, p. 2.

Mountignais formation
Precambrian: Newfoundland (Labrador), Canada.
E. H. Kranck, 1953, Canada Geol. Survey Bull. 26, p. 37.

Mt. Jefferson sandstone member (of Rockfish conglomerate)
Age not stated: Virginia.
H. B. Cooke, Jr., 1952, (abs.) Va. Jour Sci., v. 3, new ser., no. 4, p. 336.

Mount Kate volcanics
Pliocene: Nevada.
V. P. Gianella, 1934, Mining and Metallurgy, v. 15, no. 331, p. 299.

Mt. Katherine series
See Katherine group.

Mt. Macdougal series
See Macdougal group.

Mt. Margaret volcanics
Ordovician(?): Newfoundland, Canada.
R. E. Van Alstine, 1948, Newfoundland Geol. Survey Bull. 23, p. 14.

Mount Merino chert and shale member (of Normanskill formation)
Middle Ordovician (Chazy): New York.
Rudolf Ruedemann, 1942, N. Y. State Mus. Bull. 327, p. 23, 24; 1942, Bull. 331, p. 90, 93–101 [1946].

Mount Morrison formation
Precambrian: Colorado.
M. F. Boos, 1954, Geol. Soc. America Bull., v. 65, no. 2, p. 118–119.

Mount Nansen group
Upper Jurassic or Lower Cretaceous: Yukon, Canada.
H. S. Bostock, 1936, Canada Geol. Survey Mem. 189, p. 13.

Mt. Nordenskiöld formation
Permo-Triassic: East Greenland.
Lauge Koch, 1929, Meddel. om Grønland, bind 73, afd. 2, nr. 1, p. 104, 111; nr. 2, p. 248.

Mt. Ord pyroxenite
Precambrian: Arizona.
E. D. Wilson, 1939, Geol. Soc. America Bull., v. 50, no. 7, p. 1128.

Mt. Ord series
Mesozoic (Jura-Trias): California.
O. P. Jenkins, 1938, Geologic map of California (1 : 500,000): Calif. Dept. Nat. Res., Div. Mines, sheet 4.

Mount Osborn glaciation
Pleistocene (Wisconsin): Alaska.
D. M. Hopkins *in* T. L. Péwé and others, 1953, U. S. Geol. Survey Circ. 289, p. 11, 13 (table 1).

Mt. Pictet formation
Lower Carboniferous: Northeast Greenland.
Lauge Koch, 1929, Meddel. om Grønland, bind 73, afd. 2, nr. 1, p. 96–98; nr. 2, p. 244–245.

Mount Pleasant greensand horizon (of Manzanilla formation)
Miocene: Trinidad, British West Indies.
G. A. Waring, 1926, Johns Hopkins Univ. Studies in Geology, no. 7, p. 29, 71.
R. A. Liddle, [1928], The geology of Venezuela and Trinidad: Fort Worth, Tex., J. P. MacGowan, p. 482–483.

Mt. Poyer sandstone (in Scotland beds)
Eocene: Barbados, British West Indies.
J. B. Harrison *in* C. T. Trechmann, 1933, Geol. Mag., v. 70, no. 823, p. 43.

Mount Rogers volcanic group
Precambrian (?): Tennessee, Virginia, and North Carolina.
G. W. Stose and A. J. Stose, 1944, Am. Jour. Sci., v. 242, no. 8, p. 410–411.

Mt. Ronning formation
See Ronning group.

Mt. Rowe member (of Miller Peak formation)
Precambrian (Belt): Alberta, Canada.
C. L. Fenton and M. A. Fenton, 1937, Geol. Soc. America Bull., v. 48, no. 12, p. 1902–1903.

Mount St. Helens lavas
Quaternary: Washington.
Jean Verhoogen, 1937, Calif. Univ. Dept. Geol. Sci. Bull., v. 24, no. 9, p. 283–294.

Mt. Serrat glauconite
See Montserrat sand member (of Upper Brasso formation).

Mount Stevens greenstone and amphibolite
Carboniferous and Permian: British Columbia, Canada.
J. E. Armstrong, 1946, Canada Geol. Survey Bull. 5, p. 8.

Mount Susitna glaciation
Pleistocene (pre-Wisconsin): Alaska.
T. N. V. Karlstrom *in* T. L. Péwé and others, 1953, U. S. Geol. Survey Circ. 289, p. 3, 13 (table 1).

Mount Tabor shale member (of Crockett formation)
Eocene, middle (Claiborne): Texas.
H. B. Stenzel, 1938, Tex. Univ. Bur. Econ. Geol. Pub. 3818, p. 20, 125, 151–154 [1939].

Mt. Tripyramid complex
Carboniferous(?) (White Mountain magma series): New Hampshire.
A. P. Smith and others, 1938, Geologic map and structure sections of the Mt. Chocorua quadrangle, New Hampshire (1 : 62,500): N. H. Highway Dept.

Mt. Werner series
Middle Devonian: Northeast Greenland.
H. G. Backlund, 1937, Geol. Rundschau, Band 28, Heft 5, p. 411.

Mowich group
Lower Jurassic (Lias): Oregon.
F. L. Davis, 1937, Geol. Soc. Oreg. Country News Letter, v. 3, no. 2, p. 14.
R. L. Lupher, 1941, Geol. Soc. America Bull., v. 52, no. 2, p. 235–238, 240–247.

Mowitch formation
See Mowich group.

Moya formation
Pennsylvanian (Virgil): New Mexico.
M. L. Thompson, 1942, N. Mex. State Bur. Mines Min. Res. Bull. 17, p. 27, 72–73.

Moyer member (of Frankfort formation)
Upper Ordovician (Cincinnatian): New York.
Marshall Kay, 1953, N. Y. State Mus. Bull. 347, p. 66–67.

Moyers formation
Pennsylvanian (Bendian): Oklahoma.
B. H. Harlton, 1938, Am. Assoc. Petroleum Geologists Bull., v. 22, no. 7, p. 870–872, 874.

Muddy Creek beds
Oligocene(?): Montana.
Robert Scholten, K. A. Keenmon, and W. O. Kupsch, 1955, Geol. Soc. America Bull., v. 66, no. 4, p. 369, pl. 1.

Muddy Creek volcanics
Oligocene, middle: Montana.
Robert Scholten, K. A. Keenmon, and W. O. Kupsch, 1955, Geol. Soc. America Bull., v. 66, no. 4, p. 374–375, pl. 1.

Mud Fork member (of Bluestone formation)
Mississippian (Chester): West Virginia and Virginia.
B. N. Cooper, 1944, Va. Geol. Survey Bull. 60, p. 184.

Mud Springs group
Pennsylvanian (Derry): New Mexico.
M. L. Thompson, 1942, N. Mex. State Bur. Mines Min. Res. Bull. 17, p. 27, 36–39.

Muir sandstone
Eocene, middle: California.
C. E. Weaver, 1953, Wash. [State] Univ. Pubs. in Geology, v. 7, p. 19 (chart), 36–44.

Muldraugh formation
Lower Mississippian: Kentucky.
P. B. Stockdale, 1939, Geol. Soc. America Special Paper 22, p. 200–222.

Mulga tongue
Upper Cretaceous: Alberta, Canada (subsurface).
A. W. Nauss, 1945, Am. Assoc. Petroleum Geologists Bull., v. 29, no. 11, p. 1622–1623.

Mulholland formation
Pliocene, lower to middle: California.
C. K. Ham, 1952, Calif. Dept. Nat. Res., Div. Mines Special Rept. 22, p. 6 (fig. 3), 14–16.

Mulky cyclothem or formation
Pennsylvanian (Des Moines): Kansas.
G. E. Abernathy, 1937, Kans. Geol. Soc. Guidebook 11th Ann. Field Conf., p. 18, 19, 23; 1938, Kans. Acad. Sci. Trans. v. 41, p. 193, 195.

Mumford formation
Pennsylvanian: Indiana.
C. E. Wier, 1955, Dissert. Abs., v. 15, no. 12, p. 2515.

Mumford Hills sandstone (in McLeansboro formation)
Pennsylvanian: Indiana and Illinois.
J. A. Culbertson, 1932, The paleontology and stratigraphy of the Pennsylvania strata between Caseyville, Ky. and Vincennes, Ind.; Abs. Thesis, Ill. Univ.: Urbana, Ill., p. 7.

Muncho formation
Devonian: British Columbia, Canada.
L. R. Laudon and B. J. Chronic, Jr., 1949, Am. Assoc. Petroleum Geologists Bull., v. 33, no. 2, p. 217.

Munterville cyclothem (including Munterville limestone)
Pennsylvanian: Iowa.
L. M. Cline and D. G. Stookey *in* J. M. Weller and others, 1942, Am. Assoc. Petroleum Geologists Bull., v. 26, no. 10, p. 1587–1588.

Murdock group
Precambrian (Proterozoic): Quebec and Newfoundland, Canada.
M. J. Frarey, 1952, Canada Geol. Survey Paper 52–16, p. 2–3.

Murphys beds (in Scotland formation)
Eocene, middle: Barbados, British West Indies.
Alfred Senn, 1940, Am. Assoc. Petroleum Geologists Bull., v. 24, no. 9, p. 1554.

Murphys Bluff sandstone
Upper Pennsylvanian: Illinois and Indiana.
C. A. Malott *in* K. A. Payne, 1937, Jour. Paleontology, v. 11, no. 4, p. 276–279.

Murray granite
Precambrian: Ontario, Canada.
W. H. Collins, 1936, Royal Soc. Canada Trans., sec. 4, v. 30, p. 32–34.

Murray Bluff sandstone (in Macedonia formation)
Pennsylvanian: Illinois.
J. M. Weller, 1940, Ill. State Geol. Survey Rept. Inv. 71, p. 40.

Murray Iron Works member (of Platteville formation)
Ordovician: Iowa (subsurface).
A. F. Agnew, 1949, Stanford Univ. Bull., Abs. Dissert. 1948–49, p. 241–242.

Muscatine sandstone
Pennsylvanian: Iowa.
[C. R.] Keyes, 1941, Pan-Am. Geologist, v. 75, no. 1, p. 78.

Musgravetown group
Precambrian (?): Newfoundland, Canada.
A. O. Hayes, 1948, Newfoundland Geol. Survey Bull. 32, p. 16–17.

Mush Lake group
Jurassic and Triassic (?): Yukon, Canada.
E. D. Kindle, 1953, Canada Geol. Survey Mem. 268, p. 31–35.

Muskeg formation
Devonian: Alberta, Canada (subsurface).
J. Law, 1955, Alberta Soc. Petroleum Geologists Jour., v. 3, no. 6, p. 83.

Musquash granite
Middle Devonian (?): New Brunswick, Canada.
H. R. Belyea, 1944, Acadian Naturalist, v. 1, no. 3, p. 88.

Mussey Brook schist
Precambrian (?): Rhode Island and Massachusetts.
Alonzo Quinn, R. G. Ray, and W. L. Seymour *in* Alonzo Quinn and others, 1948, R. I. Port and Indus. Devel. Comm. Geol. Bull. 3, p. 10, geol. map.

Mustang shale
See Mustang Creek formation.

Mustang Creek formation
Upper Cretaceous: California.
O. P. Jenkins, 1943, Am. Assoc. Petroleum Geologists Bull., v. 27, no. 3, p. 251 (fig. 1).
L. I. Briggs, Jr., 1953, Calif. Dept. Nat. Res., Div. Mines Bull. 167, p. 31.

Mutual formation
Precambrian: Utah.
A. E. Granger and others, 1952, Utah Geol. Soc. Guidebook 8, p. 6.

Myatt lentil (in Verda member of Yazoo clay)
Eocene (Jackson): Louisiana.
J. Huner, Jr., 1939, La. Dept. Conserv. Geol. Bull. 15, p. 161–163.

Myerstown limestone
Ordovician (Black River to Trenton): Pennsylvania.
Carlyle Gray, 1952, Pa. Geol. Survey Progress Rept. 140, p. 4.

Myrabayan series
Middle Cambrian (?): Nova Scotia, Canada.
A. W. Grabau, 1936, Paleozoic formations in the light of the pulsation theory, v. 1, Lower and Middle Cambrian pulsations: 2d ed., Peiping, China, University Press, Natl. Univ. Peking, p. 329, 343.

Myrick Station cyclothem (including Myrick Station limestone)
Pennsylvanian (Des Moines): Missouri, Iowa, Kansas, and Nebraska.
L. M. Cline, 1941, Am. Assoc. Petroleum Geologists Bull., v. 25, no. 1, p. 37.
J. M. Jewett, 1945, Kans. State Geol. Survey Bull. 58, p. 31–32, 63–64.

Myrtle Beach peat

Pleistocene: South Carolina.

D. G. Frey, 1952, Am. Jour. Sci., v. 250, no. 3, p. 212–224.

Mystery quartzite series

Precambrian: Northeast Greenland.

Eduard Wenk and John Haller, 1953, Meddel. om Grønland, bind 111, nr. 3, p. 16–20.

Naborton formation

Paleocene (Midway): Louisiana.

G. [E.] Murray, Jr., 1941, (abs.) Am. Assoc. Petroleum Geologists Bull., v. 25, no. 5, p. 941–942.

G. E. Murray, Jr., and E. P. Thomas, 1945, Am. Assoc. Petroleum Geologists Bull., v. 29, no. 1, p. 56–57.

Nachusa formation

Middle Ordovician: Illinois.

J. S. Templeton and H. B. Willman, 1952, Tri-State Geol. Soc. Guidebook 16th Ann. Field Conf., p. 6, 37, figs. 3, 9.

Nacozari granite

Age not stated: Sonora, Mexico.

W. R. Wade and Alfred Wandtke, 1920, Am. Inst. Mining and Metall. Engineers Trans., v. 63, p. 383.

Nacozari limestone

Upper Pennsylvanian: Sonora, Mexico.

W. R. Wade and Alfred Wandtke, 1920, Am. Inst. Mining and Metall. Engineers Trans., v. 63, p. 383.

Manuel Maldonado-Koerdell, 1954, Associación Mexicana Geólogos Petroleros, v. 6, nos. 3–4, p. 123.

Nadeau gravel

Pleistocene, upper(?): California.

L. F. Noble, 1953, Geology of the Pearland quadrangle, California: U. S. Geol. Survey Geol. Quadrangle Map [GQ 24].

Nadlo Point limestone

Lower Ordovician: Northwest Territories (Devon Island), Canada.

V. E. Kurtz, A. H. McNair, and D. B. Wales, 1952, Am. Jour. Sci., v. 250, no. 9, p. 642–645.

Naftan limestone

Pliocene-Pleistocene: Mariana Islands (Saipan).

Risaburo Tayama, 1938, Geomorphology, geology, and coral reefs of Saipan Island: Tropical Industry Inst., Palau, South Sea Islands, Bull. 1 [English translation in library of U. S. Geol. Survey, p. 69–71].

Josiah Bridge *in* W. S. Cole and Josiah Bridge, 1953, U. S. Geol. Survey Prof. Paper 253, p. 12.

Nafutan limestone

See **Naftan limestone.**

Nagany limestone

Middle Ordovician (Blackriveran): Pennsylvania.

R. S. Bassler, 1950, Geol. Soc. America Mem. 44, p. 12, 270.

Nagas beds

Eocene: Mariana Islands (Guam).

Risaburo Tayama, 1952, Coral reefs in the South Seas: Japan Hydrog. Office Bull., v. 11, p. 49, table 4 [English translation in library of U. S. Geol. Survey, p. 59].

Naha formation

Quaternary: Arizona.

J. T. Hack, 1941, Geog. Review, v. 31, no. 2, p. 262–263; 1942, Harvard Univ. Peabody Mus. Am. Archaeology and Ethnology Papers, v. 35, no. 1, p. 53–54.

Nahanni formation

Middle Devonian: British Columbia, Yukon, and Northwest Territories (Mackenzie), Canada.

C. O. Hage, 1945, Canada Geol. Survey Paper 45–22, p. 5–6.

Nain anorthosite

Precambrian: Newfoundland (Labrador), Canada.

S. K. Roy, 1941, Field Mus. Nat. History Geol. Mem., v. 2, p. 20.
D. M. Baird, 1953, Newfoundland Geol. Survey Inf. Circ. 4 (revised), p. 137.

Naiset formation

Middle Cambrian: Alberta and British Columbia, Canada.

Charles Deiss, 1939, (abs.) Geol. Soc. America Bull., v. 50, no. 12, p. 1906; 1940, v. 51, no. 5, p. 773–775.

Nakaibito formation

Recent: New Mexico.

L. B. Leopold and C. T. Snyder, 1951, U. S. Geol. Survey Water-Supply Paper 1110–A, p. 9–12.

Nakaye formation

Pennsylvanian (Magdalena): New Mexico.

V. C. Kelley and Caswell Silver, 1952, N. Mex. Univ. Pubs. in Geology 4, p. 92–93, fig. 2.

Nanchital conglomerate series

Eocene, middle and upper: Istmo de Tehuantepec, Mexico.

J. B. Gibson, 1936, Soc. Geol. Mexicana Bol., tomo 9, no. 5, p. 278, correlation chart.

Nanchital shales

Eocene, lower: Istmo de Tehuantepec, Mexico.

J. B. Gibson, 1936, Soc. Geol. Mexicana Bol., tomo 9, no. 5, p. 277, correlation chart.

Nankoweap group

Precambrian (Algonkian): Arizona.

C. E. Van Gundy, 1934, Grand Canyon Nature Notes, v. 9, no. 8, p. 345–346; 1951, Geol. Soc. America Bull., v. 62, no. 8, p. 953–959.

Naomi Peak limestone member (of Langston formation)

Cambrian: Utah and Idaho.

G. B. Maxey, 1955, Dissert. Abs., v. 15, no. 4, p. 558.

Naosap granodiorite

Precambrian: Manitoba, Canada.

Jorma Kalliokoski, 1952, Canada Geol. Survey Mem. 270, p. 23–24.

Napali formation

Pliocene(?): Hawaiian Islands (Kauai).

G. A. Macdonald, D. A. Davis, and D. C. Cox, 1954, Volcano Letter 526, p. 2.

Napanee member (of Rockland formation)

Middle Ordovician (Mohawkian): Ontario, Canada and New York.

G. M. Kay, 1937, Geol. Soc. America Bull., v. 48, no. 2, p. 255–256.

Naparima Hill formation
Upper Cretaceous: Trinidad, British West Indies.
H. G. Kugler, 1950, Associación Venezolano de Geología, Minería y Petróleo Bol. tomo 2, no. 1, p. 48 (correlation chart), 61–63.

Napa Valley series
Pliocene, lower: California.
O. P. Jenkins, 1938, Geologic map of California (1 : 500,000): Calif. Dept. Nat. Res., Div. Mines, sheet 4.

Naptowne glaciation
Pleistocene (Wisconsin): Alaska.
T. N. V. Karistrom *in* T. L. Péwé and others, 1953, U. S. Geol. Survey Circ. 289, p. 4, 13 (table 1).

Naranjo formation
Triassic: New Mexico.
G. O. Bachman, 1953, U. S. Geol. Survey Oil and Gas Inv. Map OM 137.

Narhval formation
Narhval Sund formation
See Narwhale Sound formation.

Nariva River marl
Eocene, lower and middle: Trinidad, British West Indies.
A. B. Thompson, 1925, Oil field exploration and development, v. 1, Oil field principles: New York, D. Van Nostrand Co., p. 389, 390.
J. A. Cushman and H. H. Renz, 1948, Cushman Lab. Foram. Research Special Pub. 24, p. 2, 3.

Narizian stage
Eocene, late: California.
V. S. Mallory, 1953, (abs.) Jour. Paleontology, v. 27, no. 6, p. 903.

Narrows formation
Cambrian (post-Olenian): New Brunswick, Canada.
A. O. Hayes and B. F. Howell, 1937, Geol. Soc. America Special Paper 5, p. 80–81.

Narssarssuk formation
Precambrian (upper Algonkian): North Greenland.
V. E. Kurtz and D. B. Wales, 1950, Okla. Acad. Sci. Proc., v. 31, p. 83, 85–86.

Narvhal Sound formation
See Narwhale Sound formation.

Narwhale Sound formation
Ordovician: Northeast Greenland.
Christian Poulsen, 1930, Meddel. om Grønland, bind 74, nr. 12, p. 316.

Narwhal Sound formation
See Narwhale Sound formation.

Nashoba formation
Carboniferous: Massachusetts.
L. W. Currier and R. H. Jahns, 1952, Guidebook for field trips in New England: Geol. Soc. America, p. 106–108, 110.

Natchez Pass formation
Middle Triassic: Nevada.
S. W. Muller, H. G. Ferguson, and R. J. Roberts, 1951, Geology of the Mount Tobin quadrangle, Nevada: U. S. Geol. Survey Geol. Quadrangle Map [GQ 7].

Natlins Cove formation
Silurian: Newfoundland, Canada.
G. R. Heyl, 1937, Newfoundland Geol. Survey Bull. 8, p. 12.

Natsy member (of Deese formation)
Pennsylvanian (Des Moines): Oklahoma.
C. W. Tomlinson, 1937, Ardmore Geol. Soc. [Guidebook] Field Trip, March 13, p. 1–2.

Navada member (of Quartzite Range formation)
Precambrian(?): British Columbia, Canada.
W. H. Matthews, 1953, British Columbia Dept. Mines Bull. 31, p. 21.

Navarro River member (of Brasso formation)
Miocene, lower or middle: Trinidad, British West Indies.
H. H. Renz, 1942, 8th Am. Sci. Cong. Proc., v. 4, p. 554.

Navet formation
Eocene, lower and middle: Trinidad, British West Indies.
H. H. Renz, 1942, 8th Am. Sci. Cong. Proc., v. 4, p. 535.
J. A. Cushman and H. H. Renz, 1948, Cushman Lab. Foram. Research Special Pub. 24, p. 1–3.

Navy Island formation
Lower Ordovician (Canadian): New Brunswick, Canada.
A. O. Hayes and B. F. Howell, 1937, Geol. Soc. America Special Paper 5, p. 81–83.

Nazareno bed (in Cupido limestone)
Lower Cretaceous: Zacatecas, Mexico.
W. H. Triplett, 1952, Am. Inst. Mining and Metall. Engineers Trans., v. 193, p. 584 (fig. 1).

Nazcha formation
Lower to Middle Jurassic: British Columbia, Canada.
K. D. Watson and W. H. Matthews, 1944, British Columbia Dept. Mines Bull. 19, p. 17–19.

Nealmont limestone
Middle Ordovician (Mohawkian): Pennsylvania.
G. M. Kay, 1941, (abs.) Geol. Soc. America Bull., v. 52, no. 12, pt. 2, p. 1969.

Nedrow member (of Onondaga limestone)
Middle Devonian: New York.
W. A. Oliver, Jr., 1954, Geol. Soc. America Bull., v. 65, no. 7, p. 627–628, 636–637.

Needle chert
Lower Devonian: Quebec, Canada.
A. M. Bell, 1951, Canadian Inst. Mining and Metallurgy Trans., v. 54, p. 241.

Needle Mountain group
Lower Devonian: Quebec, Canada.
A. M. Bell, 1951, Canadian Inst. Mining and Metallurgy Trans., v. 54, p. 241.

Needle Mountain limestone
Lower Devonian: Quebec, Canada.
A. M. Bell, 1951, Canadian Inst. Mining and Metallurgy Trans., v. 54, p. 241.

Needles complex
Precambrian: California.
W. J. Miller, 1944, Calif. Jour. Mines and Geology, v. 40, no. 1, p. 116–119, pl. 7.

Needmore shale
Middle Devonian: Pennsylvania.
Bradford Willard *in* Bradford Willard, F. M. Swartz, and A. B. Cleaves, 1939, Pa. Geol. Survey, ser. 4, Bull. G 19, p. 149–150.

Neepawa volcanics
Precambrian: Ontario, Canada.
F. J. Pettijohn, 1936, Jour. Geology, v. 44, no. 3, p. 348–349.

Negus flow
Precambrian: Northwest Territories (Mackenzie), Canada.
J. F. Henderson and I. C. Brown, 1950, Canadian Inst. Mining and Metallurgy Trans., v. 53, p. 420.

Nehalem formation
Eocene, upper, to Oligocene, lower: Oregon.
M. L. Steere, 1955, Geol. Soc. Oreg. Country News Letter, v. 21, no. 10, p. 85.

Neiba formation
Eocene, upper: Dominican Republic.
W. M. Small, 1948, Seismol. Soc. America Bull., v. 38, no. 1, p. 26.
P. J. Bermudez, 1949, Cushman Lab. Foram. Research Special Pub. 25, p. 21.

Neills Cliff formation
Lower Jurassic (middle and upper Liassic): East Greenland.
Alfred Rosenkrantz *in* Lauge Koch, 1929, Meddel. om Grønland, bind 73, afd. 2, nr. 1, p. 143–145.

Nekik granodiorite
Precambrian: Manitoba, Canada.
Jorma Kalliokoski, 1952, Canada Geol. Survey Mem. 270, p. 25.

Nelson beds
Triassic: North Carolina.
Grover Murray, Jr., 1938, Science, v. 87, no. 2261, p. 390.

Nelson Lake granite
Precambrian: Quebec, Canada.
H. C. Cooke, W. F. James, and J. B. Mawdsley, 1931, Canada Geol. Survey Mem. 166, p. 129.

Nelway formation
Middle Cambrian: British Columbia, Canada.
H. W. Little, 1950, Canada Geol. Survey Paper 50–19, p. 18–21.

Nepean sandstone
Lower Ordovician and Upper Cambrian(?): Ontario, Canada.
A. E. Wilson, 1937, Royal Soc. Canada Trans., ser. 3, v. 31, sec. 4, p. 46, 47.

Nescatunga gypsum member (of Blaine formation)
Permian (Leonardian): Kansas.
G. H. Norton, 1939, Am. Assoc. Petroleum Geologists Bull., v. 23, no. 12, p. 1794–1795, 1797.
R. C. Moore, J. C. Frye, and J. M. Jewett, 1944, Kans. State Geol. Survey Bull. 52, pt. 4, p. 158.

Neshoba sand member (of Tallahatta formation)
Eocene, middle (Claiborne group): Mississippi.
E. P. Thomas, 1942, Miss. State Geol. Survey Bull. 48, p. 24–28.

Nesson formation

Jurassic: Subsurface in North Dakota and Montana, and Manitoba, Canada.

J. W. Nordquist, 1955, Billings Geol. Soc. Guidebook 6th Ann. Field Conf., p. 104, fig. 2.

Nestucca formation

Eocene, upper: Oregon.

P. D. Snavely, Jr., and H. E. Vokes, 1949, U. S. Geol. Survey Oil and Gas Inv. Prelim. Map 97.

Neutral cyclothem or formation

Pennsylvanian (Des Moines): Kansas.

G. E. Abernathy, 1937, Kans. Geol. Soc. Guidebook 11th Ann. Field Conf., p. 18, 20, 22; 1938, Kans. Acad. Sci. Trans., v. 41, p. 193, 196.

Neva glacial stage

Pleistocene: Colorado.

R. L. Ives, 1942, Geog. Review, v. 32, no. 3, p. 450.

Neville formation

Quaternary: Texas.

C. C. Albritton, Jr., and Kirk Bryan, 1938, (abs.) Geol. Soc. America Bull., v. 49, no. 12, pt. 2, p. 1863; 1939, v. 50, no. 9, p. 1430–1432.

Newbec breccia

Precambrian (Archean): Quebec, Canada.

M. E. Wilson, 1941, Canada Geol. Survey Mem. 229, p. 43–45.

Newberry formation

Precambrian (Grand Canyon): Arizona.

Charles Keyes, 1938, Pan-Am. Geologist, v. 70, no. 2, p. 107, 110.

New Bremen granite

Precambrian: New York.

A. F. Buddington, 1939, Geol. Soc. America Mem. 7, p. 84.

Newby formation

Triassic(?): Washington.

J. D. Barksdale, 1948, Northwest Science, v. 22, no. 4, p. 165, 167–169.

Newby glauconitic sand member (of Reklaw formation)

Eocene, middle (Claiborne): Texas.

H. B. Stenzel, 1938, Tex. Univ. Bur. Econ. Geol. Pub. 3818, p. 20, 65–71 [1939].

New Canaan formation

Silurian(?): Nova Scotia, Canada.

D. G. Crosby, Jr., 1953, Stanford Univ. Bull., Abs. Dissert., v. 27, p. 418.

Newcastle lens (in Newcastle formation)

Upper Cretaceous: Wyoming.

R. M. Grace, 1952, Wyo. Geol. Survey Bull. 44, p. 14–15.

New Castle porphyry

Eocene, upper(?): Jamaica, British West Indies.

C. A. Matley, 1937, Geol. Mag., v. 74, no. 11, p. 506; 1951, Geology and physiography of the Kingston district, Jamaica: Inst. of Jamaica, p. 35, 83–87, 99–102, geol. map.

New Design group

Mississippian (Chester): Illinois and Missouri.

J. M. Weller, 1939, Kans. Geol. Soc. Guidebook 13th Ann. Field Conf., p. 131, 134.

Newfield diabase
Precambrian (Keweenawan?): Ontario, Canada.
Jack Satterly, 1948, Ontario Dept. Mines Prelim. Rept. 1948–2, p. 5.

New Fork tongue (of Wasatch formation)
Eocene, middle: Wyoming.
J. H. Donovan, 1950, Wyo. Geol. Assoc. Guidebook 5th Ann. Field Conf., p. 64.

New Glarus member (of Pecatonica formation)
Middle Ordovician: Illinois.
J. S. Templeton and H. B. Willman, 1952, Tri-State Geol. Soc. Guidebook 16th Ann. Field Conf., p. 41, figs. 3, 10, 16.

New Goldvue quartz diorite
See Goldvue quartz diorite.

New Hampshire sequence
Ordovician to Lower Devonian: New Hampshire and Vermont.
W. S. White and R. H. Jahns, 1950, Jour. Geology, v. 58, no. 3, p. 182.

New Harmony sandstone (in McLeansboro formation)
Pennsylvanian: Indiana and Illinois.
J. A. Culbertson, 1932, The paleontology and stratigraphy of the Pennsylvanian strata between Caseyville, Ky. and Vincennes, Ind.; Abs. Thesis, Ill. Univ.; Urbana, Ill., p. 8.

New Haven arkose
Triassic: Connecticut.
P. D. Krynine, 1941, (abs.) Geol. Soc. America Bull., v. 52, no. 12, pt. 2, p. 1919; 1950, Conn. State Geol. Nat. History Survey Bull. 73, p. 37–57.

New Haven lens (in Newcastle formation)
Upper Cretaceous: Wyoming.
R. M. Grace, 1952, Wyo. Geol. Survey Bull., 44, p. 14, 15.

New Market limestone
Middle Ordovician: Virginia.
B. N. Cooper and G. A. Cooper, 1946, Geol. Soc. America Bull., v. 57, no. 1, p. 71–74.

Newport albitized quartz diorite
Precambrian (Archean): Quebec, Canada.
W. W. Weber, 1951, Quebec Dept. Mines Prelim. Rept. 255, map.

Newport group
Precambrian: Washington.
M. C. Schroeder, 1952, Wash. Dept. Conserv. Devel., Div. Mines and Geology Bull. 40, p. 7, 9, 20.

Newport limestone member (of White Limestone formation)
Oligocene, upper, to Miocene, lower: Jamaica, British West Indies.
V. A. Zans, H. R. Versey, and J. B. E. Williams *in* V. A. Zans, 1955, Jamaica Geol. Survey Dept. Ann. Rept. 1953–54, p. 4.

Newspaper Rock sandstone
Upper Triassic: Arizona.
H. R. Stagner *in* L. H. Daugherty, 1941, Carnegie Inst. Washington Pub. 526, p. 10, 11–12.

Newton cyclothem (including Newton limestone)
Pennsylvanian: Illinois.
W. A. Newton and J. M. Weller, 1937, Ill. State Geol. Survey Rept. Inv. 45, p. 24–25.

Newton stony clay

Pleistocene: British Columbia, Canada.

J. E. Armstrong and W. C. Brown, 1953, Canada Geol. Survey Water Supply Paper 322, p. 10, map.

Newton Creek limestone

Middle Devonian: Michigan.

G. A. Cooper and A. S. Warthin, 1941, Washington Acad. Sci. Jour., v. 31, no. 6, p. 260.

Newton Mine volcanics

Jurassic: California.

G. R. Heyl and J. H. Eric, 1948, Calif. Dept. Nat. Res., Div. Mines Bull. 144, pt. 1, p. 52, 53, pl. 7.

Newville group

Jurassic (Knoxville): California.

F. M. Anderson, 1943, Calif. Dept. Nat. Res., Div. Mines Bull. 118, pt. 2, p. 184 [preprint 1941].

Ngardok (Galdog) beds

Eocene: Caroline Islands (Babelthaup).

Risaburo Tayama, 1935, Topography, geology, and coral reefs of the Palau Islands: Tohoku Univ., Inst. Geology and Paleontology Contr. in Japanese Language, no. 18, p. 17, 39 [English translation in library of U. S. Geol. Survey]; 1939, Japanese Jour. Geology and Paleontology Trans. and Abs. nos. 1–2, Abs., p. 29; 1952, Coral reefs in the South Seas: Japan Hydrog. Office Bull., v. 11, p. 64–65, table 4 [English translation in library of U. S. Geol. Survey, p. 76–77].

Ngarekeukl (Galkyoku) limestone

Recent: Caroline Islands (Peleliu).

Risaburo Tayama, 1939, Correlation of the strata of the South Sea Islands: Geol. Soc. Japan Jour., v. 46, no. 549, p. 346 (correlation table) [English translation in library of U. S. Geol. Survey]; 1952, Coral reefs in the South Seas: Japan Hydrog. Office Bull., v. 11, p. 67, table 4 [English translation in library of U. S. Geol. Survey, p. 80].

Ngeremlengui formation

Nghmesed volcanic breccia

See Kameset (Gamusetsu) agglomerate.

Niakogon tongue (of Chandler formation)

Upper Cretaceous: Alaska.

George Gryc, W. W. Patton, Jr., and T. G. Payne, 1951, Washington Acad. Sci. Jour., v. 41, no. 5, p. 164.

Nicely shale

Lower Jurassic (Lias): Oregon.

R. L. Lupher, 1941, Geol. Soc. America Bull., v. 52, no. 2, p. 227, 239–240.

Nicolet River formation

Ordovician: Quebec, Canada.

T. H. Clark, 1947, Quebec Dept. Mines Prelim. Rept. 204, p. 9–12.

Nicollet Creek member (of St. Lawrence formation)

Upper Cambrian (St. Croixian): Minnesota.

C. R. Stauffer, G. M. Schwartz, and G. A. Thiel, 1939, Geol. Soc. America Bull., v. 50, no. 8, p. 1239–1240.

Nicomekl silt

Pleistocene: British Columbia, Canada.

J. E. Armstrong and W. C. Brown, 1953, Canada Geol. Survey Water Supply Paper 322, p. 11, 48, table, map.

Nictaux beds

Silurian: Nova Scotia, Canada.

H. M. Ami, 1900, Royal Soc. Canada Trans., 2d ser., v. 6, sec. 4, p. 203.

Niesen beds

Lower Cretaceous (Infravalanginian-Valanginian): Northeast Greenland.

Wolf Mayne, 1947, Meddel. om Grønland, bind 132, nr. 2, p. 64–68, 119, pl. 6.

Nieva shale

Lower Cretaceous: Zacatecas, Mexico.

W. H. Triplett, 1952, Am. Inst. Mining and Metall. Engineers Trans., v. 193, p. 584 (fig. 1).

Nigger Canyon volcanics

Pleistocene: California.

J. F. Mann, Jr., 1955, Calif. Dept. Nat. Res., Div. Mines Special Rept. 43, p. 9, 15.

Nikolai Creek glaciation

Pleistocene (Wisconsin): Alaska.

D. B. Krinsley *in* T. L. Péwé and others, 1953, U. S. Geol. Survey Circ. 289, p. 6, 13 (table 1).

Niland tongue (of Wasatch formation)

Eocene, lower: Wyoming.

G. N. Pipiringos, 1955, Wyo. Geol. Assoc. Guidebook 10th Ann. Field Conf., p. 100–102.

Ninnescah shale

Permian (Leonard series): Kansas.

G. H. Norton, 1937, Am. Assoc. Petroleum Geologists Bull., v. 21, no. 12, p. 1557; 1939, v. 23, no. 12, p. 1767–1773.

Niobrara River channel sands (in Valentine formation)

Miocene to Pliocene: Nebraska.

M. K. Elias, 1942, Geol. Soc. America Special Paper 41, p. 137.

Nipe series

Oligocene and Miocene: Cuba.

F. G. Keijzer, 1945, Geog. Geol. Meded. (Utrecht Univ.) Physiog.-Geol. Reeks, ser. 2, no. 6, p. 50.

Nippers Harbour group

Ordovician: Newfoundland, Canada.

D. M. Baird, 1948, Canadian Inst. Mining and Metallurgy Bull., v. 41, p. 211, 212 (fig. 1); 1951, Canada Geol. Survey Paper 51–21, p. 29–31.

Nippewalla group

Permian (Leonard series): Kansas.

G. H. Norton, 1939, Am. Assoc. Petroleum Geologists Bull., v. 23, no. 12, p. 1782.

R. C. Moore, J. C. Frye, and J. M. Jewett, 1944, Kans. State Geol. Survey Bull. 52, pt. 4, p. 157–158.

Nipsachuck gneiss

Precambrian(?): Rhode Island.

G. M. Richmond *in* G. M. Richmond and W. B. Allen, 1951, R. I. Port and Indus. Devel. Comm. Geol. Bull. 4, p. 10, 11.

Nisku member (of Winterburn formation)
Devonian: Alberta, Canada (subsurface).
D. B. Layer, chm., 1950, Am. Assoc. Petroleum Geologists Bull., v. 34, no. 9, p. 1815–1816.

Nistoassini-Nayelles Lakes granite
Precambrian: Saskatchewan, Canada.
A. R. Byers, 1949, Saskatchewan Geol. Survey (Precambrian Geology Ser.) Rept. 1, p. 13–14.

Nivaje shale
[Miocene]: Dominican Republic.
William Lonsdale *in* T. S. Heneken, 1853, Geol. Soc. London Quart. Jour., v. 9, p. 133, 134.

Nix porphyrite
Carboniferous: California.
O. P. Jenkins, 1938, Geologic map of California (1 : 500,000): Calif. Dept. Nat. Res., Div. Mines, sheet 4.

Nizi formation
Upper Mississippian and Pennsylvanian(?): British Columbia, Canada.
H. Gabrielse, 1955, Canada Geol. Survey Paper (Prelim. Map) 54–10.

Noah member (of Blubell formation)
Silurian: Utah.
Paul Billingsley *in* J. M. Boutwell, 1933, 16th Internat. Geol. Cong. [United States] Guidebook 17, Excursion C–1, p. 110 (fig. 14).
J. K. Rigby, 1952, Utah Geol. Mineralog. Survey Bull. 45, p. 23, 27, fig. 6.

Noa Lake quartzite
Middle Cambrian(?): Northeast Greenland.
A. B. Cleaves and E. F. Fox, 1935, Geol. Soc. America Bull., v. 46, no. 3, p. 474, pl. 43.

Nob Hill flow (in Yellowknife group)
Precambrian: Northwest Territories (Mackenzie), Canada.
C. E. G. Brown and A. S. Dadson, 1953, Canadian Inst. Mining and Metallurgy Trans., v. 56, p. 70, 71.

Noche Buena formation
Recent: Cuenca de México, Mexico.
Kirk Bryan, 1948, Soc. Geol. Mexicana Bol., tomo 13, p. 12, pl. 1.

Noel formation
Upper Triassic: British Columbia, Canada.
C. E. Cairnes, 1937, Canada Geol. Survey Mem. 213, p. 14–15.

Noisy Brook gneiss
Age not stated: Maine.
Kern Jackson, 1953, Maine State Geologist Rept. 1951–1952, p. 62–66.

Nokomis group
Precambrian: Manitoba, Canada.
D. S. Robertson, 1949, Canada Geol. Survey Paper (Prelim. Map) 49–20.

Nome River glaciation
Pleistocene (pre-Wisconsin): Alaska.
D. M. Hopkins *in* T. L. Péwé and others, 1953, U. S. Geol. Survey Circ. 289, p. 10, 13 (table 1).

Nonacho series

Precambrian: Northwest Territories (Mackenzie), Canada.

J. F. Henderson, 1937, Canada Geol. Survey Paper 37–2, p. 6.

Nonada sand member (of Domengine formation)

Eocene: California.

M. B. Payne, 1951, Calif. Dept. Nat. Res., Div. Mines Special Rept. 9, p. 15.

No Name argillite

Precambrian: Washington.

M. C. Schroeder, 1952, Wash. Dept. Conserv. Devel., Div. Mines and Geology Bull. 40, p. 7, 9, 11–13.

Nonewaug granite

Paleozoic: Connecticut.

R. M. Gates, 1953, New England Intercollegiate Geol. Conf. [Guidebook] 40th [Ann. Meeting], Field Trip B; 1954, Conn. Geol. Nat. History Survey Quadrangle Rept. 3, p. 3, 6–7, 15–19.

Noonday dolomite

Lower Cambrian: California.

J. C. Hazzard, 1937, Calif. Jour. Mines and Geology, v. 33, no. 4, p. 279 (fig. 3e), 300–301.

Nopah formation

Upper Cambrian: California.

J. C. Hazzard, 1937, Calif. Jour. Mines and Geology, v. 33, no. 4, p. 276 (fig. 3b), 320–322.

Noranda Lake granite

Precambrian: Quebec, Canada.

H. C. Cooke, W. F. James, and J. B. Mawdsley, 1931, Canada Geol. Survey Mem. 166, p. 128.

Nordegg member (of Fernie formation)

Jurassic, Alberta, Canada.

J. Spivak, 1949, Am. Assoc. Petroleum Geologists Bull., v. 33, no. 4, p. 535.

Norfleet cyclothem (including Norfleet limestone)

Pennsylvanian (Des Moines): Kansas, Missouri, and Nebraska.

J. M. Jewett, 1941, Kans. State Geol. Survey Bull. 38, pt. 11, p. 338–339; 1945, Bull. 58, p. 44–45, 69.

Norfolk formation

Devonian: Ontario, Canada.

J. F. Caley, 1940, Canada Geol. Survey Paper 40–22, p. 4; 1941, Mem. 226, p. 49–57.

Noriss granite

Precambrian: Manitoba, Canada.

J. M. Harrison, 1949, Canada Geol. Survey Mem. 250, p. 19, 20.

Norma gravel

Miocene, lower: Nuevo Leon, Mexico.

1952, Corpus Christi Geol. Soc. [Guidebook] Ann. Field Trip, May 9–10, p. 3, geol. map.

Norphlet formation

Permian: Subsurface in Arkansas, Louisiana, and Texas.

R. T. Hazzard, W. T. Spooner, and B. W. Blanpied, [1947], Shreveport Geol. Soc. 1945 Ref. Rept., v. 2, p. 483, 484, 488.

Norquay Mountain member (of Rocky Mountain formation)
Permian and Pennsylvanian(?): Alberta, Canada.
F. W. Beales, 1950, Canada Geol. Survey Paper 50–27, p. 6.

Norsemandal sandstone
Upper Precambrian(?): North Greenland.
P. J. Adams and J. W. Cowie, 1953, Meddel. om Grønland, bind 111, nr. 7, p. 9–10.

North Arm complex
Age not stated: Newfoundland, Canada.
A. K. Snelgrove, 1934, Newfoundland Geol. Survey Bull. 1, p. 10.

North Bay granite
Devonian(?): Newfoundland, Canada.
W. B. Jewell, 1939, Newfoundland Geol. Survey Bull. 17, p. 10–12.

North Boulder group
Precambrian: Montana.
C. P. Ross, 1949, Washington Acad. Sci. Jour., v. 39, no. 3, p. 111, 113.

North Brook granite
Post-Ordovician: Newfoundland, Canada.
T. N. Walthier, 1949, Newfoundland Geol. Survey Bull. 35, pt. 1, p. 28.

North Coast schist group
Cretaceous(?): Tobago, British West Indies.
J. C. Maxwell, 1948, Geol. Soc. America Bull., v. 59, no. 8, p. 805–812.

Northcraft formation
Eocene, upper: Washington.
P. D. Snavely, Jr., and others, 1951, U. S. Geol. Survey Coal Inv. Map C 8, sheet 1.

North Creek member (of Yazoo clay)
Eocene, upper (Jackson group): Alabama.
G. E. Murray, 1947, Am. Assoc. Petroleum Geologists Bull., v. 31, no. 10, p. 1838, 1839 (footnote).
L. D. Toulmin, P. E. LaMoreaux, and C. R. Lanphere, 1951, Ala. Geol. Survey Special Rept. 21, p. 120–122, pl. 3.

Northern Bight granite
Devonian(?): Newfoundland, Canada.
E. R. Rose, 1948, Newfoundland, Geol. Survey Bull. 32, pt. 2, p. 42,47.

North Hogback tongue (of Point Lookout sandstone)
Upper Cretaceous: New Mexico.
P. T. Hays and A. D. Zapp, 1955, U. S. Geol. Survey Oil and Gas Inv. Map OM 144.

North Horn formation
Upper Cretaceous and Paleocene: Utah.
S. L. Schoff, 1938, Ohio State Univ. Abs. Doctors' Dissert. 25, p. 379.
E. M. Spieker, 1946, U. S. Geol. Survey Prof. Paper 205–D, p. 132–135.

North Keys sand
Miocene(?): Maryland.
J. T. Hack, 1955, U. S. Geol. Survey Prof. Paper 267–A, p. 8–10.

Northrip member (of Yegua formation)
Eocene: Texas.
H. D. McCallum, 1947, S. Tex. [Geol. Soc. Guidebook] 14th Ann. Meeting Field Trip, p. 5.

Northwest Arm formation
Ordovician: Newfoundland, Canada.
J. R. Cooper, 1937, Newfoundland Geol. Survey Bull. 9, p. 7–8.

Norton limestone member (of Tribes Hill formation)
Lower Ordovician: New York.
R. R. Wheeler, 1941, (abs.) Geol. Soc. America Bull., v. 52, no. 12, pt. 2, p. 1938–1939; 1942, Am. Jour. Sci., v. 240, no. 7, p. 518, 522, 523.

Nortonville shale member (of Kreyenhagen formation)
Eocene, upper: California.
P. P. Goudkoff, 1943, Calif. Dept. Nat. Res., Div. Mines Bull. 118, pt. 2, p. 248 (fig. 99a), 150 [preprint 1941].
Ralph Stewart, 1949, U. S. Geol. Survey Oil and Gas Inv. Prelim. Chart 34, sheet 2.

Norway quartz monzonite
Upper Devonian(?) (New Hampshire magma series): New Hampshire.
A. P. Smith and others, 1938, Geologic map and structure sections of the Mt. Chocorua quadrangle, New Hampshire (1:62,500): N. H. Highway Dept.

Norwood shale
Middle Devonian: Michigan.
[G. M. Ehlers], 1938, Mich. Acad. Sci., Arts and Letters Sec. Geology and Mineralogy [Guidebook] 8th Ann. Field Excursion, p. 3, [figs. 1–3] after p. 8.

Norwood tuff
Oligocene: Utah.
A. J. Eardley, 1944, Geol. Soc. America Bull., v. 55, no. 7, p. 845–846.

Notikewin member (of Spirit River formation)
Lower Cretaceous: Alberta, Canada.
P. C. Badgley, 1952, Canada Geol. Survey Paper 52–11, p. 9.

Notre Dame series
Silurian: Newfoundland, Canada.
W. H. Twenhofel and R. R. Shrock, 1937, Geol. Soc. America Bull., v. 48, no. 12, p. 1767.

Nottawasaga group
Ordovician: Ontario, Canada (subsurface).
B. A. Liberty, 1955, Geol. Asssoc. Canada Proc., v. 7, pt. 1, p. 146.

Nova formation
(?)Miocene, upper: California.
R. H. Hopper, 1947, Geol. Soc. America Bull., v. 58, no. 5, p. 414.

Novato conglomerate
Cretaceous(?): California.
C. E. Weaver, 1949, Geol. Soc. America Mem. 35, p. 18 (table 3), 46.

Noxie sandstone lentil or member (of Chanute formation)
Pennsylvanian (Missouri subseries): Kansas and Oklahoma.
R. C. Moore and others, 1937, Kans. Geol. Soc. Guidebook 11th Ann. Field Conf., p. 40, 42.
M. C. Oakes, 1940, Okla. Geol. Survey Bull. 62, p. 61.

Noxubee sand
Eocene (Wilcox): Mississippi.
F. F. Mellen, 1950, Miss. State Geol. Survey Bull. 69, p. 10–11.

Nuevo León group
Lower Cretaceous: Nueva León, Mexico.
R. W. Imlay, 1944, Geol. Soc. America Bull., v. 55, no. 8, p. 1005, 1007, Chart 10a.

Nugget series
Precambrian: British Columbia, Canada.
R. A. McGuire, 1941, The Miner, v. 14, no. 10, p. 58–59.

Nugsuak formation
Cretaceous-Tertiary: West Greenland.
Lauge Koch, 1929, Meddel. om Grønland, bind 73, afd. 2, nr. 2, p. 258–262.

Nunarsuit granite
Precambrian: Southwest Greenland.
C. E. Wegmann, 1938, Meddel. om Grønland, bind 113, nr. 2, p. 98–105.

Nunatami formation
Lower Ordovician (Upper Canadian): North Greenland.
Christian Poulsen, 1927, Meddel. om Grønland, bind 70, nr. 2, p. 246–248, 342.

Nunkoweap sandstone
Precambrian (Kwaguntan): Arizona.
Charles Keyes, 1938, Pan-Am. Geologist, v. 70, no. 2, p. 107, 114.

Nunn member (of Lake Valley formation)
Mississippian (Osage): New Mexico.
L. R. Laudon and A. L. Bowsher, 1949, Geol. Soc. America Bull., v. 60, no. 1, p. 13, fig. 4.

Nuwok formation
Pliocene: Alaska.
W. H. Dall, 1919, Report of the Canadian Arctic expedition 1913–1918, v. 8, pt. A, p. 26A.

Nygaard Bay limestone
Lower Ordovician (Canadian): North Greenland.
J. C. Troelsen, 1950, Meddel. om Grønland, bind 149, nr. 7, p. 50.

Oacoma zone (in Sully member of Pierre formation)
Cretaceous: South Dakota.
W. V. Searight, 1937, S. Dak. State Geol. Survey Rept. Inv. 27, p. 23–25, pl. 3.

Oak Bay formation
Silurian: New Brunswick, Canada.
F. J. Alcock, 1946, Canada Geol. Survey Paper (Prelim. Map) 46–3.

Oak Creek member (of Supai formation)
Pennsylvanian: Arizona.
R. L. Jackson, 1951, Plateau, v. 24, no. 2, p. 87–88, 91.

Oak Hall member (of Nealmont limestone)
Middle Ordovician (Mohawkian): Pennsylvania.
G. M. Kay, 1944, Jour. Geology, v. 52, no. 1, p. 3; no. 2, p. 97.

Oak Hill member (of Naheola formation)
Paleocene (Midway): Alabama.
L. D. Toulmin, P. E. LaMoreaux, and C. R. Lanphere, 1951, Ala. Geol. Survey Special Rept. 21, p. 42–44.

Oak Orchard member (of Lockport formation)
Middle Silurian (upper Niagaran) : New York.
B. F. Howell and J. T. Sanford, 1947, Wagner Free Inst. Sci. Bull., v. 22, no. 4, p. 33–34.

Obatogamau granite
Precambrian : Quebec, Canada.
G. W. H. Norman, 1936, Royal Soc. Canada Trans., ser. 3, v. 30, sec. 4, p. 124.

Obispo tuff member (of Monterey formation)
Miocene, lower : California.
M. N. Bramlette, 1946, U. S. Geol. Survey Prof. Paper 212, p. 22–23.

Oblique Creek formation
Age unknown : British Columbia, Canada.
K. D. Watson and W. H. Matthews, 1944, British Columbia Dept. Mines Bull. 19, p. 14–15.

Obregon formation
Pennsylvanian (Cisco) : Texas.
M. G. Cheney, 1940, Am. Assoc. Petroleum Geologists Bull., v. 24, no. 1, p. 66, 91.

O'Carroll member (of Martin limestone)
Devonian : Arizona.
S. L. Tainter, 1948, U. S. Bur. Mines Rept. Inv. 4293, p. 5.

†Ocate sandstone
Jurassic : New Mexico.
G. O. Bachman, 1953, U. S. Geol. Survey Oil and Gas Inv. Map OM 137.

Oceanic formation
Eocene, upper, to Oligocene : Barbados, British West Indies.
J. B. Harrison and A. J. Jukes-Brown, 1890, The geology of Barbados : Salisbury, Bennett Brothers, p. 7, 17–26.
Alfred Senn, 1940, Am. Assoc. Petroleum Geologists Bull., v. 24, no. 9, p. 1577–1586.

Ochoa series
Permian : New Mexico and Texas.
J. E. Adams and others, 1939, Am. Assoc. Petroleum Geologists Bull., v. 23, no. 11, p. 1676–1677.

Ocoa formation
Eocene : Dominican Republic.
Richard Weyl, 1941, Deutsch-Dominikanischen Tropenforschungsinstituts Veröff., Band 2, p. 25, 29.

Oconto gabbroic anorthosite
Precambrian : Ontario, Canada.
J. M. Harrison, 1944, Geol. Soc. America Bull., v. 55, no. 12, p. 1409.

Ocotillo conglomerate
Pliocene, upper, of Pleistocene, lower : California.
T. W. Dibblee, Jr., 1954, Calif. Dept. Nat. Res., Div. Mines Bull. 170, chap. 2, p. 24.

Ocotillo silt member (of Tansill formation)
Permian (Guadalupe) : New Mexico and Texas.
W. Tex. Geol. Soc. [Guidebook] Fall Field Trip, Sept. 1940, p. 7, 14, fig. 2.
R. K. DeFord and G. D. Riggs, 1941, Am. Assoc. Petroleum Geologists Bull., v. 25, no. 9, p. 1717, 1722, table 2.

Ocozocualta [formation]
Upper Cretaceous: Tabasco, Mexico.
E. J. Guzman, Rodolfo Suarez, and Ernesto Lopez Ramos, 1953, 19e Cong. Géol. Internat. Comptes rendus, fasc. 16, pl. 1 (geol. map) [1954].

Odee formation
Pleistocene: Kansas.
H. T. U. Smith, 1940, Kans. State Geol. Survey Bull. 34, p. 100–108.

Offley Island formation
Middle Silurian (upper Llandovery): North Greenland.
Lauge Koch, 1929, Meddel. om Grønland, bind 73, afd. 2, nr. 2, p. 238–239.

Oglesby marble member (of Nittany formation)
Lower Ordovician (Canadian): Virginia.
B. N. Cooper, 1939, Va. Geol. Survey Bull. 55, p. 17–19.

Oglesby member (of Pecatonica formation)
Middle Ordovician: Illinois.
J. S. Templeton and H. B. Willman, 1952, Tri-State Geol. Soc. Guidebook 16th Ann. Field Conf., fig. 3.

Oglethorpe formation
Precambrian: Georgia.
A. S. Furcron and K. H. Teague, 1945, Ga. Geol. Survey Bull. 51, p. 35–36.

Ohia basalt
Pleistocene(?): Hawaiian Islands (Maui).
H. T. Stearns *in* H. T. Stearns and G. A. Macdonald, 1942, Hawaii Div. Hydrography Bull. 7, p. 94–96.

Oklan series (epoch)
Middle Pennsylvanian: North America.
R. C. Moore and M. L. Thompson, 1949, Am. Assoc. Petroleum Geologists Bull., v. 33, no. 3, p. 288–289, 292–297.

Okmok volcanics
Quaternary: Alaska (Aleutian Islands).
F. M. Byers, Jr., and others, 1947, U. S. Geol. Survey Alaskan Volcano Inv. Rept. 2, pt. 3, p. 31.

Okpikruak formation
Lower Cretaceous: Alaska.
George Gryc, W. W. Patton, Jr., and T. G. Payne, 1951, Washington Acad. Sci. Jour., v. 41, no. 5, p. 159–160.

Olaa agglomerate
[Quaternary]: Hawaiian Islands (Hawaii).
C. K. Wentworth, 1938, Hawaiian Volcano Observatory 3d Special Rept., p. 34, 38.

Olalla pyroxenite
Jurassic(?): British Columbia, Canada.
H. S. Bostock, 1940, Canada Geol. Survey Map 341A.

Olalla syenite
Jurassic and/or younger: British Columbia, Canada.
H. S. Bostock, 1940, Canada Geol. Survey Map 341A.

Olallie lavas
Pleistocene: Oregon.
T. P. Thayer, 1936, Jour. Geology, v. 44, no. 6, p. 706, 709 (fig. 2), 713 (fig. 3).

Old Bridge sand member (of Raritan formation)
Upper Cretaceous: New Jersey.
H. C. Barksdale and others, 1943, The ground-water supplies of Middlesex County, New Jersey: N. J. State Water Policy Comm. [Special Rept. 8], p. 67.

Olden gabbro
Precambrian: Ontario, Canada.
W. D. Harding, 1951, Ontario Dept. Mines Ann. Rept., v. 56, pt. 6, p. 24–25.

Older Angaur limestone
See Angaur (Older and Younger) limestone.

Oldman formation
Upper Cretaceous: Alberta, Canada.
L. S. Russell and R. W. Landes, 1940, Canada Geol. Survey Mem. 221, p. 62–72.

Old Ocean shale
Oligocene: Texas (subsurface).
Alexander Deussen and K. D. Owen, 1939, Am. Assoc. Petroleum Geologists Bull., v. 23, no. 11, p. 1634.

Oldsmar limestone
Eocene, lower: Florida (subsurface).
P. L. Applin and E. R. Applin, 1944, Am. Assoc. Petroleum Geologists Bull., v. 28, no. 12, p. 1681, 1698–1701.

Old Tom formation
Triassic or older: British Columbia, Canada.
H. S. Bostock, 1940, Canada Geol. Survey Map 341A.

Olean drift
Pleistocene (Wisconsin): New York and Pennsylvania.
Paul MacClintock and E. T. Apfel, 1944, Geol. Soc. America Bull., v. 55, no. 10, p. 1152–1155.

Olequa Creek member (of Cowlitz formation)
Eocene, upper: Washington.
D. A. Henriksen, 1954, Dissert. Abs., v. 14, no. 12, p. 2316.

Olga quartz diorite
Precambrian: Quebec, Canada.
B. C. Freeman, 1938, Jour. Geology, v. 46, no. 5, p. 691.

Olive Hill facies (of Muldraugh formation)
Lower Mississippian: Kentucky.
P. B. Stockdale, 1939, Geol. Soc. America Special Paper 22, p. 217–222.

Oliver syenite
Jurassic and/or younger: British Columbia, Canada.
H. S. Bostock, 1940, Canada Geol. Survey Map 341A.

Olokele formation
Pliocene(?): Hawaiian Islands (Kauai).
G. A. Macdonald, D. A. Davis, and D. C. Cox, 1954, Volcano Letter 526, p. 2 (fig. 1).

Olomoana volcanics
Pliocene(?): Samoa Islands (Tutuila).
H. T. Stearns, 1944, Geol. Soc. America Bull., v. 55, no. 11, p. 1286, 1288–1289.

Olvido formation
Jurassic: Tamaulipas, Mexico.
Arnold Heim, 1940, Eclogae Geologicae Helvetiae, v. 33, no. 2, p. 320.

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Olympic sand member (of Senora formation)
Pennsylvanian: Oklahoma (subsurface).
A. W. Tillotson, 1938, Am. Assoc. Petroleum Geologists Bull., v. 22, no. 11, p. 1579–1585.

Omadi sandstone
Cretaceous: Nebraska.
G. E. Condra and E. C. Reed, 1943, Nebr. Geol. Survey Bull. 14, p. 18–19, 20.

Onate formation
Middle Devonian: New Mexico.
F. V. Stevenson, 1945, Jour. Geology, v. 53, no. 4, p. 222–227.

Onesquethaw stage
Lower or Middle Devonian (Ulsterian): New York.
G. A. Cooper and others, 1942, Geol. Soc. America Bull., v. 53, no. 12, pt. 1, p. 1733, Chart 4.

One Tree formation
Lower Cretaceous: British Columbia, Canada.
J. A. Jeletsky, 1950, Canada Geol. Survey Paper 50–37, p. 38.

Ooyahgah formation
Middle Cambrian: Northwest Territories (Devon Island), Canada.
V. E. Kurtz, A. H. McNair, and D. B. Wales, 1952, Am. Jour. Sci., v. 250, no. 9, p. 646–648.

Opaoka complex
See Opaoka River complex.

Opaoka River complex
Precambrian: Quebec, Canada.
J. A. Dresser and T. C. Denis, 1949, Quebec Dept. Mines Geol. Rept. 20, v. 3, p. 31.

Open Door limestone
Cambrian: Wyoming.
A. B. Shaw and C. R. DeLand, 1955, Wyo. Geol. Assoc. Guidebook 10th Ann. Field Conf., p. 38, 41, figs. 1, 2.

Opuntia formation
Jurassic: British Columbia, Canada.
C. H. Crickmay, 1930, Calif. Univ. Pub. Dept. Geol. Sci. Bull., v. 19, no. 2, p. 33, 35.

Oracle granite
Precambrian: Arizona.
N. P. Peterson, 1938, Ariz. Bur. Mines Bull. 144, Geol. Ser. 11, p. 8–9, 10.

Ora Loma formation
See Oro Loma formation.

Oranda formation
Middle Ordovician: Virginia.
B. N. Cooper and G. A. Cooper, 1946, Geol. Soc. America Bull., v. 57, no. 1, p. 86–89.

Orchard Point conglomerate member (of Blakeley formation)
Oligocene, middle: Washington.
C. E. Weaver, 1937, Wash. [State] Univ. Pubs. in Geology, v. 4, p. 114.

Ord Mountain group
Triassic(?): California.
D. L. Gardner, 1940, Calif. Jour. Mines and Geology, v. 36, no. 3, p. 266–267.

Orella member (of Brule formation)
Oligocene: Nebraska.
C. B. Schultz and T. M. Stout, 1938, (abs.) Geol. Soc. America Bull., v. 49, no. 12, pt. 2, p. 1921; 1955, Nebr. Univ. State Mus. Bull., v. 4, no. 2, p. 41–44.

Orellan age
Oligocene: North America.
H. E. Wood, 2d, and others, 1941, Geol. Soc. America Bull., v. 52, no. 1, p. 11, pl. 1.

Ore Mountain diorite
Paleozoic (pre–late Devonian): Maine.
S. S. Philbrick, 1936, Am. Jour. Sci., 5th ser., v. 31, no. 181, p. 9–10.

Orestimba group
Upper Cretaceous: California.
F. M. Anderson, 1938, (abs.) Geol. Soc. America Bull., v. 49, no. 12, pt. 2, p. 1863.

Orfordville formation
Middle Ordovician(?): New Hampshire and Vermont.
C. A. Chapman and others, 1938, Geologic map and structure sections of the Mascoma quadrangle, New Hampshire (1:62,500): N. H. Highway Dept.
C. A. Chapman, 1939, Geol. Soc. America Bull., v. 50, no. 1, p. 132–134.

Orient formation
Paleozoic: Utah.
B. F. Stringham, 1942, Geol. Soc. America Bull., v. 53, no. 2, p. 271, pl. 1.

Orient granite porphyry
Tertiary: Utah.
B. F. Stringham, 1942, Geol. Soc. America Bull., v. 53, no. 2, p. 275.

Oriskany Falls member (of Oriskany sandstone)
Lower Devonian: New York.
Charles Schuchert, [1943], Stratigraphy of the eastern and central United States: New York, John Wiley and Sons, p. 85.

Orman Lake limestone member (of Greenhorn formation)
Upper Cretaceous: South Dakota and Wyoming.
B. C. Petsch, 1949, S. Dak. State Geol. Survey Rept. Inv. 65, p. 9–10.

Oro Blanco conglomerate
Mesozoic: Arizona.
G. M. Fowler, 1938, Ariz. Bur. Mines Bull. 145, Geol. Ser. 12, p. 121, pl. 32.

Orocopia schist
Precambrian: California.
W. J. Miller, 1944, Calif. Jour. Mines and Geology, v. 40, no. 1, p. 21.

Orocovis limestone
Upper Cretaceous: Puerto Rico.
R. C. Mitchell, 1954, Puerto Rico Univ. Agr. Expt. Sta. Tech. Paper 13, p. 47, 48.

Oro Loma formation
Pliocene, lower and middle: California.
F. F. Davis and D. W. Carlson, 1952, Calif. Jour. Mines and Geology, v. 48, no. 3, p. 212.
L. I. Briggs, Jr., 1953, Calif. Dept. Nat. Res., Div. Mines Bull. 167, p. 12, 46–48.

Oronoco formation
Cambrian: Virginia.
R. O. Bloomer and R. R. Bloomer, 1947, Jour. Geology, v. 55, no. 2, p. 95–97, 102–106.

Oro Plata granite porphyry
Tertiary: Utah.
B. F. Stringham, 1942, Geol. Soc. America Bull., v. 53, no. 2, p. 275.

Oropouche formation
Pleistocene: Trinidad, British West Indies.
E. W. Berry, 1925, U. S. Natl. Mus. Proc., v. 66, art. 21, p. 1, 2, 3.

Ortega formation
Tertiary: New Mexico.
H. T. U. Smith, 1937, (abs.) Geol. Soc. America Proc. 1936, p. 103.

Ortega quartzite
Precambrian: New Mexico.
Evan Just, 1937, N. Mex. School Mines Bull. 13, p. 21–22, 43.

Orton gravels
Pleistocene: South Dakota.
B. C. Petsch and E. J. Bolin, 1950, Areal geology of the Fort Bennett quadrangle [geol. map, 1:62,500]: S. Dak. State Geol. Survey.

Orwell limestone
Middle Ordovician (Black River–Trenton): Vermont.
W. M. Cady, 1945, Geol. Soc. America Bull., v. 56, no. 5, p. 524, 555, 556-557.

Osage lens (in Newcastle formation)
Upper Cretaceous: Wyoming.
R. M. Grace, 1952, Wyo. Geol. Survey Bull. 44, p. 14, 15.

Osgood Mountain quartzite
Lower Cambrian(?): Nevada.
H. G. Ferguson, S. W. Muller, and R. J. Roberts, 1951, Geology of the Winnemucca quadrangle, Nevada: U. S. Geol. Survey Geol. Quadrangle Map [GQ 11].

Osila sand
Cretaceous or Eocene: California.
F. C. Hodges and E. R. Murray-Aaron, 1943, Calif. Oil Fields, v. 29, no. 1, p. 14, pl. 6 [1944].
C. E. Leach, 1948, *in* Structure of typical American oil fields: Tulsa, Okla., Am. Assoc. Petroleum Geologists, v. 3, p. 34.

Osisko Lake rhyolites
Precambrian: Quebec, Canada.
H. J. Conolly and R. C. Hart, 1936, Canadian Inst. Mining and Metallurgy Trans., v. 39, p. 11.

Oso beds
Precambrian (Chuaran): Arizona.
Charles Keyes, 1938, Pan-Am. Geologist, v. 70, no. 2, p. 107, 112.

Osobb formation
Upper Triassic: Nevada.
S. W. Muller, H. G. Ferguson, and R. J. Roberts, 1951, Geology of the Mount Tobin quadrangle, Nevada: U. S. Geol. Survey Geol. Quadrangle Map [GQ 7].

Ostrander member (of Dakota formation)
Lower Cretaceous (Dakota): Minnesota.
C. R. Stauffer and G. A. Thiel, 1941, Minn. Geol. Survey Bull. 29, p. 103.

Ostrea limestone
Upper Cretaceous: Jamaica, British West Indies.
L. J. Chubb, 1955, Geol. Mag., v. 92, no. 3, p. 183.

O'Sullivan member (of Mannville formation)
Lower Cretaceous: Alberta, Canada (subsurface).
A. W. Nauss, 1945, Am. Assoc. Petroleum Geologists Bull., v. 29, no. 11, p. 1615.

Otates horizon (of Tamaulipas limestone)
Middle Cretaceous: Tamaulipas, Mexico.
J. M. Muir, 1936, Geology of the Tampico region, Mexico: Tulsa, Okla., Am. Assoc. Petroleum Geologists, p. 27–28.

Otoe redbed member (of Wellington formation)
Permian: Oklahoma.
G. O. Raasch, 1941, (abs.) Geol. Soc. America Bull., v. 52, no. 12, pt. 2, p. 1928.

Otoe shale member (of Friedrich formation)
Pennsylvanian (Virgil): Nebraska and Iowa.
G. E. Condra and E. C. Reed, 1938, Nebr. Geol. Survey Paper 12, p. 9.

Ouareau transition beds
Middle Ordovician (Black River): Quecbec, Canada.
V. J. Okulitch, 1939, Am. Jour. Sci., v. 237, no. 2, p. 83.

Outerson basalts
Pliocene: Oregon.
T. P. Thayer, 1936, Jour. Geology, v. 44, no. 6, p. 705, 706, 709 (fig. 2).

Outlaw formation
Lower Cretaceous: Arizona.
H. E. Enlows, 1955, Geol. Soc. America Bull., v. 66, no. 10, p. 1217.

Oveja formation
Precambrian (Kwaguntan): Arizona.
Charles Keyes, 1938, Pan-Am. Geologist, v. 70, no. 2, p. 107, 113.

Overall limestone member (of Admiral formation)
Permian (Wolfcamp age): Texas.
R. C. Moore *in* A. K. Miller and Walter Youngquist, 1947, Kans. Univ. Paleont. Contr. 2, Mollusca, art. 1, p. 1 (footnote).
R. C. Moore, 1949, U. S. Geol. Survey Oil and Gas Inv. Prelim. Map 80.

Overland Mountain granite
Precambrian: Colorado.
J. M. Bray, 1942, Geol. Soc. America Bull., v. 53, no. 5, p. 770.

Ovid formation
Upper Cambrian: Idaho and Utah.
C. D. Walcott, 1925, Smithsonian Misc. Coll., v. 75, no. 3, p. 96, 104, 105.
E. O. Ulrich and G. A. Cooper, 1938, Geol. Soc. America Special Paper 13, p. 25.

Owego shale member (of Cayuta monothem)
Upper Devonian (Chautauquan): Pennsylvania.
K. E. Caster, 1938, Jour. Paleontology, v. 12, no. 1, p. 45 (fig. 7), 47.

Owl Canyon formation
Permian: Colorado and South Dakota.
G. E. Condra, E. C. Reed, and O. J. Scherer, 1940, Nebr. Geol. Survey Bull. 13, p. 2, 4, 19, 45.

Owl Mountain glacial substage
Pleistocene (pre-Wisconsin): Colorado.
D. F. Eschman, 1952, (abs.) Geol. Soc. America Bull., v. 63, no. 12, pt. 2, p. 1380; 1955, Jour Geology, v. 63, no. 3, p. 201–203.

Oxarart member (of Bearpaw formation)
Upper Cretaceous: Saskatchewan, Canada.
G. M. Furnival, 1941, Royal Soc. Canada Trans., v. 35, sec. 4, p. 60–63.

Oxbow Creek basalt
Miocene and/or Pliocene: Wyoming.
A. D. Howard, 1937, Geol. Soc. America Special Paper 6, p. 77–79.

Oxford formation
Lower Ordovician (Beekmantown): Ontario, Canada.
A. E. Wilson, 1937, Royal Soc. Canada Trans., ser. 3, v. 31, sec. 4, p. 49, 52.

Oxford group
Precambrian: Manitoba, Canada.
J. F. Wright, 1932, Canada Geol. Survey Summ. Rept. 1931, pt. C, p. 9–11.

Paakea basalt
Pleistocene(?): Hawaiian Islands (Maui).
G. A. Macdonald *in* H. T. Stearns and G. A. Macdonald, 1942, Hawaii Div. Hydrography Bull. 7, p. 230, 251–252.

Pablo formation
Permian(?): Nevada.
H. G. Ferguson and S. H. Cathcart, 1954, U. S. Geol. Survey Geol. Quadrangle Map GQ 40.

Pacheco group
Upper Cretaceous: California.
N. L. Taliaferro, 1943, Calif. Dept. Nat. Res., Div. Mines Bull. 118, pt. 2, p. 131 [preprint 1941].

Pacheta member (of Lowell formation)
Lower Cretaceous: Arizona.
A. A. Stoyanow, 1949, Geol. Soc. America Mem. 38, p. 12, 14.

Pachuta marl member (of Yazoo clay)
Eocene, upper (Jackson group): Alabama.
G. E. Murray, 1947, Am. Assoc. Petroleum Geologists Bull., v. 31, no. 10, p. 1838, 1839 (footnote).
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Pacific muck
Pleistocene and Recent: Panama Canal Zone.
[T. R. Thompson], 1943, Panama Canal, Special Eng. Div., 3d Locks Proj., pt. 2, chap 3, p. 23–24.
S. M. Jones, 1950, Geol. Soc. America Bull., v. 61, no. 9, table 2.

Packard Ranch member (of Supai formation)
Pennsylvanian: Arizona.
R. L. Jackson, 1951, Plateau, v. 24, no. 2, p. 87–88, 91.

Packwood gravels
Pliocene to Pleistocene: California.
M. D. Crittenden, Jr., 1951, Calif. Dept. Nat. Res., Div. Mines Bull. 157, p. 42–43, pl. 1 (geol. map).

Pacoima formation
Pleistocene, upper: California.
G. B. Oakeshott, 1952, Petroleum World, v. 49, no. 1, p. 21 (map), 22.

Paddy member (of Peace River formation)
Lower Cretaceous: Alberta, Canada.
P. C. Badgley, 1952, Canada Geol. Survey Paper 52–11, p. 8.

Padilla limestone
Lower Cretaceous: Coahuila, Mexico.
R. W. Imlay, 1940, Geol. Soc. America Bull., v. 51, no. 1, p. 121, 123.

Pagan limestone
Recent: Mariana Islands (Pagan).
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Pago volcanic series
Pliocene and Pleistocene(?): Samoa Islands (Tutuila).
H. T. Stearns, 1944, Geol. Soc. America Bull., v. 55, no. 11, p. 1286, 1290–1299.

Pahrump series
Precambrian: California.
D. F. Hewett, 1940, Washington Acad. Sci. Jour., v. 30, no. 6, p. 239–240.

Painted formation
Middle Ordovician(?): Northeast Greenland.
A. B. Cleaves and E. F. Fox, 1935, Geol. Soc. America Bull., v. 46, no. 3, p. 476, pl. 43.

Painted Hill formation
Pliocene: California.
C. R. Allen, 1954, Calif. Dept. Nat. Res., Div. Mines Bull. 170, map sheet 20.

Painted Rock formation
Miocene, lower: California.
T. W. Dibblee, Jr., 1952, *in* AAPG, SEPM, SEG, Joint Ann. Meeting Guidebook, p. 82.

Paint Pot Crater flow
Recent: California.
C. A. Anderson, 1941, Calif. Univ. Dept. Geol. Sci. Bull., v. 25, no. 7, p. 371.

Paint River greenstones
Precambrian (Huronian): Michigan.
H. M. Martin, 1936, The centennial geological map of the northern peninsula of Michigan (1:500,000): Mich. Geol. Survey Div. Pub. 39 (Geol. Ser. 33).

Pajarito lavas
Mesozoic(?): Arizona.
B. P. Webb and K. C. Coryell, 1954, U. S. Atomic Energy Comm. RME–2009, p. 8, pl. 1.

Pajarito shale member (of Purgatoire formation)
Lower Cretaceous: New Mexico.
Ernest Dobrovolny and C. H. Summerson, 1946, U. S. Geol. Survey Oil and Gas Inv. Prelim. Map 62, sheet 1.

Pajaritos [formation]
Miocene, middle: Istmo de Tehauntepec, Mexico.
J. B. Gibson, 1936, Soc. Geol. Mexicana Bol., tomo 9, no. 5, correlation chart.

Pakoon limestone
Permian (Wolfcampian): Arizona.
A. H. McNair, 1951, Am. Assoc. Petroleum Geologists Bull., v. 35, no. 3, p. 524–525.

Palao limestone
See Palau limestone.

Palatine Bridge limestone member (of Tribes Hill formation)
Lower Ordovician (lower Canadian): New York.
D. W. Fisher, 1954, Geol. Soc. America Bull., v. 65, no. 1, p. 76 (fig. 2), 85–87.

Palau limestone
Pleistocene: Caroline Islands (Babelthaup).
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Palikea formation
Pleistocene: Hawaiian Islands (Kauai).
G. A. Macdonald, D. A. Davis, and D. C. Cox, 1954, Volcano Letter 526, p. 3.

Palliser formation
Devonian: Alberta, Canada.
G. S. Hume and H. H. Beach, 1941, Canada Geol. Survey Paper (Prelim. Map) 41–8.

Palmar formation
Lower Cretaceous: Senora, Mexico.
R. E. King, 1939, Geol. Soc. America Bull., v. 50, no. 11, p. 1660–1661.

Palmarolle granodiorite
Precambrian: Quebec, Canada.
H. C. Cooke, W. F. James, and J. B. Mawdsley, 1931, Canada Geol. Survey Mem. 166, p. 129.

Palm Canyon complex
Paleozoic or older: California.
W. J. Miller, 1944, Calif. Jour. Mines and Geology, v. 40, no. 1, p. 21–25.

Palmerton sandstone
Middle Devonian: Pennsylvania.
F. M. Swartz *in* Bradford Willard, F. M. Swartz, and A. B. Cleaves 1939, Pa. Geol. Survey, ser. 4, Bull. G 19, p. 52, fig. 17.

Palmetto type granite
Paleozoic (epi-Paleozoic): Georgia.
G. W. Crickmay, 1952, Ga. Geol. Survey Bull. 58, p. 40, 44.

Palmiste clays
Pliocene: Trinidad, British West Indies.
M. E. Lehner, 1935, [France] Office national des combustibles liquides Annales, 10e année, no. 4, p. 717 (table).
H. G. Kugler, 1936, Am. Assoc. Petroleum Geologists Bull., v. 20, no. 11, p. 1451 (chart).

Palm Park formation
Oligocene: New Mexico.
V. C. Kelley and Caswell Silver, 1952, N. Mex. Univ. Pubs. in Geology 4, p. 114, 120–121.

Palms granite
Precambrian: California.
W. J. Miller, 1938, Geol. Soc. America Bull., v. 49, no. 3, p. 421–424.

Palmyra limestone member (of Friedrich formation)
Pennsylvanian (Virgil): Nebraska and Iowa.
G. E. Condra and E. C. Reed, 1938, Nebr. Geol. Survey Paper 12, p. 9.

Palo Alto formation

Oligocene: Tamaulipas, Mexico.

Manuel Alvarez, Jr., 1951, Am. Assoc. Petroleum Geologists Bull., v. 35, no. 2, p. 365.

Palo Seco formation

Miocene: Trinidad, British West Indies.

R. A. Liddle, [1928], the geology of Venezuela and Trinidad: Fort Worth, Tex., J. P. MacGowan, p. 450–453.

H. G. Kugler, 1936, Am. Assoc. Petroleum Geologists Bull., v. 20, no. 11, p. 1445, 1451 (chart).

Palzo sandstone

Pennsylvanian: Illinois.

J. M. Weller, L. G. Henbest, and C. O. Dunbar *in* C. O. Dunbar and L. G. Henbest, 1942, Ill. State Geol. Survey Bull. 67, p. 10, 15 (fig. 2) [1943].

Pamoranes beds (in San Fernando formation)

Miocene: Tamaulipas, Mexico.

Ramiro Robles Ramos, 1942, Irrigación en Mexico, v. 23, no. 3, p. 45 (correlation chart).

Pamour conglomerate

Precambrian: Ontario, Canada.

Peter Price and R. C. E. Bray, 1948, *in* Structural geology of Canadian ore deposits: Canadian Inst. Mining and Metallurgy, p. 559.

Pampa schist

Jurassic or older: California.

T. W. Dibblee, Jr., and C. W. Chesterman, 1953, Calif. Dept. Nat. Res., Div. Mines Bull. 168, p. 12, 18–22.

Pando porphyry

Tertiary, lower: Colorado.

Ogden Tweto, 1951, Geol. Soc. America Bull., v. 62, no. 5, p. 510.

Paniau volcanic series

Pliocene(?): Hawaiian Islands (Niihau).

H. T. Stearns, 1946, Hawaii Div. Hydrography Bull. 8, p. 90, 91.

H. T. Stearns *in* H. T. Stearns and G. A. Macdonald, 1947, Hawaii Div. Hydrography Bull. 12, p. 18–19.

Panola granite

Age not given: Georgia.

L. A. Herrmann, 1954, Ga. Geol. Survey Bull. 61, p. 85.

Panther Canyon formation

Middle Triassic: Nevada.

H. G. Ferguson, S. W. Muller, and R. J. Roberts, 1951, Geology of the Winnemucca quadrangle, Nevada: U. S. Geol. Survey Geol. Quadrangle Map [GQ 11].

Papaskwasati group

Precambrian: Quebec, Canada.

J. M. Neilson, 1951, Quebec Dept. Mines Prelim. Rept. 254, p. 6.

Papatele trachyte

Pliocene or Pleistocene, lower: Samoa Islands (Tutuila).

R. A. Daly, 1924, Carnegie Inst. Washington Pub. 340, p. 106–108, 129–130.

Papel Blanco shale (in Puente formation)

Miocene, upper: California.

M. L. Krueger, 1943, Calif. Dept. Nat. Res., Div. Mines Bull. 118, pt. 3, p. 363.

A. O. Woodford, T. G. Moran, and J. S. Shelton, 1946, Am. Assoc. Petroleum Geologists Bull., v. 30, no. 4, p. 521.

Paradise member (of Cipero formation)
Oligocene: Trinidad, British West Indies.
R. M. Stainforth, 1948, Am. Assoc. Petroleum Geologists Bull., v. 32, no. 7, p. 1300–1301.

Paraje Solo formation
Miocene, middle: Istmo de Tehuantepec, Mexico.
J. B. Gibson, 1936, Soc. Geol. Mexicana Bol., tomo 9, no. 5, p. 280, 284, correlation chart.

Parashant tongue
Lower and/or Middle Cambrian: Arizona.
E. D. McKee, 1945, Carnegie Inst. Washington Pub. 563, p. 14, 29, 98–99.

Pardee gneiss
Precambrian: Newfoundland, Canada.
J. O. Fuller, 1941, Newfoundland Geol. Survey Bull. 15, p. 15.

Pardonet member (of Schooler Creek formation)
Triassic: British Columbia, Canada.
F. H. McLearn, 1940, Royal Soc. Canada Trans., ser. 3, v. 34, sec. 4, p. 67.

Parham gabbro
Precambrian: Ontario, Canada.
W. G. Miller, 1899, Ontario Bur. Mines Rept., v. 8, pt. 2, p. 228–229.
J. M. Harrison, 1944, Geol. Soc. America Bull., v. 55, no. 12, p. 1409.

Park City volcanics
Oligocene, lower: Utah.
A. J. Eardley, 1955, Utah Geol. Soc. Guidebook 10, p. 38, fig. 9.

Parker Hill sandstone member (of Stanley formation)
Pennsylvanian: Arkansas.
N. H. Stearn *in* J. M. Hansell and J. C. Reed, 1935, Am. Inst. Mining and Metall. Eng. Trans., v. 115, p. 245; 1936, Econ. Geology, v. 31, no. 1, p. 15–16.

Parks formation
Pennsylvanian (Lampasas): Texas (subsurface).
M. G. Cheney, 1940, Am. Assoc. Petroleum Geologists Bull., v. 24, no. 1, p. 66, 86.

Parlatuvier formation
Cretaceous(?): Tobago, British West Indies.
J. C. Maxwell, 1948, Geol. Soc. America Bull., v. 59, no. 8, p. 806–809.

Parras shale
Upper Cretaceous: Coahuila, Mexico.
R. W. Imlay, 1936, Geol. Soc. America Bull., v. 47, no. 7, p. 1132–1133.

Parritas formation
Lower Cretaceous: Coahuila, Mexico.
R. W. Imlay, 1936, Geol. Soc. America Bull., v. 47, no. 7, p. 1117–1119.

Parsonsburg sand
Pleistocene (late Wisconsin): Maryland.
W. C. Rasmussen and T. H. Slaughter, 1955, Md. Dept. Geology, Mines and Water Res. Bull. 16, p. 114–115, 118–119.

Parsons Pond beds
Ordovician: Newfoundland, Canada.
Rudolf Ruedemann, 1947, Geol. Soc. America Mem. 19, p. 59.

Partridge granite
Precambrian: Newfoundland, Canada.
J. O. Fuller, 1941, Newfoundland Geol. Survey Bull. 15, p. 16.

Partridge Island formation
Upper Carboniferous: New Brunswick, Canada.
A. O. Hayes and B. F. Howell, 1937, Geol. Soc. America Special Paper 5, p. 117–118.

Parunuweap formation
Pliocene(?): Utah.
H. E. Gregory, 1945, Jour. Geology, v. 53, no. 2, p. 110–115.

Par Value member (of Montoya dolomite)
Upper Ordovician: New Mexico.
L. P. Entwistle, 1944, N. Mex. State Bur. Mines Min. Res. Bull. 19, p. 17, 18.

Pascalis-Tiblemont granodiorite
Precambrian (Archean): Quebec, Canada.
A. S. MacLaren, 1950, Canada Geol. Survey Map 997A.

Paseo Hondo formation
Permian: Chiapas, Mexico.
M. L. Thompson and A. K. Miller, 1944, Jour. Paleontology, v. 18, no. 6, p. 486.

Paso Mono limestone
Upper Cretaceous: Tabasco, Mexico.
Ramiro Robles Ramos, 1942, Irrigación en Mexico, v. 23, no. 3, p. 45 (correlation chart).
G. P. Salas, 1949, Soc. Geológica Mexicana Bol., tomo 14, p. 54.

Paso Real formation
Oligocene to Miocene: Cuba.
P. J. Bermudez, 1950, Soc. Cubana Historia Nat. Mem., v. 19, no. 3, p. 283–284.

Passaconway syenite
Carboniferous(?) (White Mountain magma series): New Hampshire.
A. P. Smith and others, 1938, Geologic map and structure sections of the Mt. Chocorua quadrangle, New Hampshire (1 : 62,500) : N. H. Highway Dept.

Pass Peak conglomerate
Eocene, middle: Wyoming.
A. J. Eardley and others, 1944, Hoback–Gros Ventre–Teton Field Conference [geologic map]. Privately printed.
Leland Horberg, Vincent Nelson, and Victor Church, 1949, Geol. Soc. America Bull., v. 60, no. 1, p. 187, 190.

Pastoria sand member (of White Bluff formation)
Eocene (Jacksonian): Arkansas.
L. J. Wilbert, Jr., 1953, Ark. Div. Geology Bull. 19, p. 40–56.

Patagonia group
Lower Cretaceous: Arizona.
A. A. Stoyanow, 1937, (abs.) Geol. Soc. America Proc. 1936, p. 297 (table); 1949, Geol. Soc. America Mem. 38, p. 30, 53.

Patagonia limestone
Paleozoic (Devonic): Arizona.
[C. R.] Keyes, 1942, Pan-Am. Geologist, v. 77, no. 3, p. 227, 228.

Patoot beds

Upper Cretaceous (Senonian): Northwest Greenland.

Oswald Heer, 1883, Meddel. om Grønland, hefte 5, pt. 3, p. 83, 112–118; pt. 5, p. 226–228.

Lauge Koch, 1929, Meddel. om Grønland, bind 73, afd. 2, nr. 2, p. 258–262.

Patterson Ranch group

Ordovician: Oklahoma.

C. E. Decker, 1942, Okla. Acad. Sci. Proc., v. 22, p. 153–155.

Patula arkose

Lower Cretaceous: Coahuila, Mexico.

R. W. Imlay, 1940, Geol. Soc. America Bull., v. 51, no. 1, p. 121.

Pauba formation

Pleistocene: California.

J. F. Mann, Jr., 1955, Calif. Dept. Nat. Res., Div. Mines Special Rept. 43, p. 9, 13–14.

Pauwalu basalt

Pleistocene(?): Hawaiian Islands (Maui).

H. T. Stearns *in* H. T. Stearns and G. A. Macdonald, 1942, Hawaii Div. Hydrography Bull. 7, p. 94, 95.

Pavant flow

Pliocene, upper, or Pleistocene, lower: Utah.

G. B. Maxey, 1946, Am. Jour. Sci., v. 244, no. 5, p. 328.

Pavlof volcanics

Quaternary: Alaska.

G. C. Kennedy and H. H. Waldron, 1947, U. S. Geol. Survey Alaskan Volcano Inv. Rept. 2, pt. 2, pl. 2 (geol. map).

Pavlof Sister volcanics

Quaternary: Alaska.

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Pawtuckaway complex

Mississippian(?) (White Mountain magma series): New Hampshire.

C. J. Roy and Jacob Freedman, 1944, Geol. Soc. America Bull., v. 55, no. 7, p. 908–914.

Paxton Creek conglomerate (in Martinsburg shale)

Ordovician: Pennsylvania.

Bradford Willard and A. B. Cleaves, 1938, Pa. Geol. Survey, ser. 4, Bull. G 8, p. 5, 6.

Paynes shale and sandstone member (of Panoche group)

Upper Cretaceous: California.

I. F. Wilson, 1943, Calif. Jour. Mines and Geology, v. 39, no. 2, p. 201–202, 226 (fig. 5).

Paynes Hammock sand

Miocene: Alabama and Mississippi.

F. S. MacNeil, 1944, Am. Assoc. Petroleum Geologists Bull., v. 28, no. 9, p. 1346–1354.

Peace Valley beds

Pliocene, middle: California.

J. C. Crowell, 1950, Am. Assoc. Petroeum Geologists Bull., v. 34, no. 8, p. 1629 (fig. 5), 1631–1632, 1637.

Peach Springs member (of Muav formation)

Lower and/or Middle Cambrian: Arizona.

E. D. McKee, 1945, Carnegie Inst. Washington Pub. 563, p. 14, 29, 99–101.

Peanut Peak member (of Chadron formation)
Oligocene, lower: South Dakota.
John Clark, 1954, Carnegie Mus. Annals, v. 33, art. 11, p. 197–198.

Pearl Lake porphyry
Precambrian (Algoman): Ontario, Canada.
H. S. Robinson, 1923, Econ. Geology, v. 18, no. 7, p. 758, 760.
G. B. Langford and E. G. Hancox, 1936, Econ. Geology, v. 31, no. 6, p. 601.

Pearsall formation
Lower Cretaceous (Comanche series): Texas (subsurface).
R. W. Imlay, 1944, U. S. Geol. Survey Oil and Gas Inv. Prelim. Chart 3.

Pearson formation
Precambrian (Proterozoic): Northwest Territories (Mackenzie), Canada.
C. H. Stockwell, 1936, Canada Geol. Survey Map 377A.

Pearson glauconite member (of Sabinetown formation)
Eocene, lower (Wilcox): Louisiana and Texas.
Richard Wasem and L. J. Wilbert, Jr., 1943, Jour. Paleontology, v. 17, no. 2, p. 182 (footnote).
G. E. Murray, Jr., and E. P. Thomas, 1945, Am. Assoc. Petroleum Geologists Bull., v. 29, no. 1, p. 63.

Pease River group
Permian (Leonard series): Texas.
H. C. Fountain, 1939, *in* Am. Assoc. Petroleum Geologists Bull., v. 23, no. 5, p. 764.
Robert Roth, 1942, Am. Assoc. Petroleum Geologists Bull., v. 26, no. 8, p. 1412–1413.

Peasley limestone
Middle Cambrian (Albertan): Nevada.
H. E. Wheeler, 1940, Nev. Univ. Bull., Geology and Mining Ser., no. 34, p. 17–27.

Peasley Pond conglomerate and sandstone
Silurian: Quebec, Canada.
T. H. Clark, 1936, Canadian Field Naturalist, v. 50, no. 3, p. 33.

Pebble Island conglomerate
Precambrian: Saskatchewan, Canada.
A. M. Christie, 1952, Canada Geol. Survey Mem. 269, p. 13–14.

Peckham formation
Pleistocene, upper: California.
C. J. Leith, 1949, Calif. Dept. Nat. Res., Div. Mines Bull. 147, p. 26–27.

Peculiar shale (in Puente formation)
Miocene, upper: California.
M. L. Krueger, 1943, Calif. Dept. Nat. Res., Div. Mines Bull. 118, p. 363.
A. O. Woodford, T. G. Moran, and J. S. Shelton, 1946, Am. Assoc. Petroleum Geologists Bull., v. 30, no. 4, p. 521.

Pedernal chert member (of Abiquiu tuff)
Miocene(?): New Mexico.
F. S. Church and J. T. Hack, 1939, Jour. Geology, v. 47, no. 6, p. 618, pt. 3, 622.

†Pedernales dolomite member (of Wilberns formation)
Upper Cambrian: Texas.
Frederick Romberg and V. E. Barnes, 1944, Geophysics, v. 9, no. 1, p. 88.
P. E. Cloud, Jr., V. E. Barnes, and Josiah Bridge, 1946, Tex. Univ. Bur. Econ. Geology Pub. 4301, p. 150, 155 [1945].

Pedlar formation
Precambrian: Virginia.
R. O. Bloomer and H. J. Werner, 1955, Geol. Soc. America Bull., v. 66, no. 5, p. 582.

Pedregosa member (of Lowell formation)
Lower Cretaceous: Arizona.
A. A. Stoyanow, 1949, Geol. Soc. America Mem. 38, p. 8–9, 17–18.

Pedro Miguel agglomerate member (of Panama formation)
Miocene, lower: Panama Canal Zone.
[T. F. Thompson], 1943, Panama Canal, Special Eng. Div., 3d Locks Proj., pt. 2, chap. 3, p. 17–18.
W. P. Woodring and T. F. Thompson, 1949, Am. Assoc. Petroleum Geologists Bull., v. 33, no. 2, p. 242.

Peebles granite facies (of Ogishke conglomerate)
Precambrian (Knife Lake): Minnesota.
J. T. Stark and V. G. Sleight, 1939, Geol. Soc. America Bull., v. 50, no. 7, p. 1032 (table 2), 1034–1035.

Pe Ell volcanics member (of Cowlitz formation)
Eocene, upper: Washington.
D. A. Henriksen, 1954, Dissert. Abs., v. 14, no. 12, p. 2316.

Peery limestone member (of Cliffield formation)
Middle Ordovician: Virginia.
B. N. Cooper and C. E. Prouty, 1943, Geol. Soc. America Bull., v. 54, no. 6, p. 863–864.

Peewatai Lake granite
Precambrian (Archean): Ontario, Canada.
T. L. Tanton, 1938, Canada Geol. Survey Map 432A.

Pejepscot gneiss
Cambrian(?): Maine.
L. W. Fisher, 1938, (abs.) Geol. Soc. America Proc. 1937, p. 81; 1941, Geol. Soc. America Bull., v. 52, no. 1, p. 113–115, table 1.

Pekisko member (of Livingstone formation)
Carboniferous: Alberta, Canada.
R. J. W. Douglass, 1953, Alberta Soc. Petroleum Geologists 3d Ann. Field Conf. and Symposium, p. 68.

Peleliu limestone
Pleistocene: Caroline Islands (Peleliu, Ngemelis, and Angaur).
Risaburo Tayama, 1939, Correlation of the strata of the South Sea Islands: Geol. Soc. Japan Jour., v. 46, no. 549, p. 346 (correlation table) [English translation in library of U. S. Geol. Survey]; 1952, Coral reefs in the South Seas: Japan Hydrog. Office Bull., v. 11, p. 67, table 4 [English translation in library of U. S. Geol. Survey, p. 80].

Pelican Rock marls
Eocene, middle: Trinidad, British West Indies.
H. G. Kugler, 1936, Am. Assoc. Petroleum Geologists Bull., v. 20, No. 11, p. 1443, 1451 (chart).

Pelier schist
Paleozoic(?): Virgina.
W. R. Brown, 1951, (abs.) Geol. Soc. America Bull., v. 62, no. 12, pt. 2, p. 1547; 1953, Ky. Geol. Survey, ser. 9, Special Pub. 1, [p. 9] (fig. 1).

Pembroke eolianite
Pleistocene: Bermuda Islands.
R. W. Sayles, 1931, Am. Acad. Arts and Sci. Proc., v. 66, no. 11, p. 395.

Pembroke formation
Mississippian: Nova Scotia, Canada.
L. J. Weeks, 1945, Canada Geol. Survey Paper (Prelim. Map) 45–26.

Pemmican River formation
Upper Cambrian(?) (Lower Ozarkian?): North Greenland.
Christian Poulsen, 1927, Meddel. om Grønland, bind 70, nr. 2, p. 244, 341.

Peñal shales
See Peñal Quarry horizon.

Peñal Quarry horizon (of Palo Seco formation)
Eocene, lower and middle: Trinidad, British West Indies.
R. A. Liddle, [1928], The geology of Venezuela and Trinidad: Fort Worth, Tex., J. P. MacGowan, p. 450–453.

Pendejo tongue (of Abo formation)
Permian (Wolfcampian): New Mexico.
L. C. Pray, 1954, N. Mex. Geol. Soc. Guidebook 5th Field Conf., p. 93.

Pendleton formation
Eocene, lower (Wilcox): Texas and Louisiana.
Richard Wasem and L. J. Wilbert, Jr., 1943, Jour. Paleontology, v. 17, no. 2, p. 182–186.

Pendleton Ferry formation
Eocene (Wilcox): Texas and Louisiana.
G. E. Murray, Jr., and E. P. Thomas, 1945, Am. Assoc. Petroleum Geologists Bull., v. 29, no. 1, p. 56 (footnote).

Pendola shale
Upper Cretaceous: California.
B. M. Page, J. G. Marks, and G. W. Walker, 1951, Am. Assoc. Petroleum Geologists Bull., v. 35, no. 8, p. 1743–1744.

Pend Oreille andesite
See Pend Oreille Valley andesite.

Pend Oreille Valley andesite
Tertiary, upper(?): Washington.
M. C. Schroeder, 1949, (abs.) Northwest Science, v. 23, no. 1, p. 39–40.

Penitas formation
Pliocene: [Costa Rica].
H. N. Coryell and R. W. Mossman, 1942, Jour. Paleontology, v. 16, no. 2, p. 233.

Penitence Hill marl (of Navet formation)
Eocene, lower or middle: Trinidad, British West Indies.
J. A. Cushman and H. H. Renz, 1948, Cushman Lab. Foram. Research Special Pub. 24, p. 2, 3.

Penitentiary member (of Stony Mountain formation)
Upper Ordovician (Richmond): Manitoba, Canada.
V. J. Okulitch, 1943, Royal Soc. Canada Trans., sec. 4, v. 37, p. 60.

Penn Yan tongue (of West River shale)
Upper Devonian: New York.
W. L. Grossman, 1944, Geol. Soc. America Bull., v. 55, no. 1, p. 64–65.

Peñón formation
Eocene, middle: Cuba.
Jorge Brodermann, 1945, Soc. Cubana Ingenieros Rev., v. 42, no. 1, p. 144.

Pentecote granite
Precambrian(?): Quebec, Canada.
Carl Faessler, 1942, Quebec Dept. Mines Geol. Rept. 11, p. 18–19.

Pentoga greenstones
Precambrian (Huronian): Michigan.
H. M. Martin, 1936, The centennial geological map of the northern peninsula of Michigan (1:500,000): Mich. Geol. Survey Div. Pub. 39 (Geol. Ser. 33).

Peñuela limestone
Cretaceous (Senonian): Vera Cruz, Mexico.
Fernando Lozano Romen, 1955, Asociación Mexicana Geólogos Petroleros Bol., v. 7, nos. 1–2, p. 20, table facing p. 52.

Peoria silt member (of Sanborn formation)
Pleistocene (Peorian): Kansas.
J. C. Frye and O. S. Fent, 1947, Kans. State Geol. Survey Bull. 70, p. 45–50.

Percé Rock beds
Lower Devonian: Quebec, Canada.
J. A. Dresser and T. C. Denis, 1944, Quebec Dept. Mines Geol. Report. 20, p. 236.

Perdido formation
Mississippian: California.
J. F. McAllister, 1952, Calif. Dept. Nat. Res., Div. Mines Special Rept. 25, p. 22–25.

Peregrina formation
Mississippian: Tamaulipas, Mexico.
Arnold Heim, 1940, Eclogae Geologicae Helvetiae, v. 33, no. 2, p. 318.

Pereira shale member (of Alhambra formation)
Eocene, upper: California.
C. E. Weaver, 1953, Wash. [State] Univ. Pubs. in Geology, v. 7, p. 19 (chart), 55–56.

Perilla member (of Lowell formation)
Lower Cretaceous: Arizona.
A. A. Stoyanow, 1949, Geol. Soc. America Mem. 38, p. 9, 17.

Perini Hill flows
Quaternary: California.
J. C. Brice, 1953, Calif. Dept. Nat. Res., Div. Mines Bull. 166, p. 12, 36, 41, pl. 1.

Permenters Farm beds
Miocene, middle: Florida.
R. H. Smith, 1941, Am. Assoc. Petroleum Geologists Bull., v. 25, no. 2, p. 269–274.

Perote member (of Providence sand)
Upper Cretaceous: Alabama.
D. H. Eargle, 1948, Southeastern Geol. Soc. [Guidebook] 6th Field Trip, p. 44, 51–53.

Perry Branch siltstone member (of Brodhead formation)
Lower Mississippian: Kentucky.
P. B. Stockdale, 1939, Geol. Soc. America Special Paper 22, p. 189–191.

Perry Farm cyclothem (including Perry Farm shale)
Pennsylvanian (Des Moines) : Kansas.
J. M. Jewett, 1941, Kans. State Geol. Survey Bull. 38, pt. 11, p. 339–340; 1945, Bull. 58, p. 45–46, 69.

Perrysburg formation
Upper Devonian : New York.
J. F. Pepper and Wallace de Witt, Jr., 1951, U. S. Geol. Survey Oil and Gas Inv. Chart OC 45.

Persimmon Gap shale or formation
Upper Ordovician : Texas.
J. L. Wilson, 1954, Am. Assoc. Petroleum Geologists Bull., v. 38, no. 12, p. 2462, 2470.

Pescado tongue (of Mancos shale)
Upper Cretaceous : New Mexico.
W. S. Pike, Jr., 1947, Geol. Soc. America Mem. 24, p. 9, 34–35.

Peshastin glacial stage
Pleistocene : Washington.
B. M. Page, 1939, Jour. Geology, v. 47, no. 8, p. 787–795.

Petaca schist phase (of Ortega quartzite)
Precambrian : New Mexico.
Evan Just, 1937, N. Mex. School Mines Bull. 13, p. 43.

Petapa [formation]
Cretaceous (Neocomian) : Chiapas, Mexico.
G. P. Salas, 1949, Soc. Geol. Mexicana Bol., tomo 14, p. 55 (table 1).

Peten formation
Pre-Upper Triassic : Honduras.
R. H. Carpenter, 1954, Geol. Soc. America Bull., v. 65, no. 1, p. 25.

Petén marls and limestones
Upper Cretaceous(?), Eocene(?), or Oligocene(?) : Guatemala, British Honduras, and Mexico.
Hakon Wadell, 1926, Sydsvenska geografiska sällskapets Årsbok 1926 (Meddelanden från Lunds universitets geografiska inst., ser. C, no. 17), p. 149, 151, fig. 2; 1938, *in* S. G. Morley, Carnegie Inst. Washington Pub. 437, v. 4, p. 344, 345.
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Petermann series
Precambrian(?) : Northeast Greenland.
J. M. Wordie and W. F. Whittard, 1930, Geol. Mag., v. 67, p. 148–152.

Pethei formation
Precambrian (Proterozoic) : Northwest Territories (Mackenzie), Canada.
C. H. Stockwell, 1936, Canada Geol. Survey Map 377A.

Petit Jardin formation
Middle Cambrian : Newfoundland, Canada.
Christina Lochman, 1938, Jour. Paleontology, v. 12, no. 5, p. 463.

Petlalcingo limestone
Upper Cretaceous : Oaxaca, Mexico.
G. P. Salas, 1949, Asociación Mexicana Geólogos Petroleros Bol., v. 1, no. 2, p. 114–118.

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Petrified Forest member (of Chinle formation)
Upper Triassic: Utah, Arizona, and New Mexico.
G. B. Maxey, 1946, Am. Jour. Sci., v. 244, no. 5, p. 337.
H. E. Gregory, 1950, U. S. Geol. Survey Prof. Paper 220, p. 52, 67–68 [1952].

Peyto limestone member (of St. Piran sandstone)
Lower Cambrian: British Columbia, Canada.
Franco Rasetti, 1951, Smithsonian Misc. Coll., v. 116, no. 5, p. 55–56.

Phantom migmatite
Precambrian (Archean): Arizona.
Ian Campbell and J. H. Maxson, 1937, 17th Internat. Geol. Cong. Abs. of Papers, p. 65 (1939, Rept., v. 2, p. 260); 1938, Carnegie Inst. Washington Year Book 37, p. 363.

Phantom Island slate
Precambrian: Ontario, Canada.
F. J. Pettijohn, 1937, Geol. Soc. America Bull., v. 48, no. 2, p. 174, pl. 3.

Phelan limestone
Carboniferous(?): Utah.
V. E. Peterson, 1942, Econ. Geology, v. 37, no. 6, p. 471 (table 1).

Philcot-Crossecho Lakes volcanics
Precambrian: Ontario, Canada.
W. D. Harding, 1951, Ontario Dept. Mines Ann. Rept., v. 59, pt. 4, p. 18–19.

Philippo limestone
See Hirippo limestone.

Picard shale member (of Nesson formation)
Jurassic: Subsurface in Montana and North Dakota, and Manitoba, Canada.
J. W. Nordquist, 1955, Billings Geol. Soc. Guidebook 6th Ann. Field Conf., p. 104, 105, fig. 2.

Pichagua limestone
Permian: Coahuila, Mexico.
Wilhelm Haack, 1914, Deutschen Geol. Gesell. Zeitschr., Band 66, p. 489, 502.

Pichucalco beds
Eocene or Oligocene: Tabasco and Chiapas, Mexico.
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Pico series
See Pico Peak series.

Pico Peak series
Cambrian(?): Vermont.
H. E. Hawkes, Jr., 1941, Geol. Soc. America Bull., v. 52, no. 5, p. 653, 654, 657.

Picton limestone member (of Laventille formation)
Jurassic: Trinidad, British West Indies.
H. G. Kugler, 1953, Vereinigung Schweizer Petroleum Geologen u. Ingenieure Bull., v. 20, no. 59, p. 31.

Picuris basalts
Precambrian: New Mexico.
Evan Just, 1937, N. Mex. School Mines Bull. 13, p. 23–24, 44.

Picuris tuff

Tertiary (pre–Santa Fe) : New Mexico.

E. C. Cabot, 1938, Jour. Geology, v. 46, no. 1, p. 91.

Piedmont sandstone

Permian : Oklahoma.

Henry Schweer *in* O. E. Brown, 1937, Am. Assoc. Petroleum Geologists Bull., v. 21, no. 12, p. 1553 (fig. 9).

Piedras Atlas formation

Upper Cretaceous : California.

N. L. Taliaferro, 1943, Calif. Dept. Nat. Res., Div. Mines Bull. 118, pt. 2, p. 132 [preprint 1941].

Piegan group

Precambrian (Belt series) : Montana, and Alberta, Canada.

C. L. Fenton and M. A. Fenton, 1937, Geol. Soc. America Bull., v. 48, no. 12, p. 1890–1892.

Pierce Estate sands

Oligocene : Texas (subsurface).

Alexander Deussen and K. D. Owen, 1939, Am. Assoc. Petroleum Geologists Bull., v. 23, no. 11, p. 1634.

Piermont member (of Albee formation)

Ordovician (?) : New Hampshire.

J. B. Hadley and others, 1938, Geologic map and structure sections of the New Hampshire portion of the Mt. Cube quadrangle (1 : 62,500) : N. H. Highway Dept.
J. B. Hadley, 1942, Geol. Soc. America Bull., v. 53, no. 1, p. 126.

Pierre Point beds (of Ponte-à-Pierre formation)

Eocene, lower or middle : Trinidad, British West Indies.

R. A. Liddle, [1928], The geology of Venezuela and Trinidad : Fort Worth, Tex., J. P. MacGowan, p. 446–447.

Pierreville clay

Pleistocene : Trinidad, British West Indies.

H. H. Suter, 1951, Colonial Geology and Min. Res., v. 2, no. 3, p. 212, 213 [1952].

Pierreville member (of Bécancour River formation)

Ordovician : Quebec, Canada.

T. H. Clark, 1947, Quebec Dept. Mines Prelim. Rept. 204, p. 14–15.

Pierson glauconite

See Pearson glauconite member (of Sabinetown formation).

Pigeon gneiss

Precambrian : Newfoundland, Canada.

J. O. Fuller, 1941, Newfoundland Geol. Survey Bull. 15, p. 14.

Pigeon Creek member (of Fernie formation)

Jurassic : Alberta, Canada.

M. B. B. Crockford, 1949, Alberta Research Council Rept. 52, p. 25, 27.

Piinaau basalt

Pleistocene (?) : Hawaiian Islands (Maui).

H. T. Stearns *in* H. T. Stearns and G. A. Macdonald, 1942, Hawaii Div. Hydrography Bull. 7, p. 95, 96.

Pika formation
Upper Cambrian: Alberta, Canada.
Charles Deiss, 1939, Geol. Soc. America Bull., v. 50, no. 6, p. 1008–1009.

Pike Arm formation
Silurian: Newfoundland, Canada.
W. H. Twenhofel and R. R. Shrock, 1937, Geol. Soc. America Bull., v. 48, no. 12, p. 1749, 1767.

Pikes Island conglomerate
Silurian: Newfoundland, Canada.
D. M. Baird, 1953, Newfoundland Geol. Survey Rept. 1, p. 13–14.

Pilar phyllite member (of Ortega formation)
Precambrian: New Mexico.
Arthur Montgomery, 1953, N. Mex. State Bur. Mines Min. Res. Bull. 30, p. 19-21.

Pilares monzonite
Age not stated: Sonora, Mexico.
W. R. Wade and Alfred Wandtke, 1920, Am. Inst. Mining and Metall. Engineers Trans., v. 63, p. 383.

Pilchuck clay member (of Vashon drift)
Pleistocene: Washington.
R. C. Newcomb, 1952, U. S. Geol. Survey Water-Supply Paper 1135, p. 19, pl. 1.

Pilier conglomerate and sandstone
Lower Mississippian: Nova Scotia, Canada.
Frederick Betz, Jr., 1948, Newfoundland Geol. Survey Bull. 24, p. 10.

Piliguilla conglomerate
Pliocene: Panama.
Karl Sapper, 1937, Mittelamerika, Handbuch der regionalen Geologie: Heidelberg, Band 8, Abt. 4a, Heft 29, p. 134 (correlation chart), pl. 10 (geol. map).

Pillage Bay sandstone (of Romaine formation)
Ordovician (Beekmantown): Quebec, Canada.
A. W. Grabau, 1936, Paleozoic formations in the light of the pulsation theory, v. 2, Cambrovician pulsation, pt. 1, Caledonian and St. Lawrence geosynclines: Peiping, China, University Press, Natl. Univ. Peking, p. 523, 524.

Pillar sandstones
Lower Ordovician: Quebec, Canada.
H. W. McGerrigle, 1954, Quebec Dept. Mines Geol. Rept. 62, p. 27.

Pillar Bluff limestone
Lower Devonian (Helderberg stage): Texas.
V. E. Barnes, P. E. Cloud, Jr., and L. E. Warren, 1946, Tex. Univ. Bur. Econ. Geology Pub. 4301, p. 166–169 [1945].

Pilleys series
Ordovician(?): Newfoundland, Canada.
G. H. Espenshade, 1937, Newfoundland Geol. Survey Bull. 6, p. 12–13.

Pilot cyclothem or formation
Pennsylvanian (Des Moines): Kansas.
G. E. Abernathy, 1937, Kans. Geol. Soc. Guidebook 11th Ann. Field Conf., p. 18, 20, 22; 1938, Kans. Acad. Sci. Trans., v. 41, p. 193, 195.

Pilot Knob facies (of Brodhead formation)
Lower Mississippian: Kentucky.
P. B. Stockdale, 1939, Geol. Soc. America Special Paper 22, p. 146–148.

Pilot Knob tuff

Upper Cretaceous: Texas

C. O. Durham, Jr., 1955, Corpus Christi Geol. Soc. [Guidebook] Ann. Field Trip, March 11–12, [p. 58], pl. 16

Pine sand

Pleistocene: North Carolina.

B. W. Wells, 1944, Elisha Mitchell Sci. Soc. Jour., v. 60, no. 2, p. 131–132.

Pine Bluff volcanic zone (of Eagleford formation)

Cretaceous: Texas.

R. T. Hazzard, 1939, Shreveport Geol. Soc. Guidebook 14th Ann. Field Trip, p. 139, 140–141.

Pine Hill syenite

Precambrian: Quebec, Canada.

F. F. Osborne, 1933, Quebec Dept. Mines Ann. Rept. 1932, pt. E, p. 52.

Pine Island shale in Arkansas, Louisiana, and east Texas
Pine Island shale member (of Pearsall formation) in south Texas

Lower Cretaceous (Comanche series): Subsurface in Arkansas, Louisiana, and Texas.

H. K. Shearer, 1938, Am. Assoc. Petroleum Geologists Bull., v. 22, no. 6, p. 721, 722, 725.

R. W. Imlay, 1945, Am. Assoc. Petroleum Geologists Bull., v. 29, no. 10, p. 1447.

Pine Knob sandstone

Lower Mississippian (Oil Lake): Pennsylvania.

W. M. Laird, 1941, Pa. Topog. and Geol. Survey Progress Rept. 126, p. 14 (footnote).

Pine Mountain porphyry

Precambrian: Arizona.

E. D. Wilson, 1939, Geol. Soc. America Bull., v. 50, no. 7, p. 1139, pl. 2.

Pine Plains formation

Upper Cambrian: New York.

E. B. Knopf, 1946, (abs.) Geol. Soc. America Bull., v. 57, no. 12, pt. 2, p. 1212.

Pinery limestone member (of Cherry Canyon formation)

Permian: Texas and New Mexico.

P. B. King *in* A. K. Miller and W. M. Furnish, 1940, Geol. Soc. America Special Paper 26, p. 9.

P. B. King, 1942, Am. Assoc. Petroleum Geologists Bull., v. 26, no. 4, p. 582–583, pl. 2.

Pinesburg member (of Shippensburg formation)

Middle Ordovician (Bolarian): Pennsylvania and Maryland.

L. C. Craig, 1949, Geol. Soc. America Bull., v. 60, no. 4, p. 715 (fig. 1), 718–722.

Pine Valley quartzite

Cambrian: Utah.

J. D. Forrester, 1937, Geol. Soc. America Bull., v. 48, no. 5, p. 638, pls. 2, 3.

Piney Creek alluvium

Recent: Colorado.

C. B. Hunt, 1954, U. S. Geol. Survey Bull. 996–C, p. 114–117.

Piney Point formation

Eocene (Jackson age): Subsurface in Maryland, Delaware, and Virginia.

E. G. Otton, 1955, Md. Dept. Geology, Mines and Water Res. Bull. 15, p. 85–88.

Pinkerton Trail limestone.
Pennsylvanian (Atoka and Des Moines): Colorado and Utah.
S. A. Wengerd and J. W. Strickland, 1954, Am. Assoc. Petroleum Geologists Bull., v. 38, no. 10, p. 2168–2169, fig. 7.

Pinnacles formation
Miocene(?): California.
Philip Andrews, 1936, Calif. Univ. Pubs. Dept. Geol. Sci. Bull., v. 24, no. 1, p. 19, 25, 26, map 1.

Pinole formation
Oligocene: Tamaulipas, Mexico.
Manuel Alvarez, Jr., 1951, Am. Assoc. Petroleum Geologists Bull., v. 35, no. 2, p. 365.

Pinto gneiss
Precambrian: California.
W. J. Miller, 1938, Geol. Soc. America Bull., v. 49, no. 3, p. 419, 424–428.

Pinyon Ridge granodiorite
Jurassic(?): California.
L. F. Noble, 1954, U. S. Geol. Survey Geol. Quadrangle Map GQ 50.

Pioa breccia
Pliocene or Pleistocene, lower: Samoa Islands (Tutuila).
R. A. Daly, 1924, Carnegie Inst. Washington Pub. 340, p. 100, 106, 129.

Pioa rhyolite
Pliocene or Pleistocene, lower: Samoa Islands (Tutuila).
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Pioneer formation
Upper Triassic or Jurassic: British Columbia, Canada.
C. E. Cairnes, 1937, Canada Geol. Survey Mem. 213, p. 16–18.

Pioneer group
Upper Cretaceous: California.
F. M. Anderson, 1938, (abs.) Geol. Soc. America Bull., v. 49, no. 12, pt. 2, p. 1863

Pipeline shale
Permian (Leonard-Guadalupe): Texas.
W. C. Warren *in* P. B. King, N. D. Newell, and D. W. Boyd, 1955, Permian field conference to the Guadalupe Mountains: Soc. Econ. Paleontologists and Mineralogists, p. 11.

Piper formation
Middle Jurassic: Montana.
R. W. Imlay and others, 1948, U. S. Geol. Survey Oil and Gas Inv. Prelim. Chart 32.

Pipestone Canyon formation
Eocene(?): Washington.
J. D. Barksdale, 1948, Northwest Science, v. 22, no. 4, p. 165, 175.

Piru formation
Eocene: California.
S. J. Kříž, 1955, Dissert. Abs., 1. 15, no. 3, p. 393.

Piru Gorge sandstone
Pliocene, middle: California.
D. I. Axelrod, 1950, Carnegie Inst. Washington Pub. 590, p. 169.

Pitcairn gneiss complex
Precambrian (Grenville): New York.
A. F. Buddington, 1939, Geol. Soc. America Mem. 7, p. 15–17.

Pittsburg formation
Carboniferous: Idaho and Oregon.
W. R. Wagner, 1945, Idaho Bur. Mines and Geology Pamph. 74, p. 4–5.

Pittsburg formation
Pleistocene: California.
C. F. Tolman, 1931, Calif. Dept. Public Works, Div. Water Res. Bull. 28, p. 354, pl. D–IX, D–X.

Pittsfield member (of Littleton formation)
Lower Devonian: New Hampshire.
M. T. Heald, 1955, The geology of the Gilmanton quadrangle, New Hampshire: N. H. State Plan. Devel. Comm., p. 8, 10.

Plainview sandstone member (of South Platte formation)
Lower Cretaceous: Colorado.
K. M. Waagé, 1955, U. S. Geol. Survey Prof. Paper 274–B, p. 28–29.

Plaisance conglomerate
Eocene, upper: Trinidad, British West Indies.
G. A. Waring, 1926, Johns Hopkins Univ. Studies in Geology, no. 7, p. 44–45, pl. 6 (geol. map).

Plancitos formation
Cretaceous: Honduras.
R. H. Carpenter, 1954, Geol. Soc. America Bull., v. 65, no. 1, p. 28.

Playas Peak formation
Lower Cretaceous (Bisbee group): New Mexico.
S. G. Lasky, 1938, Am. Assoc. Petroleum Geologists Bull., v. 22, no. 5, p. 534, fig. 2.

Pleasant Lake gabbro
Precambrian: New York.
A. F. Buddington, 1939, Geol. Soc. America Mem. 7, p. 59, 61.

Pleasants sandstone member (of Williams formation)
Upper Cretaceous: California.
W. P. Popenoe, 1937, Jour. Paleontology, v. 11, no. 5, p. 380.

Pleasant Valley member (of Cuyahoga formation)
Mississippian: Ohio.
F. T. Holden, 1941, Ill. Acad. Sci. Trans., v. 34, no. 2, p. 172.

Pleasant View complex
Paleozoic and Mesozoic: California.
L. F. Noble, 1954, U. S. Geol. Survey Geol. Quadrangle Map GQ 50.

Pleasant View member (of Arapahoe-Denver formation)
Tertiary: Colorado.
L. W. LeRoy, 1946, Colo. School Mines Quart., v. 41, no. 2, p. 100, 103–104.

Plum Brook shale
Devonian: Ohio.
G. A. Cooper, 1941, Washington Acad. Sci. Jour., v. 31, no. 5, p. 181.

Plum Road formation
Lower Cretaceous: Trinidad, British West Indies.
R. A. Liddle, [1928], The geology of Venezuela and Trinidad: Fort Worth, Tex., J. P. MacGowan, p. 436–439.

Plutos Cave basalt
Recent: California.
Howel Williams, 1949, Calif. Dept. Nat. Res., Div. Mines Bull. 151, p. 42–43.

Plymouth Union series
Cambrian(?): Vermont.
H. E. Hawkes, Jr., 1941, Geol. Soc. America Bull., v. 52, no. 5, p. 653, 654, 657.

Pocatello formation
Precambrian: Idaho.
J. C. Ludlum, 1942, Jour. Geology, v. 50, no. 1, p. 89–90.

Pocaterra Creek member (of Blairmore formation)
Lower Cretaceous: Alberta, Canada.
J. A. Allan and J. L. Carr, 1947, Alberta Research Council Rept. 49, p. 28.

Poe evaporate member (of Nesson formation)
Jurassic: Subsurface in North Dakota and Montana, and Manitoba, Canada.
J. W. Nordquist, 1955, Billings Geol. Soc. Guidebook 6th Ann. Field Conf., p. 104–105, fig. 2.

Pohakuloa drift and stage
Pleistocene: Hawaiian Islands (Hawaii).
C. K. Wentworth, 1939, (abs.) Geol. Soc. America Bull., v. 50, no. 12, pt. 2, p. 1942.
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Point series
Precambrian: Newfoundland (Labrador) and Quebec, Canada.
J. K. Gustafson and A. E. Moss, 1953, Mining Eng., v. 5, no. 6, p. 595 (table 1).

Point Arena beds
Miocene, upper: California.
C. E. Weaver, 1943, Calif. Dept. Nat. Res., Div. Mines Bull. 118, pt. 3, p. 630, 631.

Point Bontour formation
See Bontour formation.

Pointe-à-Pierre Railway Cut marl
See Railway Cut marl.

Pointe aux Chenes formation
Upper Silurian (Cayugan): Michigan.
G. M. Ehlers *in* K. K. Landes, G. M. Ehlers, and G. M. Stanley, 1945, Mich. Dept. Conserv. Geol. Survey Div. Pub. 44, Geol. Ser. 37, p. 33, 35–52.

Pointe Blanche formation
Upper Cretaceous(?): St. Martin, Netherlands and French West Indies.
G. A. F. Molengraaf, 1888, Het geologisch Verband tusschen de West-Indische Eilanden: Natuur- en Geneeskundig Cong. 1 Handl., Amsterdam, 1887, p. 289; 1931, Leidsche Geol. Meded., Deel 5, p. 730–736.

Pointe Noir beds
Miocene: Trinidad, British West Indies.
C. J. Maury, 1925, Bull. Am. Paleontology, v. 10, no. 42, p. 162 (10).

Point Farfan diorite
Pre-Pliocene: Panama Canal Zone.
[T. F. Thompson], 1943, Panama Canal, Special Eng. Div., 3d Locks Proj., pt. 2, chap. 3, p. 26.

Point Lake phase (of Point Lake–Wilson Island group)
Precambrian (Archean?): Northwest Territories (Mackenzie), Canada.
C. H. Stockwell, 1936, Canada Geol. Survey Map 377A.

Point Lake–Wilson Island group
Precambrian (Archean?): Northwest Territories (Mackenzie), Canada.
C. H. Stockwell, 1936, Canada Geol. Survey Map 377A.

Point of Rocks sandstone
Upper Eocene: California.
R. D. Reed and J. S. Hollister, 1936, Am. Assoc. Petroleum Geologists Bull., v. 20, no. 12, p. 1566, 1568.
Martin Van Couvering and H. B. Allen, 1943, Calif. Dept. Nat. Res., Div. Mines Bull. 118, pt. 3, p. 496–500.

Point Peak shale member (of Wilberns formation)
Upper Cambrian: Texas.
Frederick Romberg and V. E. Barnes, 1944, Geophysics, v. 9, no. 1, p. 88.
P. E. Cloud, Jr., V. E. Barnes, and Josiah Bridge, 1946, Tex. Univ. Bur. Econ. Geology Pub. 4301, p. 149, 155 [1945].

Point Rock shale member (of Wilberns formation)
Upper Cambrian: Texas.
B. F. Howell and others, 1944, Geol. Soc. America Bull., v. 55, no. 8, pl. 1.

Point Sal formation
Miocene, middle: California.
C. R. Canfield, 1939, Am. Assoc. Petroleum Geologists Bull., v. 23, no. 1, p. 66 (footnote).
W. P. Woodring, M. N. Bramlette, and K. E. Lohman, 1943, Am. Assoc. Petroleum Geologists Bull., v. 27, no. 10, p. 1341 (table 1), 1344–1345.

Point Wilkins member (of Manitoban formation)
Middle or Upper Devonian: Manitoba, Canada.
A. D. Baillie, 1950, Manitoba Dept. Mines and Nat. Res. Mines Br. Pub. 49–2, p. 41.

Pokeberry limestone (in McLeansboro formation)
Pennsylvanian: Illinois.
H. R. Wanless, 1939, Geol. Soc. America Special Paper 17, p. 17, 98.

Poland limestone member (of Denmark formation)
Middle Ordovician (Mohawkian): New York.
G. M. Kay, 1943, Am. Jour. Sci., v. 241, no. 10, p. 598–601.

Polaris Harbour formation
Silurian: North Greenland.
Lauge Koch, 1929, Meddel. om Grønland, bind 73, afd. 2, nr. 2, p. 241–242.

Polecat Bench formation
Paleocene: Wyoming.
G. L. Jepsen, 1940, Am. Philos. Soc. Proc., v. 83, no. 2, p. 231–238.

Police Post limestone
Lower Cambrian: Northwest Territories (Ellesmere Island), Canada.
J. C. Troelsen, 1950, Meddel. om Grønland, bind 149, nr. 7, p. 38.

Pollack quartz latite
Tertiary, upper: New Mexico.
H. L. Jicha, Jr., 1954, N. Mex. State Bur. Mines Min. Res. Bull. 37, p. 39–47.

Pololu volcanic series
Pliocene(?): Hawaiian Islands (Hawaii).
H. T. Stearns and G. A. Macdonald, 1946, Hawaii Div. Hydrography Bull. 9, p. 171–176.

Pomeroy member (of Naknek formation)
Upper Jurassic: Alaska.
C. E. Kirschner and D. L. Minard, 1948, U. S. Geol. Survey Oil and Gas Inv. Prelim. Map 95 [1949].

Ponia limestone
See Poniya limestone.

Poniya limestone
Pliocene(?): Mariana Islands (Rota).
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Pontgravé River formation
Ordovician: Quebec, Canada.
T. H. Clark, 1947, Quebec Dept. Mines Prelim. Rept. 204, p. 13.

Pools Cove formation
Lower Cambrian: Newfoundland, Canada.
B. F. Howell, 1939, Wagner Free Inst. Sci. Bull., v. 14, no. 4, p. 49–50.

Poor Valley Ridge member (of Clinch sandstone)
Silurian: Virginia.
R. L. Miller and J. C. Fuller, 1947, U. S. Geol. Survey Oil and Gas Inv. Prelim. Map 76.

Pope Springs sandstone
[Upper Paleozoic]: Wyoming.
C. M. Boos, 1941, Colo.-Wyo. Acad. Sci. Jour., v. 3, no. 1, p. 25–26.

Poplar Mountain gneiss
Pre-Triassic: Massachusetts.
M. E. Willard, 1951, Bedrock geology of the Mount Toby quadrangle, Massachusetts: U. S. Geol. Survey Geol. Quadrangle Map [GQ 8].

Popotosa formation
Miocene, upper: Mexico.
C. S. Denny, 1940, Jour. Geology, v. 48, no. 1, p. 77–84.

Porphyry Mountain group
Lower Devonian: Quebec, Canada.
A. M. Bell, 1951, Canadian Inst. Mining and Metallurgy Trans., v. 54, p. 241.

Porphyry Peaks conglomerate
Pleistocene(?): Colorado.
R. L. Ives, 1938, Geol. Soc. America Bull., v. 49, no. 7, p. 1049–1050.

Portage Lake lava series
Precambrian (middle Keweenawan series): Michigan.
W. S. White, 1952, Jour. Sed. Petrology, v. 22, no. 4, p. 190.
W. S. White, H. R. Cornwall, and R. W. Swanson, 1953, U. S. Geol. Survey Geol. Quadrangle Map GQ 27 [1954].

Port-au-Prince beds
Miocene, middle: Haiti.
H. N. Coryell and F. C. Rivero, 1940, Jour. Paleontology, v. 14, no. 4, p. 324.
Alfred Senn, 1940, Am. Assoc. Petroleum Geologists Bull., v. 24, no. 9, p. 1582.

Porter Road formation
Middle Cambrian (Loch Lomond): New Brunswick, Canada.
A. O. Hayes and B. F. Howell, 1937, Geol. Soc. America Special Paper 5, p. 72–73.

Port Harrison series
Precambrian: Quebec, Canada.
E. H. Kranck, 1951, Acta Geographica, v. 11, no. 2, p. 40.

Portland arkose
Triassic: Connecticut.
P. D. Krynine, 1941, (abs.) Geol. Soc. America Bull., v. 52, no. 12, pt. 2, p. 1919; 1950, Conn. State Geol. Nat. History Survey Bull. 73, p. 69–70.

Portland Head group
Middle Ordovician: Newfoundland, Canada.
Helgi Johnson, 1940, N. Y. Acad. Sci. Trans., ser. 2, v. 3, no. 6, p. 142.

Portland Hills silt member (of Troutdale formation)
Pliocene, upper, or Pleistocene, lower: Oregon.
W. D. Lowry and E. M. Baldwin, 1952, Geol. Soc. America Bull., v. 63, no. 1, p. 10–13, pl. 2.

Port Maria conglomerate
Eocene: Jamaica, British West Indies.
C. A. Matley, 1929, Geol. Soc. London Quart, Jour., v. 85, pt. 4, p. 462.

Port Orford formation
Pliocene, middle: Oregon.
E. M. Baldwin, 1945, Jour. Geology, v. 53, no. 1, p. 37–39.

Port Royal clay shales
Age not stated: Jamaica, British West Indies.
J. G. Sawkins, 1869, Reports on the geology of Jamaica: [Great Britain] Geol. Survey Mem., p. 90, 92, 93.

Port Wing brownstone member (of Orienta formation)
Cambrian: Wisconsin.
G. O. Raasch, 1950, Ill. Acad. Sci. Trans. v. 43, p. 147, fig. 8.

Portwood formation
Middle Devonian: Kentucky.
Guy Campbell, 1946, Geol. Soc. America Bull., v. 57, no. 9, p. 862–866.

Posey formation
Quaternary: California.
P. D. Trask and J. W. Rolston, 1951, Geol. Soc. America Bull., v. 62, no. 9, p. 1079, 1082, 1103.

Post Oak conglomerate member (of Wichita formation)
Permian: Oklahoma.
G. W. Chase, 1954, Am. Assoc. Petroleum Geologists Bull., v. 38, no. 9, p. 234.

Post Pond volcanic member (of Orfordville formation)
Middle Ordovician (?): New Hampshire and Vermont.
C. A. Chapman and others, 1938, Geologic map and structure sections of the Mascoma quadrangle, New Hampshire (1 : 62,500): N. H. Highway Dept.
C. A. Chapman, 1939, Geol. Soc. America Bull., v. 50, no. 1, p. 133–134.

Potato Hill andesite
Tertiary: Texas.
S. S. Goldich and M. A. Elms, 1946, (abs.) Geol. Soc. America Bull., v. 57, no. 12, pt. 2, p. 1197; 1949, v. 60, no. 7, p. 1155–1156.

Poteet limestone
Middle Ordovician: Virginia.
R. L. Miller and W. P. Brosgé, 1950, U. S. Geol. Survey Oil and Gas Inv. Prelim. Map 104.

Potrero formation
Lower Cretaceous: Sonora, Mexico.
R. E. King, 1939, Geol. Soc. America Bull., v. 50, no. 11, p. 1660–1661.

Potterchitto sand member (of Cook Mountain formation)
Eocene (Claiborne group): Mississippi.
E. P. Thomas, 1942, Miss. State Geol. Survey Bull. 48, p. 53–57.

Pouce Coupe sandstone (in Smoky River shale)
Upper Cretaceous: Alberta and British Columbia, Canada.
P. S. Warren and C. R. Stelck, 1940, Royal Soc. Canada Trans., ser. 3, v. 34, sec. 4, p. 144.

Poulsen Cliff shale
Lower Ordovician (Canadian): North Greenland.
J. C. Troelsen, 1950, Meddel, om Grønland, bind 149, nr. 7, p. 48–50.

Pounds formation, sandstone, or cyclothem
Pennsylvanian: Illinois.
J. M. Weller, 1940, Ill. State Geol. Survey Rept. Inv. 71, p. 38–39.

Powder Horn diorite
Devonian(?): Newfoundland, Canada.
E. R. Rose, 1948, Newfoundland Geol. Survey Bull. 32, pt. 2, p. 46.

Powder House flow (in Yellowknife group)
Precambrian: Northwest Territories (Mackenzie), Canada.
C. E. G. Brown and A. S. Dadson, 1953, Canadian Inst. Mining and Metallurgy Trans., v. 56, p. 70–71.

Powell granite
Precambrian: Quebec, Canada.
H. C. Cooke, W. F. James, and J. B. Mawdsley, 1931, Canada Geol. Survey Mem. 166, p. 128.

Power Glen formation
Lower Silurian (Alexandrian): Ontario, Canada.
T. E. Bolton, 1953, Canada Geol. Survey Paper 53–23, p. 4–5.

Prairie evaporite
Middle Devonian: Subsurface in North Dakota, and Manitoba and Saskatchewan, Canada.
A. D. Baillie, 1953, Am. Assoc. Petroleum Geologists Bull., v. 37, no. 2, p. 444, 445, 446.

Prairie formation
Pleistocene: Louisiana.
H. N. Fisk, 1938, La. Dept. Conserv. Geol. Bull. 10, p. 163–166.

Prairie Creek limestone lentil (in Gueda Springs shale member of Wellington formation)
Permian: Kansas.
W. A. Ver Wiebe: 1937, Wichita Municipal Univ. Bull., v. 12, no. 5, p. 13.

Prairie Divide glacial stage
Pleistocene (pre-Wisconsin): Colorado.
Kirk Bryan and L. L. Ray, 1940, Smithsonian Misc. Colls., v. 99, no. 2, p. 28–29.

Prairie Grove member (of Hale formation)
Pennsylvanian: Arkansas.
L. G. Henbest, 1953, Am. Assoc. Petroleum Geologosts Bull., v. 37, no. 8, p. 1940–1942.

Prairie Hollow member (of Prairie Mountain formation)
Mississippian: Oklahoma.
1954, Ardmore Geol. Soc. [Guidebook] Field Trip October, 1954, chart facing p. 10.

Prairie Mountain formation
Pennsylvanian (Bendian): Oklahoma.
B. H. Harlton, 1938, Am. Assoc. Petroleum Geologists Bull., v. 22, no. 7, p. 854, 880–884.

Preble formation
Middle or Upper Cambrian: Nevada.
H. G. Ferguson, S. W. Muller, and R. J. Roberts, 1951, Geology of the Winnemucca quadrangle, Nevada: U. S. Geol. Survey Geol. Quadrangle Map [GQ 11].

Preble formation
Precambrian (Proterozoic): Northwest Territories (Mackenzie), Canada.
C. H. Stockwell, 1936, Canada Geol. Survey Map 377A.

Preissac granite
Precambrian: Quebec, Canada.
G. W. H. Norman, 1945, Econ. Geology, v. 40, no. 1, p. 4.

Preissac syenites
Precambrian: Quebec, Canada.
H. C. Cooke, W. F. James, and J. B. Mawdsley, 1931, Canada Geol. Survey Mem. 166, p. 117.

Prescott series
Cambrian and Ordovician: Ontario, Canada.
A. W. Grabau, 1936, Paleozoic formations in the light of the pulsation theory, v. 2, Cambrovician pulsation, pt. 1, Caledonian and St. Lawrence geosynclines: Peiping, China, University Press, Natl. Univ. Peking, p. 409, 424, 550, 551.

Prettymarsh diorite
Devonian: Maine.
G. H. Chadwick, 1942, (abs.) Geol. Soc. America Bull., v. 53, no. 12, pt. 2, p. 1796–1797.

Pretty Meadow glacial stage
Pleistocene (Illinoian?): Colorado.
R. L. Ives, 1953, Geog. Review, v. 43, no. 2, p. 235–237, 249.

Pretty Run sandstone facies (of Logan formation)
Mississippian: Ohio.
F. T. Holden, 1941, Ill. Acad. Sci. Trans., v. 34, no. 2, p. 172.

Prewitt sandstone member (of Morrison formation)
Jurassic: New Mexico.
C. T. Smith, 1951, *in* N. Mex. Geol. Soc. Guidebook 2d Field Conf., p. 13, 38; 1954, N. Mex. Bur. Mines Min. Res. Bull. 31, p. 16–17.

Price conglomerate
Devonian: Quebec, Canada.
T. H. Clark, 1942, Royal Soc. Canada Trans., ser. 3, v. 36, sec. 4, p. 15.

Prickly Pear member (of Spokane formation)
Precambrian (Belt): Montana.
C. L. Fenton and M. A. Fenton, 1937, Geol. Soc. America Bull., v. 48, no. 12, p. 1898.

Prida formation
Lower(?) and Middle Triassic: Nevada.
S. W. Muller, H. G. Ferguson and R. J. Roberts, 1951, Geology of the Mount Tobin quadrangle, Nevada: U. S. Geol. Survey Geol. Quadrangle Map [GQ 7].

Priest granite
Precambrian: New Mexico.
J. T. Stark and E. C. Dapples, 1946, Geol. Soc. America Bull., v. 57, no. 12, pt. 1, p. 1138–1139.

Priest Canyon member (of Fremont formation)
Upper Ordovician (Richmond): Colorado.
W. C. Sweet, 1954, Am. Assoc. Petroleum Geologists Bull., v. 38, no. 2, p. 295–296, 302.

Prince Creek formation
Upper Cretaceous: Alaska.
George Gryc, W. W. Patton, Jr., and T. G. Payne, 1951, Washington Acad. Sci. Jour., v. 41, no. 5, p. 166–167.

Princeton group
Eocene or Oligocene: British Columbia, Canada.
H. M. A. Rice, 1945, Canada Geol. Survey Paper (Prelim. Map) 45–5.

Prinsen af Wales Bjaerge lavas
Eocene(?): Northeast Greenland.
L. R. Wager, 1947, Meddel. om Grønland, bind 134, nr. 5, p. 20, 21, 46, pl. 6.

Proaño group
Middle Cretaceous or older: Zacatecas, Mexico.
J. B. Stone, 1941, (abs.) Geol. Soc. America Bull., v. 52, no. 12, pt. 2, p. 1956–1957.

Profilfjeldet shales
Silurian(?) (post-Niagaran?): North Greenland.
Erdhart Frankl, 1954, Meddel. om Grønland, bind 116, nr. 2, p. 27, 56, 79, pl. 1.

Prosperous granite
See Prosperous Lake granite.

Prosperous Lake granite
Precambrian: Northwest Territories (Mackenzie), Canada.
A. W. Jolliffe, 1942, Canada Geol. Survey Map 709A.

Proveedora formation
Lower Cambrian: Sonora, Mexico.
G. A. Cooper and A. R. V. Arellano, 1952, Smithsonian Misc. Coll., v. 119, no. 1, p. 4.

Providence shales

Upper Cretaceous (Campanian) : Jamaica, British West Indies.

C. T. Trechmann, 1927, Geol. Mag., v. 64, no. 1, p. 31, 33.
L. J. Chubb, 1955, Geol. Mag., v. 92, no. 3, p. 186.

Providence Island limestone

Lower Ordovician (upper Canadian) : Vermont.

E. O. Ulrich *in* E. O. Ulrich and G. A. Cooper, 1938, Geol. Soc. America Special Paper 13, p. 26, pl. 58 (column 27).

Providence Mountains limestone

Pennsylvanian : California.

J. C. Hazzard, 1938, (abs.) Geol. Soc. America Proc. 1937, p. 240.

Provincial limestones (in Tuff formation)

Upper Cretaceous (Cenomanian-Turonian) : Cuba.

A. A. Thiadens, 1937, Geog. Geol. Meded. (Utrecht Univ.) Physiog-Geol. Reeks, no. 12, p. 11–12, 17–18.

Provo formation

Pleistocene and Recent: Utah.

K. C. Bullock, 1951, Utah Geol. Mineralog. Survey Bull. 41, p. 21.

Prudencia sandstone

Miocene, lower: Tabasco, Mexico.

J. B. Gibson, 1936, Soc. Geol. Mexicana Bol., tomo 9, no. 5, correlation chart.

Pruett formation

Tertiary: Texas.

S. S. Goldich and M. A. Elms, 1946, (abs.) Geol. Soc. America Bull., v. 57, no. 12, pt. 2, p. 1197 ; 1949, v. 60, no. 7, p. 1145–1151.

Pucro sandstone

Miocene, middle: Panama.

Karl Sapper, 1937, Mittelamerika, Handbuch der regionalen Geologie: Heidelberg, Band 8, Abt. 4a, Heft 29, p. 132, 134 (correlation chart).

Pueblan series

Cretaceous (Mid-Cretacic) : New Mexico.

Charles Keyes, 1936, Pan-Am. Geologist, v. 66, no. 2, p. 119 (chart) ; 1940, v. 74, no. 3, p. 213.

Puente de Piedra conglomerate

Eocene, middle and upper: Tabasco and Chiapas, Mexico.

G. P. Salas and Ernesto Lopez Ramos, 1951, Asociación Mexicana Geólogos Petroleros Bol., v. 3, nos. 1–2, p. 25–26.

Puercan age

Paleocene: North America.

H. E. Wood, 2d, and others, 1941, Geol. Soc. America Bull., v. 52, no. 1, p. 8, pl. 1.

Puerto Blanco formation

Lower Cambrian: Senora, Mexico.

G. A. Cooper and A. R. V. Arellano, 1952, Smithsonian Misc. Coll., v. 119, no. 1, p. 4.

Puerto Carballo arenaceous limestone series

Eocene(?) : Costa Rica.

D. F. MacDonald and others, 1919, [Costa Rica] La Gaceta, Diario Oficial, año 41, no. 138, p. 352 ; no. 140, p. 357.
B. N. Webber, 1942, Am. Inst. Mining and Metall. Engineers Tech. Pub. 1445, p. 3.

Pullen formation

Miocene, upper, to Pliocene, lower(?) : California.

B. A. Ogle, 1953, Calif. Dept. Nat. Res. Div. Mines Bull. 164, p. 13 (fig. 3), 26–28, pl. 1.

Pulpit conglomerate division (of Almy conglomerate)

Paleocene: Utah.

A. J. Eardley, 1944, Geol. Soc. America Bull., v. 55, no. 7, p. 842.

Pumpernickel formation

Pennsylvanian(?) : Nevada.

S. W. Muller, H. G. Ferguson, and R. J. Roberts, 1951, Geology of the Mount Tobin quadrangle, Nevada : U. S. Geol. Survey Geol. Quadrangle Map [GQ 7].

Pumpkin Valley shale

Middle Cambrian: Tennessee.

Josiah Bridge, 1945, Geologic map and structure sections of the Mascot–Jefferson City zinc mining district, Tennessee (1 : 31,680) : Tenn. State Dept. Conserv., Div. Geology.

Puna volcanic series

Pleistocene, upper(?) and Recent: Hawaiian Islands (Hawaii).

H. T. Stearns and G. A. Macdonald, 1946, Hawaii Div. Hydrography Bull. 9, p. 103–110.

Punchbowl formation

Miocene, upper: California.

L. F. Noble, 1953, Geology of the Pearland quadrangle, California : U. S. Geol. Survey Geol. Quadrangle Map [GQ 24].

Punta Carballo arenaceous limestone series

See Puerto Carballo arenaceous limestone series.

Punta Gorda [formation]

Miocene: Istmo de Tehuantepec, Mexico.

Ramiro Robles Ramos, 1942, Irrigación en Mexico, v. 23, no. 3, p. 45 (correlation chart).

Purisima Nueva formation

Oligocene(?) : Baja California, Mexico.

Arnold Heim, 1921, Zeitschr. für Vulkanologie, Band 6, Heft 1, tafel 4.

Purple Conglomerate group

Upper Cretaceous: Jamaica, British West Indies.

J. G. Sawkins, 1869, Reports on the geology of Jamaica : [Great Britain] Geol. Survey Mem., p. 103–104, 111–112.

C. A. Matley, 1929, Geol. Soc. London Quart. Jour., v. 85, pt. 4, p. 449, 450, 452 (fig. 2).

Pushmataha series

Pennsylvanian (Bendian) : Oklahoma.

B. H. Harlton, 1938, Am. Assoc. Petroleum Geologists Bull., v. 22, no. 7, p. 854, 855–856.

Putnam Highland formation

Ordovician: Northwest Territories (Baffin Island), Canada.

A. K. Miller and others, 1954, Geol. Soc. America Mem. 62, p. 14.

Putnam Peak basalt

Pliocene: California.

C. E. Weaver, 1949, Geol. Soc. America Mem. 35, p. 110 (table 24), 130–131.

Puyé gravel
Quaternary: New Mexico.
H. T. U. Smith, 1937, (abs.) Geol. Soc. America Proc. 1936, p. 103; 1938, Jour. Geology, v. 46, no. 7, p. 937, 959.

P. W. A. Quarry limestone member (of Drum formation)
Pennsylvanian (Missouri series): Nebraska.
G. E. Condra, 1949, Nebr. Geol. Survey Bull. 16, p. 37.

Pyramid Rock basalt
Quaternary: Hawaiian Islands (Oahu).
H. T. Stearns, 1940, Hawaii Div. Hydrography Bull. 5, p. 50–51.

Quadeville metagabbro
Precambrian: Ontario, Canada.
D. F. Hewitt, 1954, Ontario Dept. Mines Ann. Rept., v. 62, pt. 5, p. 16.

Quadra group
Pleistocene: British Columbia, Canada.
J. E. Armstrong and W. C. Brown, 1953, Canada Geol. Survey Water Supply Paper 322, p. 48, map.

Quajote member (of Lowell formation)
Lower Cretaceous: Arizona.
A. A. Stoyanow, 1949, Geol. Soc. America Mem. 38, p. 9–10, 16–17.

Qualicum formation
Upper Cretaceous: British Columbia, Canada.
J. L. Usher, 1952, Canada Geol. Survey Bull. 21, p. 22.

Qu'Appelle group
Devonian: Subsurface in Manitoba and Saskatchewan, Canada, Montana, and North Dakota.
A. D. Baillie, 1953, Manitoba Dept. Mines and Nat. Res. Mines Br. Pub. 52–5, p. 34, 35.

Quaré limestone (of Hollis Reservoir formation)
Upper Jurassic: Trinidad, British West Indies.
R. A. Liddle, 1946, The geology of Venezuela and Trinidad, 2d ed.: Ithaca, N. Y., Paleont. Research Inst., p. 701.

Quarry conglomerate
Miocene and Pliocene: California.
G. J. Bellemin, 1940, Am. Assoc. Petroleum Geologists Bull., v. 24, no. 4, p. 652 (fig. 2), 653, 656–657.

Quarry Island beds (of Romaine formation)
Ordovician (Beekmantown): Quebec, Canada.
A. W. Grabau, 1936, Paleozoic formations in the light of the pulsation theory, v. 2, Cambrovician pulsation, pt. 1, Caledonian and St. Lawrence geosynclines: Peiping, China, University Press, Natl. Univ. Peking, p. 522.

Quatal red clay member (of Santa Margarita formation)
Miocene, upper: California.
W. E. Ver Planck, 1952, Calif. Dept. Nat. Res., Div. Mines Bull. 163, p. 35–37, pl. 33.

Queantoweap sandstone
Lower Permian: Arizona.
A. H. McNair, 1951, Am. Assoc. Petroleum Geologists Bull., v. 35, no. 3, p. 525–526.

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Quebrancha limestone member (of Caimito formation)

Oligocene, upper: Panama.

T. F. Thompson, 1944, Geological explorations in the vicinity of Rio Quebrancha for the Panama Cement Company: Panama Canal, Special Eng. Div., p. 17–20.

W. P. Woodring and T. F. Thompson, 1949, Am. Assoc. Petroleum Geologists Bull., v. 33, no. 2, p. 234.

Queets beds

Pleistocene, upper: Washington.

S. L. Glover, 1940, Northwest Science, v. 14, no. 3, p. 69.

Quemado formation

Upper Jurassic: Cuba.

R. H. Palmer, 1945, Jour. Geology, v. 53, no. 1, p. 5 (table 1), 7.

R. W. Imlay, 1952, Geol. Soc. America Bull., v. 63, no. 9, p. 969, Chart 8C.

Quien Sabe volcanics

Miocene, middle(?): California.

N. L. Taliaferro, [1949], Geologic map of the Hollister quadrangle, California (1:62,500): Calif. Dept. Nat. Res., Div. Mines [preprint?] Bull. 143, pl. 1.

C. J. Leith, 1949, Calif. Dept. Nat. Res., Div. Mines Bull. 147, p. 22–24, pl. 1.

Quimbo dolomite (in Joserita member of Lowell formation)

Lower Cretaceous: Arizona.

A. A. Stoyanow, 1949, Geol. Soc. America Mem. 38, p. 11.

Quimbys Mill member (of Platteville formation)

Middle Ordovician: Wisconsin, Iowa, and Illinois.

A. F. Agnew and A. V. Heyl, Jr., 1946, Am. Assoc. Petroleum Geologists Bull., v. 30, no. 9, p. 1585–1587.

Quimper sandstone

Oligocene, lower: Washington.

J. W. Durham, 1942, Jour. Paleontology, v. 16, no. 1, p. 86–87.

Quinam limestone

Oligocene: Trinidad, British West Indies.

Ernst Lehner, 1935 [France] Office national des combustibles liquides Annales, 10e année, no. 4, p. 701 (table).

H. H. Suter, 1951, Colonial Geology and Min. Res., v. 2, no. 3, p. 204 (table 12); no. 4, p. 277 [1952].

Quinn clay

Upper Pennsylvanian (Cisco): Texas.

F. B. Plummer *in* M. G. Cheney, 1948, Abilene Geol. Soc. [Guidebook] Spring Field Trip, June 11–12, p. 7, 12.

F. B. Plummer and H. B. Bradley, 1949, Tex. Univ. Bur. Econ. Geology Pub. 4915, p. 5–17.

Quintero limestone

Tertiary, upper: Tamaulipas, Mexico.

Arnold Heim, 1940, Eclogae Geologicae Helvetiae, v. 33, no. 2, p. 331.

Quinto member (of Moreno group)

Upper Cretaceous: California.

F. M. Anderson, 1943, Calif. Dept. Nat. Res., Div. Mines Bull. 118, pt. 2, p. 185 (fig. 69), 186 [preprint 1941].

Quinville granite

Precambrian: Quebec, Canada.

M. E. Wilson, 1920, Canada Geol. Survey Pub. (map) 1691.

Pierre Mauffette, 1949, Quebec Dept. Mines Prelim. Rept. 223, p. 12.

Quita Coraza formation
Oligocene, upper: Dominican Republic.
W. M. Small, 1948, Seismol. Soc. America Bull., v. 38, no. 1, p. 26.

Quitman quartz monzonite
Oligocene(?): Texas.
R. M. Huffington, 1943, Geol. Soc. America Bull., v. 54, no. 7, p. 1034–1036.

Rabbit Point sandstone
Lower Cambrian: Northwest Territories (Devon Island), Canada.
V. E. Kurtz, A. H. McNair, and D. B. Wales, 1952, Am. Jour. Sci., v. 250, no. 9, p. 649–650.

Rabens Branch bed (in Parkers formation)
Upper Pennsylvanian: Indiana.
C. A. Malott, 1947, Ind. Acad. Sci. Proc., v. 57, p. 132 [1948].

Raber bed
Silurian: Michigan.
W. A. Kelly, 1954, Mich. Geol. Soc. [Guidebook 18th] Ann. Field Trip, p. 21.

Racetrack dolomite
Middle and Upper Cambrian: California.
J. F. McAllister, 1952, Calif. Dept. Nat. Res., Div. Mines Special Rept. 25, p. 8–9.

Rader limestone member (of Cherry Canyon formation)
Permian: Texas and New Mexico.
P. B. King *in* A. K. Miller and W. M. Furnish, 1940, Geol. Soc. America Special Paper 26, p. 9.
P. B. King, 1942, Am. Assoc. Petroleum Geologists Bull., v. 26, no. 4, p. 583, pl. 2.

Ragg quartzite
Precambrian (Keweenawic): Iowa.
Charles Keyes, 1941, Pan-Am. Geologist, v. 75, no. 2, p. 99, 107.

Ragged Valley shale member (of Arroyo Hondo formation)
Eocene: California.
H. E. Vokes, 1939, N. Y. Acad. Sci. Annals, v. 38, p. 27–28.

Raglan metagabbro
Precambrian: Ontario, Canada.
D. F. Hewitt, 1954, Ontario Dept. Mines Ann. Rept., v. 62, pt. 5, p. 15–16.

Railway Cut marl (in Chaudiere shale)
Upper Cretaceous: Trinidad, British West Indies.
H. H. Renz, 1942, 8th Am. Sci. Cong. Proc., v. 4, p. 529.
J. A. Cushman and H. H. Renz, 1947, Cushman Lab. Foram. Reesarch Contr., v. 23, pt. 2, p. 31–32.

Rainbow Flat group
Age unknown: California.
K. J. Hsu, 1955, Calif. Univ. Dept. Geol. Sci. Bull., v. 30, no. 4, p. 294, map 1.

Rainvalley formation
Permian: Arizona.
D. L. Bryant, 1955, Dissert. Abs., v. 15, no. 7, p. 1224.

Raleigh graphite
Precambrian: North Carolina.
J. W. Harrington, 1947, Jour. Geology, v. 55, no. 6, p. 516–521.

Ralph Lake conglomerate
Precambrian: Manitoba, Canada.
J. D. Allan, 1946, Manitoba Dept. Mines and Nat. Res. Mines Br., Notes to accompany Prelim. Map 46–2, p. 2.

Ralston formation
Jurassic: Colorado.
L. W. LeRoy, 1946, Colo. School Mines Quart., v. 41, no. 2, p. 46–55.

Ramdat marl (of Navet formation)
Eocene, lower: Trinidad, British West Indies.
J. A. Cushman and H. H. Renz, 1948, Cushman Lab. Foram. Research Special Pub. 24, p. 2.

Rampart Cave member (of Muav formation)
Lower and/or Middle Cambrian: Arizona.
E. D. McKee, 1945, Carnegie Inst. Washington Pub. 563, p. 14, 29, 84–87.

Rancheria formation
Mississippian (Meramec): New Mexico.
L. R. Laudon and A. L. Bowsher, 1949, Geol. Soc. America Bull., v. 60, no. 1, p. 17–19, fig. 4.

Rancholabrean age
Pleistocene, late: North America.
D. E. Savage, 1951, Calif. Univ. Pubs. Dept. Geol. Sci. Bull., v. 28, no. 10, p. 289.

Rancho Quemado dacite
Pliocene(?): Honduras.
R. H. Carpenter, 1954, Geol. Soc. America Bull., v. 65, no. 1, p. 30, pl. 1 (geol. map).

Randbøl conglomerate
Devonian or younger: Northeast Greenland.
Wolf Maync, 1949, Meddel. om Grønland, bind 114, nr. 2, p. 21–24.

Rapid formation
Tertiary: British Columbia, Canada.
H. Gabrielse, 1955, Canada Geol. Survey Paper (Prelim. Map) 54–10.

Rapid City lens (in Newcastle formation)
Upper Cretaceous: South Dakota.
R. M. Grace, 1952, Wyo. Geol. Survey Bull. 44, p. 14, 17.

Raspberry formation
Upper Triassic: Nevada.
H. G. Ferguson, S. W. Muller, and R. J. Roberts, 1951, Geology of the Winnemucca quadrangle, Nevada: U. S. Geol. Survey Geol. Quadrangle Map [GQ 11].

Ratcliffe Brook formation
Lower Cambrian (Etcheminian): New Brunswick, Canada.
A. O. Hayes and B. F. Howell, 1937, Geol. Soc. America Special Paper 5, p. 58–63.

Rathbun limestone member (of Denmark formation)
Middle Ordovician (Mohawkian): New York.
G. M. Kay, 1943, Am. Jour. Sci., v. 241, no. 10, p. 598–600.

Raton basalts
Quaternary: New Mexico.
Helen Stobbe, 1948, (abs.) Geol. Soc. America Bull., v. 59, no. 12, pt. 2, p. 1354–1355.
R. F. Collins, 1949, Geol. Soc. America Bull., v. 60, no. 6, p. 1027–1028, pl. 1.

Rattling Brook group
Precambrian(?): Newfoundland, Canada.
K. D. Watson, 1947, Newfoundland Geol. Survey Bull. 21, p. 4–5.

Raven member (of Montoya dolomite)
Upper Ordovician: New Mexico.
L. P. Entwistle, 1944, N. Mex. State Bur. Mines Min. Res. Bull. 19, p. 18.

Ravenna shale facies (of Portwood formation)
Middle Devonian; Kentucky.
Guy Campbell, 1946, Geol. Soc. America Bull., v. 57, no. 9, p. 864, 865.

Ravnefjeld formation
Middle Devonian: Northeast Greenland.
Arne Noe-Nygaard, 1934, Meddel. om Grønland, bind 103, nr. 1, p. 16–25.

Rawlins ash bed (in Ash Hollow member of Ogallala formation)
Pliocene: Kansas and Nebraska.
Ada Swineford, J. C. Frye, and A. B. Leonard, 1955, Jour. Sed. Petrology, v. 25, no. 4, p. 253, fig. 1.

Rawlinsian series
Cretaceous (Cretacic): Kansas.
[C. R.] Keyes, 1941, Pan-Am. Geologist, v. 76, no. 4, p. 304, 313.

Rawls basalt
Miocene(?): Texas.
S. S. Goldich and C. L. Seward, 1948, W. Tex. Geol. Soc. [Guidebook] Fall Field Trip, p. 22.

Rayville formation
Pennsylvanian (Lampasas): Texas.
M. G. Cheney, 1947, Jour. Geology, v. 55, no. 3, p. 210–211.

Razorback formation
Tertiary, upper: New Mexico.
F. J. Kuellmer and others, 1953, *in* N. Mex. Geol. Soc. Guidebook 4th Field Conf., p. 50 (map).
H. L. Jicha, Jr., 1954, N. Mex. State Bur. Mines Min. Res. Bull. 37, p. 39, 47–48.

Read Bay formation
Ordovician and Silurian: Northwest Territories (Cornwallis Island), Canada.
R. Thorsteinsson and Y. O. Fortier, 1954, Canada Geol. Survey Paper 53–24, p. 9–12.

Ready Pay member (of Percha shale formation)
Upper Devonian: New Mexico and Texas.
F. V. Stevenson, 1944, Dallas Digest Joint Ann. Meeting, p. 95; 1945, Jour. Geology, v. 53, no. 4, p. 241–243.

Reager ash bed (of Ash Hollow member of Ogallala formation)
Pliocene: Kansas.
J. S. Carey and others, 1952, Kans. State Geol. Survey Bull. 96, pt. 1, p. 9–11, 27.

Reamsville ash bed (in Ash Hollow member of Ogallala formation)
Pliocene: Kansas.
Ada Swineford, J. C. Frye, and A. B. Leonard, 1955, Jour. Sed. Petrology, v. 25, no. 4, p. 254–255, fig. 1.

Reclamation group
Pennsylvanian: Wyoming.
G. E. Condra, E. C. Reed, and O. J. Scherer, 1940, Nebr. Geol. Survey Bull. 13, p. 2, 3, 32.

Recreation red beds
Cretaceous: Arizona.
W. H. Brown, 1939, Geol. Soc. America Bull., v. 50, no. 5, p. 715–716.

Red Bluff granite
Precambrian: Texas.
L. A. Nelson, 1940, Am. Assoc. Petroleum Geologists Bull., v. 24, no. 1, p. 160.

Red Branch member (of Woodbine formation)
Upper Cretaceous: Texas.
H. R. Bergquist, 1949, U. S. Geol. Survey Oil and Gas Inv. Prelim. Map 98.

Red Chute quartz diorite
Precambrian: Quebec, Canada.
P. E. Imbault, 1947, Quebec Dept. Mines Prelim. Rept. 207, p. 6–7.

Red Cliff volcanics
Ordovician(?): Newfoundland, Canada.
A. K. Snelgrove, 1931, Canadian Mining and Metall. Bull. 228, p. 486, 487.

Red Cloud sand and gravel
Pleistocene: Nebraska.
C. B. Schultz, E. C. Reed, and A. L. Lugn, 1951, Science, v. 114, no. 2969, p. 548.

Red Desert tongue (of Wasatch formation)
Eocene, lower: Wyoming.
G. N. Pipiringos, 1955, Wyo. Geol. Assoc. Guidebook 10th Ann. Field Conf., p. 100, 101.

Redfield formation
Eocene (Jacksonian): Arkansas.
L. J. Wilbert, Jr., 1953, Ark. Div. Geology Bull. 19, p. 80–87.

Red Hill complex
Carboniferous(?) (White Mountain magma series): New Hampshire.
A. P. Smith and others, 1938, Geologic map and structure sections of the Mt. Chocorua quadrangle, New Hampshire (1:62,500): N. H. Highway Dept.

Red House formation
Pennsylvanian (Magdalena): New Mexico.
V. C. Kelley and Caswell Silver, 1952, N. Mex. Univ. Pubs. in Geology 4, p. 91–92, fig. 2.

Red Mesa member (of Entrada formation)
Upper Jurassic: Utah, Arizona, Colorado, and New Mexico.
W. B. Hoover, 1950, N. Mex. Geol. Soc. Guidebook 1st Field Conf., p. 76, 77, 78.

Red Mountain dacites
Quaternary: New Mexico.
Helen Stobbe, 1948, (abs.) Geol. Soc. America Bull., v. 59, no. 12, pt. 2, p. 1354–1355.
R. F. Collins, 1949, Geol. Soc. America Bull., v. 60, no. 6, p. 1031–1033, pl. 1.

Red Mountain gneiss
Precambrian: Texas.
Frederick Romberg and V. E. Barnes, 1949, Geophysics, v. 14, no. 2, fig. 1 facing p. 154.
V. E. Barnes *in* V. E. Barnes, D. A. Shock, and W. A. Cunningham, 1950, Tex. Univ. Bur. Econ. Geology Pub. 5020, p. 7.

Redonda member (of Chinle formation)
Triassic: New Mexico.
Ernest Dobrovolny and C. H. Summerson *in* Ernest Dobrovolny, C. H. Summerson, and R. L. Bates, 1946, U. S. Geol. Survey Oil and Gas Inv. Prelim. Map 62, sheets 1, 2.

Redondo sandstone
Cretaceous (Early Cretacic): New Mexico.
Charles Keyes, 1940, Pan-Am. Geologist, v. 74, no. 2, p. 105 (chart).

Red Peak member (of Chugwater formation)
Triassic: Wyoming.
J. D. Love, 1939, Geol. Soc. America Special Paper 20, p. 44.

Red Pine shale
Precambrian: Utah.
N. C. Williams, 1953, Am. Assoc. Petroleum Geologists Bull., v. 37, no. 12, p. 2738.

Red Rock limestone
Triassic (Karnic?): Nevada.
F. N. Johnston, 1941, Jour. Paleontology, v. 15, no. 5, p. 448.

Red Rock rhyolite
Precambrian: Arizona.
E. D. Wilson, 1937, (abs.) Geol. Soc. America Proc. 1936, p. 112; 1939, Geol. Soc. America Bull., v. 50, no. 7, p. 1118, 1120–1121.

Red Rose formation
Upper Jurassic and Lower Cretaceous: British Columbia, Canada.
R. E. Sommers, 1955, British Columbia Bur. Mines Ann. Rept. 1954, p. A89–A90.

Red Shale Butte complex
Pleistocene: California.
C. A. Anderson, 1941, Calif. Univ. Dept. Geol. Sci. Bull., v. 25, no. 7, p. 364–365.

Red Tanks member (of Madera limestone)
Pennsylvanian: New Mexico.
V. C. Kelley and G. H. Wood, 1946, U. S. Geol. Survey Oil and Gas Inv. Prelim. Map 47.

Red Wash formation
Lower Triassic: Utah.
J. S. Williams, 1945, Am. Jour. Sci., v. 243, no. 9, p. 477, 478.

Redwater shale member (of Sundance formation)
Upper Jurassic: South Dakota and Wyoming.
R. W. Imlay, 1947, Am. Assoc. Petroleum Geologists Bull., v. 31, no. 2, p. 259–264.

Red Wine anorthosite
Precambrian: Newfoundland (Labrador), Canada.
D. M. Baird, 1953, Newfoundland Geol. Survey Inf. Circ. 4 (revised), p. 137.

Reed granite
Precambrian: Manitoba, Canada.
J. M. Harrison, 1949, Canada Geol. Survey Mem. 250, p. 19.

Reed Canyon silt member (of Tejon formation)
Eocene: California.
J. G. Marks, 1941, (abs.) Geol. Soc. America Bull., v. 52, no. 12, pt. 2, p. 1922.

Reeding sandstone
Permian: Oklahoma.
Henry Schweer *in* O. E. Brown, 1937, Am. Assoc. Petroleum Geologists Bull., v. 21, no. 12, p. 1553 (fig. 9).

Reeds Creek andesite
Eocene, middle, to Oligocene, lower: California.
B. L. Clark and C. A. Anderson, 1938, Geol. Soc. America Bull., v. 49, no. 6, p. 935 (fig. 2), 940–941.

Reel limestone
Pennsylvanian: Illinois.
G. H. Cady and others, 1955, Ill. Geol. Survey Rept. Inv. 183, p. 8.

Reeves limestone member (of Reeves McDonald formation)
Precambrian and Cambrian: British Columbia, Canada.
W. H. White, 1950, British Columbia Bur. Mines Ann. Rept. 1949, p. A–172.

Reeves McDonald formation
Precambrian and Cambrian: British Columbia, Canada.
W. H. White, 1950, British Columbia Bur. Mines Ann. Rept. 1949, p. A–171—A–172.

Reforma hypersthene andesite
Cretaceous(?): Honduras.
R. H. Carpenter, 1954, Geol. Soc. America Bull., v. 65, no. 1, p. 29, pl. 1 (geol. map).

Remedios limestone
Paleocene (Midwayan): Cuba.
J. A. Cushman and P. J. Bermudez, 1948, Cushman Lab. Foram. Research Contrib., v. 24, pt. 3, p. 68.
P. J. Bermudez, 1950, Soc. Cubana Historia Nat. Mem., v. 19, no. 3, p. 224.

Rencontre formation
Devonian or Mississippian: Newfoundland, Canada.
W. H. Twenhofel, 1947, Am. Jour. Sci., v. 245, no. 2, p. 91–93.

Reno member (of Franconia formation)
Upper Cambrian: Minnesota and Wisconsin.
R. R. Berg, 1951, Minn. Geologist, v. 8, no. 4, p. 2.

Rensselaer sandstone
Precambrian or Cambrian (Eo-Cambrian): North Greenland, and Northwest Territories (Ellesmere Island), Canada.
J. C. Troelsen, 1950, Meddel. om Grønland, bind 149, nr. 7, p. 35.

Repettian stage
Pliocene: California.
Manley Natland, 1953, Pacific Petroleum Geologist, v. 7, no. 2, p. 2.

Represo beds
Mississippian (Osagean-Meramecian): Sonora, Mexico.
J. M. Weller and others, 1948, Geol. Soc. America Bull., v. 59, no. 2, p. 136–137. Chart 5, column 36.

Resendez shale member (of Fayette formation)
Eocene (Jackson): Texas.
J. M. Patterson, 1942, Am. Assoc. Petroleum Geologists Bull., v. 26, no. 2, p. 259 (fig. 2), 267–268.

Resolution dolomite member (of Minturn formation)
Pennsylvanian: Colorado.
Ogden Tweto, 1949, Colo. Sci. Soc. Proc., v. 15, no. 4, p. 152, 199–201.

Reston formation
Middle Jurassic: Manitoba, Canada and North Dakota.
D. F. Stott, 1955, Manitoba Dept. Mines and Nat. Res. Pub. 54–2, p. 18–20, 35–37, 44–45.

Rest Spring shale
Pennsylvanian (?): California.
J. F. McAllister, 1952, Calif. Dept. Nat. Res., Div. Mines Special Rept. 25, p. 25–26.

Retrench marls
Oligocene: Trinidad, British West Indies.
V. C. Illing, 1928, Geol. Soc. London Quart. Jour., v. 84, p. 20–21.
R. M. Stainforth, 1948, Am. Assoc. Petroleum Geologists Bull., v. 32, no. 7, p. 1293 (footnote).

Revuelto shales
Mesozoic (Early Cretacic): New Mexico.
Charles Keyes, 1940, Pan-Am. Geologist, v. 74, no. 4, p. 306–307.

Rexroad formation
Pliocene, upper: Kansas and Oklahoma.
H. T. U. Smith, 1940, Kans. State Geol. Survey Bull. 34, p. 95–99.

Rhyolite Canyon formation
Cenozoic: Arizona.
H. E. Enlows, 1951, Tulsa Geol. Soc. Digest, v. 19, p. 105–107; 1955, Geol. Soc. America Bull., v. 66, no. 10, p. 1217–1242.

Rib Hill formation
Pennsylvanian: Nevada.
E. N. Pennebaker, 1932, Mining and Metallurgy, v. 13, no. 304, p. 164.

Richfield member (of Lucas formation)
Middle Devonian: Michigan (subsurface).
K. K. Landes, 1951, U. S. Geol. Survey Circ. 133, p. 7.

Richfield Quarry shale member (of Drum formation)
Pennsylvanian (Missouri series): Nebraska.
G. E. Condra, 1949, Nebr. Geol. Survey Bull. 16, p. 37.

Rich Fountain formation
Lower Ordovician: Missouri and Arkansas.
J. S. Cullison, 1944, Mo. Univ. School Mines and Metallurgy Bull., Tech. Ser., v. 15, no. 2, p. 17–24.

Richibucto formation
Pennsylvanian: New Brunswick, Nova Scotia, and Prince Edward Island, Canada.
J. F. Caley and others, 1951, Am. Assoc. Petroleum Geologists Bull., v. 35, no. 2, p. 478.
W. C. Gussow, 1953, Am. Assoc. Petroleum Geologists Bull., v. 37, no. 7, p. 1757–1758.

Richmond Gulf group
Precambrian: Quebec, Canada.
M. E. Wilson, 1939, Geologie der Erde, North America, v. 1, p. 276.

Ricker limestone member (of Grindstone Creek formation)
See Ricker Station limestone member (of Grindstone Creek formation).

Ricker Station limestone member (of Grindstone Creek formation)
Pennsylvanian: Texas.
M. G. Cheney, 1940, Am. Assoc. Petroleum Geologists Bull., v. 24, no. 1, p. 66 (fig. 1).
Gayle Scott and others, 1941, *in* W. Tex. Geol. Soc. [Guidebook] Spring Field Trip, p. 24.

Ridge formation
See Ridge Route formation.

Ridge Basin group
Miocene, upper, to Pliocene: California.
D. I. Axelrod, 1950, Carnegie Inst. Washington Pub. 590, p. 161, 168.

Ridge Route formation
Pliocene(?): California.
Thomas Clements, 1937, Am. Assoc. Petroleum Geologists Bull., v. 21, p. 217 (fig. 1), 218.

Ridley Park granodiorite
Age unknown: Pennsylvania.
A. W. Postel, 1940, (abs.) Geol. Soc. America Bull., v. 51, no. 12, pt. 2, p. 2004–2005; 1941, Acad. Nat. Sci. Philadelphia Proc., v. 92, p. 134.

Rierdon formation
Upper Jurassic: Montana.
W. A. Cobban, 1945, Am. Assoc. Petroleum Geologists Bull., v. 29, no. 9, p. 1277–1281.

Rigaud passage beds
Cambrian and Ordovician: Quebec, Canada.
A. W. Grabau, 1936, Paleozoic formations in the light of the pulsation theory, v. 2, Cambrovician pulsation, pt. 1, Caledonian and St. Lawrence geosynclines: Peiping, China, University Press, Natl. Univ. Peking, p. 416, 424, 425, 550, 551.

Rigi series
Upper Jurassic (Portlandian): Northeast Greenland.
Wolf Mayne, 1947, Meddel. om Grønland, bind 132, nr. 2, p. 73–77, 119, 133–137, pl. 6.

Riley formation
Upper Cambrian: Texas.
P. E. Cloud, Jr., V. E. Barnes, and Josiah Bridge, 1946, Tex. Univ. Bur. Econ. Geology Pub. 4301, p. 154–155 [1945].

Riley Creek glaciation
Pleistocene (Wisconsin): Alaska.
Clyde Wahrhaftig *in* T. L. Péwé and others, 1953, U. S. Geol. Survey Circ. 289, p. 8, 13 (table 1).

Rillito andesite
Tertiary: Arizona.
W. H. Brown, 1939, Geol. Soc. America Bull., v. 50, no. 5, p. 736.

Rim Rock sandstone
Upper Cretaceous: Utah.
P. T. Walton, 1944, Geol. Soc. America Bull., v. 55, no. 1, p. 99, 111–114.

Rincon formation
Upper Cretaceous or Tertiary, lower: Bonaire, Netherlands West Indies.
P. J. Pijpers, 1931, Leidsche Geol. Meded., Deel 5, p. 705.

Rinconada schist member (of Ortega formation)

Precambrian: New Mexico.

Evan Just, 1937, N. Mex. School Mines Bull. 13, p. 22.
Arthur Montgomery, 1953, N. Mex. State Bur. Mines Min. Res. Bull. 30, p. 12–19.

Ringbone shale

Lower Cretaceous (Bisbee group): New Mexico.

S. G. Lasky, 1938, Am. Assoc. Petroleum Geologists Bull., v. 22, no. 5, p. 531–532, fig. 2.

Rio Claro boulder bed

Miocene, lower: Trinidad, British West Indies.

H. G. Kugler and others [1939], Geological conference in Trinidad; notes on the excursions: Petroleum Assoc. Trinidad, p. 8.
H. H. Suter, 1951, Colonial Geology and Min. Res., v. 2, no. 3, p. 208 [1952].

Rio Dell formation

Pliocene, middle to upper: California.

B. A. Ogle, 1953, Calif. Dept. Nat. Res., Div. Mines Bull. 164, p. 13 (fig. 3), 31–33, pl. 1.

Rio Duque shales

Oligocene, upper, or Miocene, lower: Panama.

T. F. Thompson, 1944, Geological explorations in the vicinity of Rio Quebrancha for the Panama Cement Company: Panama Canal, Special Eng. Div., p. 21–23.

Río Guatemala group

Oligocene: Puerto Rico.

A. D. Zapp, H. R. Bergquist, and C. R. Thomas, 1948, U. S. Geol. Survey Oil and Gas Inv., Prelim. Map 85, sheets 1, 2.

Rio Santa Maria granite

Age not stated: Panama.

Karl Sapper, 1937, Mittelamerika, Handbuch der regionalen Geologie: Heidelberg, Band 8, Abt. 4a, Heft 29, p. 134.

Rio Seco diabase

Age not stated: Costa Rica.

B. N. Webber, 1942, Am. Inst. Mining and Metall. Enginers Tech. Pub. 1445, p. 2, 3.

Rio Seco formation

Jurassic: Trinidad, British West Indies.

H. G. Kugler, 1953, Vereinigung Schweizer Petroleum Geologen u. Ingenieure Bull., v. 20, no. 59, p. 31.

Rio Torola limestone

Pliocene(?): El Salvador.

S. K. Roy and R. K. Wyant, 1953, Fieldiana Geology, v. 10, no. 16, p. 176–191.

Rison clay member (of White Bluff formation)

Eocene (Jacksonian): Arkansas.

L. J. Wilbert, Jr., 1953, Ark. Div. Geology Bull. 19, p. 70–80.

Rita Blanca deposits

Pleistocene: Texas.

G. L. Evans and G. E. Meade, 1945, Texas Univ. Bur. Econ. Geology Pub. 4401, p. 493.

Ritchie limestone

Upper Cambrian or Lower Ordovician: New York.

D. W. Fisher and G. F. Hanson, 1951, Am. Jour. Sci., v. 249, no. 11, p. 804–806.

River glacial stage
Pleistocene (Iowan) : Colorado.
R. L. Ives, 1937, (abs.) Colo. Univ. Studies, v. 25, no. 1, p. 75; 1938, Geol. Soc. America Bull., v. 49, no. 7, p. 1057–1058.

River Lake granite
Precambrian: Northwest Territories (Mackenzie), Canada.
A. W. Joliffe, 1938, Canada Geol. Survey Paper 38–21, p. 10.

Riverside series
Pennsylvanian: Nova Scotia, Canada.
F. W. Gray and R. H. Gray, 1941, Canadian Inst. Mining and Metallurgy Trans., v. 44, p. 296.

River Styx conglomerate facies (of Cuyahoga formation)
Mississippian: Ohio.
F. T. Holden, 1941, Ill. Acad. Sci. Trans., v. 34, no. 2, p. 172.

Riverton cyclothem or formation
Pennsylvanian (Des Moines) : Kansas.
G. E. Abernathy, 1937, Kans. Geol. Soc. Guidebook 11th Ann. Field Conf., p. 18, 20, 22; 1938 Kans. Acad. Sci. Trans., v. 41, p. 193, 196.

Rivieradal sandstones
Precambrian (Greenlandian) : North Greenland.
Erdhard Frankl, 1954, Meddel. om Grønland, bind 116, nr. 2, p. 40–41, 56, 78, pl. 1.

Rivière Gauche formation
Pliocene: Haiti.
Jacques Butterlin, [1952], Résumé de thèse présentée à la Sorbonne, La géologie de la République d'Haïti et ses rapports avec celle des régions voisines (mimeo.), p. 4; 1954, Inst. Français d'Haïti Mem. 1, p. 67.

Rivière Grise formation
Oligocene to Miocene: Haiti.
Jacques Butterlin, 1950, Rev. Soc. Haïtienne Histoire, Géographie et Géologie, v. 21, no. 76, p. 56; 1954, Inst. Français d'Haïti Mém. 1, p. 63.

Rivoli member (of Dunleith formation)
Middle Ordovician: Illinois.
J. S. Templeton and H. B. Willman, 1952, Tri-State Geol. Soc. Guidebook 16th Ann. Field Conf., p. 24, figs. 3, 12.

Robbers Roost gravel
Quaternary: Arizona.
Donaldson Koons, 1948, Plateau, v. 20, no. 4, p. 54 (fig. 1), 58.

Rob Camp limestone
Middle Ordovician: Virginia.
R. L. Miller and W. P. Brosgé, 1950, U. S. Geol. Survey Oil and Gas Inv. Prelim. Map 104.

Roberts Arm volcanics
Middle Ordovician(?) : Newfoundland, Canada.
G. H. Espenshade, 1937, Newfoundland Geol. Survey Bull. 6, p. 10–14.

Roberts Mountains formation
Silurian: Nevada.
C. W. Merriam, 1940, Geol. Soc. America Special Paper 25, p. 11–12.

Robertson formation
Lower Jurassic (Lias) : Oregon.
R. L. Lupher, 1941, Geol. Soc. America Bull., v. 52, no. 2, p. 227, 238–239.

Roberts Ranch member (of Dagger Flat formation)
Upper Cambrian : Texas.
J. L. Wilson, 1954, Jour. Paleontology, v. 28, no. 3, p. 251, 252.

Robeson conglomerate
Triassic : Pennsylvania.
D. B. McLaughlin, 1939, Mich. Acad. Sci. Arts and Letters Papers. v. 24, pt. 4, p. 60, 73.

Robin Hood formation
Precambrian (Archean) : New Brunswick, Canada.
G. S. Mackenzie, 1951, Canada Geol. Survey Paper (Prelim. Map) 51–15.

Robinson Branch formation or coal cycle
Pennsylvanian (Desmoinesian) : Kansas, Missouri, Oklahoma, Nebraska, and Iowa.
W. V. Searight and others, 1953, Am. Assoc. Petroleum Geologists Bull., v. 37, no. 12, p. 2747–2749.
C. C. Branson, 1954, Okla. Geol. Survey Guidebook 2, p. 5.

Roblar leucogranite
Cretaceous : California.
E. S. Larsen, Jr., 1948, Geol. Soc. America Mem. 29, p. 97–98.

Robson limestone
Ordovician : British Columbia and Alberta, Canada.
C. D. Walcott, 1913, Smithsonian Misc. Coll., v. 57, no. 12, p. 334, 336.

Rockaway conglomerate bed (in Lutie member of Theodosia formation)
Lower Ordovician : Missouri.
J. S. Cullison, 1944, Mo. Univ. School Mines and Metallurgy Bull., Tech. Ser., v. 15, no. 2, p. 27.

Rock Bench Quarry beds (of Polecat Bench formation)
Paleocene : Wyoming.
G. L. Jepsen *in* W. B. Scott, 1937, A history of land mammals in the Western Hemisphere : New York, Macmillan Co., p. 99 ; 1940, Am. Philos. Soc. Proc., v. 83, no. 2, p. 234–236.

Rockcliffe formation
Middle Ordovician (Chazy) : Ontario, Canada.
A. E. Wilson, 1937, Royal Soc. Canada Trans., ser. 3, v. 31, sec. 4, p. 46, 48.

Rock Creek conglomerate member (of Maroon formation)
Permian (?) : Colorado.
C. F. Bassett, 1939, Geol. Soc. America Bull., v. 50, no. 12, pt. 1, p. 1864.

Rock Creek member (of Fernie formation)
Jurassic : British Columbia and Alberta, Canada.
P. S. Warren, 1934, Am. Jour. Sci., ser. 5, v. 27, p. 59.

Rockdale dolomite
Silurian (Niagaran) : Illinois.
T. E. Savage *in* C. K. Swartz and others, 1942, Geol. Soc. America Bull., v. 53, no. 4, p. 536, Chart 3.

Rockdell limestone
Middle Ordovician: Virginia.
B. N. Cooper, 1945, Va. Geol. Survey Bull. 66, p. 17, 137, 208.

Rockledge limestone breccia
Upper Cambrian: Vermont.
Charles Schuchert, 1937, Geol. Soc. America Bull., v. 48, no. 7, p. 1049–1052.

Rock Levee formation
Ordovician: Missouri.
J. G. Grohskopf, 1948, Am. Assoc. Petroleum Geologists Bull., v. 32, no. 3, p. 360–362.

Rockly Bay formation
Miocene, upper, and Pliocene: Tobago, British West Indies.
J. C. Maxwell, 1948, Geol. Soc. America Bull., v. 59, no. 8, p. 842–844.

Rockport Quarry limestone
Middle Devonian: Michigan.
G. A. Cooper and A. S. Warthin, 1941, Washington Acad. Sci. Jour., v. 31, no. 6, p. 260.

Rock Prairie sandstone
Eocene (Jackson): Texas.
A. A. L. Mathews, 1950, Tex. Eng. Expt. Sta. Research Rept. 14, p. 5, geol. map.

Rock Stream flagstone member (of Cashaqua shale)
Upper Devonian: New York.
W. H. Bradley and J. F. Pepper, 1941, U. S. Geol. Survey Bull. 899, p. 12–13.

Rockwood Park granodiorite
Pre-Carboniferous: New Brunswick, Canada.
A. O. Hayes and B. F. Howell, 1937, Geol. Soc. America Special Paper 5, p. 35–36.

Rocky Branch bone bed (in Jeffersonville limestone)
Middle Devonian: Indiana.
J. W. Wells, 1944, Geol. Soc. America Bull., v. 55, no. 3, p. 282.

Rocky Brook formation
Lower Carboniferous: Newfoundland, Canada.
A. O. Hayes, 1949, Newfoundland Geol. Survey Inf. Circ. 6, Map 2.

Rocky Butte volcanics
Pleistocene: Oregon.
R. C. Treasher, 1940, (abs.) Geol. Soc. America Bull., v. 51, no. 12, pt. 2, p. 2034.

Rocky Point beds
Oligocene, upper: Oregon.
F. W. Libbey, W. D. Lowry, and R. S. Mason, 1945, Oreg. Dept. Geology and Mineral Industries Bull. 29, p. 8–9.

Rocky Point conglomerate (in Deese formation)
Pennsylvanian (Des Moines): Oklahoma.
C. W. Tomlinson, 1937, Ardmore Geol. Soc. [Guidebook] Field Trip, March 13, Road log, p. 1, 2, geol. map.
R. C. Moore and others, 1944, Geol. Soc. America Bull., v. 55, no. 6, p. 697, Chart 6 (column 37).

Røde Ø conglomerate
Age unknown: East Greenland.
Edvard Bay, 1895, Meddel. om Grønland, hefte 19, pt. 6, p. 160–162; pt. 9, p. 263–264.

Rodessa formation

Lower Cretaceous (Comanche series): Subsurface in Louisiana, Texas, and Arkansas.

W. B. Weeks, 1938, Am. Assoc. Petroleum Geologists Bull., v. 22, no. 8, p. 970, fig. 4.
G. E. Murray, 1948, La. Dept. Conserv. Geol. Bull. 25, p. 65–66.

Rodetal conglomerate (in Margrethetal series)

Middle Devonian: Northeast Greenland.

Heinrich Butler, 1954, Meddel. om Grønland, bind 116, nr. 7, p. 46, 48, 113.

Rødryggen beds

Lower Cretaceous (upper Valanginian): Northeast Greenland.

Wolf Mayne, 1949, Meddel. om Grønland, bind 133, nr. 3, p. 70–72, 192–195, 281.

Roger Park basaltic breccia

Tertiary: Utah.

Eugene Callaghan, 1939, Am. Geophys. Union Trans. 20th Ann. Meeting, pt. 3, p. 446–447.

Rogers City limestone or formation

Middle Devonian: Michigan.

G. M. Ehlers and R. E. Radabaugh, 1937, Mich. Acad. Sci. Arts and Letters Sec. Geology and Mineralogy [Guidebook] 7th Ann. Field Excursion, [p. 8–9]; 1938, Mich. Acad. Sci. Arts and Letters Papers, v. 23, p. 441–445.

Rogue formation

Upper Jurassic: Oregon.

F. G. Wells and G. W. Walker, 1953, Geology of the Galice quadrangle, Oregon: U. S. Geol. Survey Geol. Quadrangle Map [GQ 25].

Rohnerville formation

Pleistocene, upper: California.

B. A. Ogle, 1953, Calif. Dept. Nat. Res., Div. Mines Bull. 164, p. 13 (fig. 3), 63, pl. 1.

Rolling Fork limestone member (of Brodhead formation)

Lower Mississippian: Kentucky.

P. B. Stockdale, 1939, Geol. Soc. America Special Paper 22, p. 152–153.

Romeo member (of Joliet formation)

Silurian (Niagaran): Illinois.

D. L. Graf, 1952, Ill. Geol. Survey Rept. Inv. 161, p. 3.

Romero conglomerate (in Debris Dam sandstone)

Upper Cretaceous: California.

B. M. Page, J. G. Marks, and G. W. Walker, 1951, Am. Assoc. Petroleum Geologists Bull., v. 35, no. 8, p. 1733, 1741, 1743.

Ronde Klip conglomerate

Pleistocene: Curaçao, Netherlands West Indies.

G. J. H. Molengraaff, 1929, Geologie en geohydrologie van het Eiland Curaçao: Delft, J. Waltman, Jr., p. 29, strat. table.

Ronning group

Silurian: Northwest Territories (Mackenzie) and Yukon, Canada.

J. S. Stewart, 1944, Canadian Inst. Mining and Metallurgy Trans., v. 47, p. 163.
G. S. Hume and T. A. Link, 1945, Canada Geol. Survey Paper 45–16, p. 11–15.

Roop sandstone member (of Alhambra formation)

Eocene, upper: California.

C. E. Weaver, 1953, Wash. [State] Univ. Pubs. in Geology, v. 7, p. 19 (chart), 54–55.

Roosevelt member (of Apache group)
Precambrian (Algonkian): Arizona.
N. A. E. Hinds, 1936, Carnegie Inst. Washington Pub. 463, p. 32.

Root Valley sandstone
Lower Ordovician (Beekmantownian): Minnesota and Iowa.
C. R. Stauffer and G. A. Thiel, 1941, Minn. Geol. Survey Bull. 29, p. 59–63.

Rosaire group
Cambrian(?): Quebec, Canada.
Jacques Béland, 1952, Quebec Dept. Mines Prelim. Rept. 279, p. 4.

Roseau tuffs
Age not stated: Dominica, British West Indies.
J. W. W. Spencer, 1902, Geol. Soc. London Quart. Jour., v. 58, pt. 3, p. 348.

Roseland anorthosite
Precambrian: Virginia.
C. S. Ross, 1941, U. S. Geol. Survey Prof. Paper 198, p. 2–6.

Rosemount member (of Montreal formation)
Middle Ordovician (Trenton): Quebec, Canada.
T. H. Clark, 1941, Quebec Dept. Mines Prelim. Rept. 158, p. 4; 1952, Geol. Rept. 46, p. 67–71.

Rosenburg series
Age not stated: Quebec, Canada.
J. A. Dresser and T. C. Denis, 1944, Quebec Dept. Mines Geol. Rept. 20, v. 2, p. 398.

Rosette bed (of Midway formation)
Tertiary, lower: Texas.
R. H. Cuyler and A. W. Weeks, 1940, *in* Geol. Soc. America [Guidebook] 53d Ann. Meeting, p. 24.

Ross Mine formation
Permian (Guadalupe): Texas.
C. C. Rix, 1953, *in* W. Tex. Geol. Soc. [Guidebook] Spring Field Trip, May 28–30, p. 5, 14, 20.

Rota limestone
Pleistocene: Mariana Islands (Rota).
Risaburo Tayama, 1939, Correlation of the strata of the South Sea Islands: Geol. Soc. Japan Jour., v. 46, no. 549, p. 346 (correlation table) [English translation in library of U. S. Geol. Survey]; 1952, Coral reefs in the South Seas: Japan Hydrog. Office Bull., v. 11, p. 57, table 4 [English translation in library of U. S. Geol. Survey, p. 68].

Rothwell shale member (of Muldraugh formation)
Lower Mississippian: Kentucky.
P. B. Stockdale, 1939, Geol. Soc. America Special Paper 22, p. 219–220.

Roti granite
Devonian: Newfoundland, Canada.
J. R. Cooper, 1954, Canada Geol. Survey Mem. 276, p. 24.

Roubaix group
Precambrian: South Dakota.
B. J. Berg, 1946, S. Dak. State Geol. Survey Rept. Inv. 52, p. 7.

Rouge River formation
Ordovician: Ontario, Canada.
B. A. Liberty, 1955, Geol. Assoc. Canada Proc., v. 7, pt. 1, p. 145.

Roughlock siltstone
Middle Ordovician (Mohawkian): South Dakota.
M. R. McCoy, 1952, Billings Geol. Soc. Guidebook 3d Ann. Field Conf., p. 44, 46.

Rough Mountain conglomerate lentil (in Brownwood shale)
Mississippian: Texas.
F. B. Plummer, 1950, Tex. Univ. Bur. Econ. Geology Pub. 4329, p. 95.

Round Head breccia
Ordovician: Newfoundland, Canada.
Philip Oxley, 1953, Newfoundland Geol. Survey Rept. 5, p. 33.

Round Hill series
Miocene, upper: Jamaica, British West Indies.
C. A. Matley, 1940, Geol. Soc. London Abs. Proc. 1373, p. 102.

Round Prairie formation
Pennsylvanian (Morrow): Oklahoma.
B. H. Harlton, 1938, Am. Assoc. Petroleum Geologists Bull., v. 22, no. 7, p. 895–900.

Roundtop group
Pennsylvanian: Wyoming and South Dakota.
G. E. Condra, E. C. Reed, and O. J. Scherer, 1940, Nebr. Geol. Survey Bull. 13, p. 2, 3, 32, 44.

Roundtop member (of Richfield formation)
Precambrian or Lower Cambrian: British Columbia, Canada.
A. H. Lang, 1938, Canada Geol. Survey Paper 38–16, p. 8.

Round Valley limestone
Pennsylvanian (Morrowan): Utah and Colorado.
Walter Sadlick, 1955, Wyo. Geol. Assoc. Guidebook 10th Ann. Field Conf., p. 50, 56–57.

Rouyn Lake sediments
Precambrian: Quebec, Canada.
H. J. Conolly and R. C. Hart, 1936, Canadian Inst. Mining and Metallurgy Trans., v. 39, p. 10.

Rowe formation or coal cycle
Pennsylvanian (Desmoinesian): Kansas, Iowa, Missouri, Nebraska, and Oklahoma.
W. V. Searight and others, 1953, Am. Assoc. Petroleum Geologists Bull., v. 37, no. 12, p. 2747–2749.
C. C. Branson, 1954, Okla. Geol. Survey Guidebook 2, p. 6.

Row Park limestone
Middle Ordovician: West Virginia, Maryland, and Pennsylvania.
R. B. Neuman, 1951, Geol. Soc. America Bull., v. 62, no. 3, p. 278–284.

Rubio Peak formation
Tertiary, upper: New Mexico.
R. M. Hernon, W. R. Jones, and S. L. Moore, 1953, N. Mex. Geol. Soc. Guidebook 4th Field Conf., p. 120.
H. L. Jicha, Jr., 1954, N. Mex. State Bur. Mines Min. Res. Bull. 37, p. 39–42.

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Ruby diorite
Age not stated: Arizona.
G. M. Fowler, 1938, Ariz. Bur. Mines Bull. 145, Geol. Ser. 12, p. 121, 122, pl. 32.

Ruby group
Precambrian (Proterozoic): British Columbia, Canada.
E. F. Roots, 1948, Canada Geol. Survey Paper 48–5, p. 6.

Ruby Road formation
Age not stated: Arizona.
B. P. Webb and K. C. Coryell, 1954, U. S. Atomic Energy Comm. RME–2009, p. 7, pl. 1.

Ruddell shale
Upper Mississippian: Arkansas.
MacKenzie Gordon, Jr., 1944, Am. Assoc. Petroleum Geologists Bull., v. 28, no. 11, p. 1631–1634.

Rudist limestones
See Barrettia and/or Titanosarcolites limestones.

Rumsy Ridge sandstone member (of Fish Creek formation)
Lower Silurian: New York, and Ontario, Canada.
D. W. Fisher, 1954, Am. Assoc. Petroleum Geologists Bull., v. 38, no. 9, p. 1988.

Runa Lake granodiorite
Precambrian: Northwest Territories (Mackenzie), Canada.
B. D. Prusti, 1955, (abs.) Canadian Mining Jour., v. 76, no. 3, p. 76.

Runnymede sandstone member (of Ninnescah formation)
Permian: Kansas.
G. H. Norton, 1939, Am. Assoc. Petroleum Geologists Bull., v. 23, no. 12, p. 1773–1774.

Russell feldspathic gabbro
Precambrian: New York.
A. F. Buddington, 1939, Geol. Soc. America Mem. 7, p. 53–54, 260–267.

Russell formation
Ordovician (Richmond): Ontario, Canada.
A. E. Wilson, 1940, Canada Geol. Survey Map 587A.

Russell slate
Upper Cambrian: Vermont.
Rudolf Ruedemann, 1947, Geol. Soc. America Mem. 19, p. 165.

Russell Creek limestone member (of Senora formation)
Pennsylvanian (lower Desmoinesian): Oklahoma, Kansas, and Missouri.
C. C. Branson, 1954, Okla. Acad. Sci. Proc., v. 33, p. 191, 193.

Russia limestone member (of Denmark formation)
Middle Ordovician (Mohawkian): New York.
G. M. Kay, 1943, Am. Jour. Sci., v. 241, no. 10, p. 598–601.

Rust limestone member (of Cobourg formation)
Middle Ordovician (Mohawkian): New York.
G. M. Kay, 1943, Am. Jour. Sci., v. 241, no. 10, p. 598, 601–602.

Ruth formation
See Ruth Lake formation.

Ruth Lake formation

Precambrian (Proterozoic): Quebec and Newfoundland (Labrador), Canada.

H. B. Rice, 1949, Canadian Mining Jour., v. 70, no. 9, p. 71–72.
J. M. Harrison, 1952, Canada Geol. Survey Paper 52–20, p. 10.

Rye formation

Probably Ordovician and Silurian: New Hampshire.

M. P. Billings *in* M. P. Billings, John Rodgers, and J. B. Thompson, Jr., 1952, Guidebook for field trips in New England: Geol. Soc. America, p. 23, 24, 29, 44.

Saavedra member (of Lowell formation)

Lower Cretaceous: Arizona.

A. A. Stoyanow, 1949, Geol. Soc. America Mem. 38, p. 11, 15–16.

Sabana Grande siliceous limestone

Age not stated: Costa Rica.

D. F. MacDonald and others, 1919, [Costa Rica] La Gaceta, Diario Oficial, año 41, no. 138, p. 352.
B. N. Webber, 1942, Am. Inst. Mining and Metall. Engineers Tech. Pub. 1445, p. 3.

Sabanita formation

See Sabanitas formation.

Sabanitas formation

(?)Miocene, middle: Panama.

[T. F. Thompson], 1943, Panama Canal, Special Eng. Div., 3d Locks Proj., pt. 2, chap. 5, p. 7.
S. M. Jones, 1950, Geol. Soc. America Bull., v. 61, no. 9, p. 906, 920.

Sabattus garnet schist

Cambro-Ordovician(?): Maine.

L. W. Fisher, 1936, Am. Mineralogist, v. 21, no. 5, p. 323.

Sabine Island formation

Eocene: Northeast Greenland.

Lauge Koch, 1929, Meddel. om Grønland, bind 73, afd. 2, nr. 2, p. 263.

Sacatar quartz diorite

Paleozoic(?) or Mesozoic(?): California.

W. J. Miller and R. W. Webb, 1940, Calif. Jour. Mines and Geology, v. 36, no. 4, p. 354–355, 378 (fig. 31), pl. 2.

Sacate formation

Eocene, middle: California.

F. R. Kelly, 1943, Am. Assoc. Petroleum Geologists Bull., v. 27, no. 1, p. 10–11.

Sacramento tuff and sand member (of Tuscan formation)

[Pliocene]: California.

R. C. Treasher, 1947, (abs.) Geol. Soc. America Bull., v. 58, no. 12, pt. 2, p. 1257.

Sacramento Hill porphyry

Lower Cretaceous: Arizona.

W. G. Hogue and E. D. Wilson, 1950, Ariz. Bur. Mines Bull. 156, Geol. Ser. 18, p. 21.
G. W. Bain, 1952, Econ. Geology, v. 47, no. 3, p. 306.

Saddleback basalt

Pliocene: California.

H. S. Gale, 1946, Calif. Jour. Mines and Geology, v. 42, no. 4, p. 326, 346–350.

Saddlebag Lake conglomerate
Precambrian (Knife Lake) : Minnesota.
V. G. Sleight *in* J. T. Stark and V. G. Sleight, 1939, Geol. Soc. America Bull., v. 50, no. 7, p. 1033–1034.

Saddle Bayou lentil (of Verda member of Yazoo clay)
Eocene, upper : Louisiana.
H. N. Fisk, 1938, La. Dept. Conserv. Geol. Bull. 10, p. 78, 102–103.

Safford dacite
Tertiary : Arizona.
W. H. Brown, 1939, Geol. Soc. America Bull., v. 50, no. 5, p. 739–740.

Safford tuff
Tertiary : Arizona.
W. H. Brown, 1939, Geol. Soc. America Bull., v. 50, no. 5, p. 731–733.

Sagavanirktok formation
Tertiary, lower : Alaska.
George Gryc, W. W. Patton, Jr., and T. G. Payne, 1951, Washington Acad. Sci. Jour., v. 41, no. 5, p. 167.

Sagavanirktok glaciation
Pleistocene (pre-Wisconsin) : Alaska.
R. L. Detterman *in* T. L. Péwé and others, 1953, U. S. Geol. Survey Cir. 289, p. 11, 13 (table 1).

Sage pebble-conglomerate member (of Snowy Range formation)
Upper Cambrian : Montana.
Christina Lochman, 1950, Am. Assoc. Petroleum Geologists Bull., v. 34, no. 11, p. 2212.

Sage Creek basalts
Eocene, upper : Montana.
Robert Scholten, K. A. Keenmon, and W. O. Kupsch, 1955, Geol. Soc. America Bull., v. 66, no. 4, p. 373, pl. 1.

Sage Valley limestone member (of Goldens Ranch formation)
Eocene, middle or upper : Utah.
Siegfried Muessig, 1951, Science, v. 114, no. 2957, p. 234.

Sail Harbor group
Permian or older : Northwest Territories (Ellesmere Island), Canada.
R. G. Blackadar, 1954, Canada Geol. Survey Paper 53–10, p. 12.

St. Andrew gabbroic anorthosite
Precambrian : Ontario, Canada.
J. M. Harrison, 1944, Geol. Soc. America Bull., v. 55, no. 12, p. 1409.

St. Andrews beds
Eocene, lower : Barbados, British West Indies.
A. B. Thompson, 1925, Oil field exploration and development, v. 1, Oil field principles : New York, N. Y., D. Van Nostrand Co., p. 395.
Alfred Senn, 1940, Am. Assoc. Petroleum Geologists Bull., v. 24, no. 9, p. 1552–1553, 1581.

St. Ann formation
Pennsylvanian : Nova Scotia, Canada.
W. A. Bell and E. A. Goranson, 1938, Canada Geol. Survey Map 359A.

St. Anne formation
See St. Ann formation.

St. Clair facies (of Murfreesboro formation)
Middle Ordovician (Chazyan): Virginia.
Charles Butts, 1940, Va. Geol. Survey Bull. 52, pt. 1, p. 126, 132–134.

St. Cloud gray granodiorite
Precambrian (Algoman): Minnesota.
W. S. Woyski, 1949, Geol. Soc. America Bull., v. 60, no. 6, p. 1002, 1012, pl. 1.

St. Cloud red granite
Precambrian (middle Keweenawan): Minnesota.
M. S. Woyski, 1949, Geol. Soc. America Bull., v. 60, no. 6, p. 1002, 1005–1006.

St. Dominique formation
Ordovician (Chazy): Quebec, Canada.
H. R. Belyea, 1952, Canada Geol. Survey Bull. 22, p. 12–15.

St. Edouard member (of Grand Rapids formation)
Lower Cretaceous: Alberta, Canada (subsurface).
P. C. Badgley, 1952, Canada Geol. Survey Paper 52–11, p. 5.

St. Edwards tuff
Upper Cretaceous: Texas.
C. O. Durham, Jr., 1955, Corpus Christi Geol. Soc. [Guidebook] Ann. Field Trip, March 11–12, [p. 59], pl. 16.

St. Flavien basic eruptives
Cambrian and Ordovician: Quebec, Canada.
T. H. Clark, 1948, Quebec Dept. Mines Prelim. Rept. 225, p. 3, geol. map (Map 694).

St. Francis series
Ordovician: Quebec, Canada.
T. H. Clark *in* H. C. Cooke and T. H. Clark, 1937, Canada Geol. Survey Mem. 211, p. 37–42.

Saint George granite or plutonics
Devonian: New Brunswick, Canada.
A. O. Hayes and B. F. Howell, 1937, Geol. Soc. America Special Paper 5, p. 25.

St. Georges soil
Pleistocene: Bermuda Islands.
R. W. Sayles, 1931, Am. Acad. Arts and Sci. Proc., v. 66, no. 11, p. 395.

St. Gerrard member (of Lake Aylmer formation)
Devonian: Quebec, Canada.
T. H. Clark, 1942, Royal Soc. Canada Trans., ser. 3, v. 36, sec. 4, p. 17–18.

St. Helens breccia
See St. Helens Island breccia.

St. Helens Island breccia
Devonian (?): Quebec, Canada.
A. W. Nolan and J. D. Dixon, 1903, Canadian Record Sci., v. 9, no. 1, p. 53–66.
J. A. Dresser and T. C. Denis, 1944, Quebec Dept. Mines and Geol. Rept. 20, v. 2, p. 276–277.

St. Hilaire member (of Nicolet River formation)
Ordovician: Quebec, Canada.
T. H. Clark, 1947, Quebec Dept. Mines Prelim. Rept. 204, p. 9, 10.

St. Ignace formation
Upper Silurian (Cayugan) : Michigan.
G. M. Ehlers *in* K. K. Landes, G. M. Ehlers, and G. M. Stanley, 1945, Mich. Dept. Conserv. Geol. Survey Div. Pub. 44, Geol. Ser. 37, p. 34, 35, 53–73.

St. Jacques drift
Quaternary : New Brunswick and Quebec, Canada.
H. A. Lee, 1955, Canada Geol. Survey Paper 55–15, p. 6–8.

St. James member (of Dunleith formation)
Middle Ordovician : Illinois.
J. S. Templeton and H. B. Willman, 1952, Tri-State Geol. Soc. Guidebook 16th Ann. Field Conf., figs. 3, 9.

Saint Jean River series
Silurian and Devonian : Quebec, Canada.
H. W. McGerrigle, 1950, Quebec Dept. Mines Geol. Rept. 35, p. 24.
J. F. Caley and others *in* M. W. Ball, 1951, Am. Assoc. Petroleum Geologists Bull., v. 35, no. 2, p. 471.

Saint John volcanics
Precambrian : New Brunswick, Canada.
A. O. Hayes and B. F. Howell, 1937, Geol. Soc. America Special Paper 5, p. 48–54.

Saint John River formation
See Saint Jean River series.

St. Joseph boulder bed
Paleocene : Trinidad, British West Indies.
Hans Boli, 1952, Jour. Paleontology, v. 26, no. 4, p. 670, 671.

Saint Jude igneous breccia
Precambrian : Quebec, Canada.
W. G. Robinson, 1943, Quebec Dept. Mines Prelim. Rept. 279, p. 6–7.

St. Juste group
Silurian (?) or Devonian (?) : Quebec, Canada.
Jacques Béland, 1952, Quebec Dept. Mines Prelim. Rept. 279, p. 6–7.

St. Lawrence granite
Precambrian : Newfoundland, Canada.
R. E. Van Alstine, 1944, Econ. Geology, v. 39, no. 2, p. 111–113.

St. Lawrence shale
Devonian : Quebec, Canada.
E. M. Kindle, 1938, Bull. Am. Paleontology, v. 24, no. 82, p. 46(12).

St. Luke limestone member (of Edinburg formation)
Middle Ordovician : Virginia.
B. N. Cooper and G. A. Cooper, 1946, Geol. Soc. America Bull., v. 57, no. 1, p. 81.

St. Marks facies (of Tampa stage)
Miocene, lower : Florida.
H. S. Puri, 1953, Fla. Geol. Survey Geol. Bull. 36, p. 20–21.

St. Martin formation
Middle Ordovician (Chazy) : Quebec and Ontario, Canada.
A. E. Wilson, 1937, Royal Soc. Canada Trans., ser. 3, v. 31, sec. 4, p. 46, 54.

St. Martins intrusives and extrusives
Precambrian: New Brunswick, Canada.
A. O. Hayes and B. F. Howell, 1937, Geol. Soc. America Special Paper 5, pl. 9.
F. J. Alcock, [1938], Canada Geol. Survey Mem. 216, p. 13.

St. Marysan substage
Miocene, middle: Central Atlantic Coastal Plain.
D. S. Malkin, 1953, Jour. Paleontology, v. 27, no. 6, p. 767–768.

Saint Michel member (of Montreal formation)
Middle Ordovician (Trenton): Quebec, Canada.
T. H. Clark, 1941, Quebec Dept. Mines Prelim. Rept. 158, p. 4; 1952, Geol. Rept. 46, p. 65–67.

St. Paul group
Middle Ordovician: West Virginia, Maryland, and Pennsylvania.
R. B. Neuman, 1951, Geol. Soc. America Bull., v. 62, no. 3, p. 278.

St. Paul member (of Grand Rapids formation)
Lower Cretaceous: Alberta, Canada (subsurface).
P. C. Badgley, 1952, Canada Geol. Survey Paper 52–11, fig. 2.

St. Pauls group
Ordovician: Newfoundland, Canada.
Helgi Johnson, 1941, N. Y. Acad. Sci. Trans., ser. 2, v. 3, no. 6, p. 143.

St. Regis granite
Precambrian: New York.
A. F. Buddington, 1937, N. Y. State Mus. Bull. 309, p. 34–35, 38, 45–46.

Sainte Thérèse member (of Laval formation)
Middle Ordovician (Chazy): Quebec, Canada.
T. H. Clark, 1944, Royal Soc. Canada Trans., sec. 4, v. 38, p. 29; 1952, Quebec Dept. Mines Geol. Rept. 46, p. 43, 44.

St. Thomas-in-the-Vale marls
Miocene, lower: Jamaica, British West Indies.
C. A. Matley, 1946, Outline of the geology of the Kingston district of Jamaica: Inst. of Jamaica, [p. 3], geol. map; 1951, Geology and physiography of the Kingston district, Jamaica: Inst. of Jamaica, p. 54–60, geol. map.

St. Wendells limestone (in McLeansboro formation)
Pennsylvanian: Indiana.
J. A. Culbertson, 1932, The paleontology and stratigraphy of the Pennsylvanian strata between Caseyville, Ky. and Vincennes, Ind.; Abs. Thesis, Ill. Univ.: Urbana, Ill., p. 3, 7.

Sais quartzite
Precambrian: New Mexico.
J. T. Stark and E. C. Dapples, 1941, (abs.) Geol. Soc. America Bull., v. 52, no. 12, pt. 2, p. 1936; 1946, v. 57, no. 12, pt. 1, p. 1127–1129.

Saladito formation
Oligocene: Tamaulipas, Mexico.
Manuel Alvarez, Jr., 1951., Am. Assoc. Petroleum Geologists Bull., v. 35, no. 2, p. 365.

Salisbury formation
Pennsylvanian: New Brunswick, Nova Scotia, and Prince Edward Island, Canada.
J. F. Caley and others, 1951, Am. Assoc. Petroleum Geologists Bull., v. 35, no. 2, p. 478.
W. C. Gussow, 1953, Am. Assoc. Petroleum Geologists Bull., v. 37, no. 7, p. 1755–1756.

Salish group

Recent: British Columbia, Canada.

J. E. Armstrong and W. C. Brown, 1953, Canada Geol. Survey Water Supply Paper 322, p. 11, 48, map.

Salitral shale tongue (of Chinle formation)

Upper Triassic: New Mexico.

G. H. Wood and S. A. Northrop, 1946, U. S. Geol. Survey Oil and Gas Inv. Prelim. Map 57.

Salmon Lake glaciation

Pleistocene (Wisconsin): Alaska.

D. M. Hopkins *in* T. L. Péwé and others, 1953, U. S. Geol. Survey Circ. 289, p. 10, 13 (table 1).

Saltash formation

Precambrian: Vermont.

W. F. Brace, 1953, Vt. Geol. Survey Bull. 6, p. 44–45, tables 2, 3.

Salt Creek conglomerate

Upper Cretaceous: California.

N. L. Taliaferro, 1954, *in* Northern Calif. Geol. Soc. [Guidebook] Spring Field Trip, [p. 6, 7, 8], correlation chart.

Salter member (of Mount Head formation)

Carboniferous: Alberta, Canada.

R. J. W. Douglas, 1953, Alberta Soc. Petroleum Geologists 3d Ann. Field Conf. and Symposium, p. 68.

Samelias formation

Precambrian: South Dakota.

J. R. Berg, 1946, S. Dak. State Geol. Survey Rept. Inv. 52, p. 7.

Sams Creek metabasalt

Precambrian(?): Maryland.

A. J. Stose and G. W. Stose, 1946, Md. Dept. Geology, Mines and Water Res., Carroll and Frederick Counties Rept., p. 58, 63–65.

San Andres formation

Upper Jurassic and Lower Cretaceous: Cuba.

L. W. J. Vermunt, 1937, Geog. Geol. Meded. (Utrecht Univ.) Physiog.-Geol. Reeks, no. 13, p. 5, 7–15.

San Antonio formation

Precambrian: Manitoba, Canada.

C. H. Stockwell, 1938, Canada Geol. Survey Mem. 210, p. 19–20.

San Antonio Canyon group

Age unknown: California.

K. J. Hsu, 1955, Calif. Univ. Dept. Geol. Sci. Bull., v. 30, no. 4, p. 295, map 1.

San Ardo group

Pliocene: California.

T. A. Baldwin, 1950, Am. Assoc. Petroleum Geologists Bull., v. 34, no. 10, p. 1987–1988.

Sanastee sandstone member (of Mancos shale)

Cretaceous: New Mexico.

C. T. Smith, 1951, *in* N. Mex. Geol. Soc. Guidebook 2d Field Conf., p. 13, 79.
Dan Bozanic, 1955, Four Corners Geol. Soc. Guidebook [1st] Field Conf., p. 91.

Sanatorium limestone lentil (in Gueda Springs shale member of Wellington formation)
Permian: Kansas.
W. A. Ver Wiebe, 1937, Wichita Municipal Univ. Bull., v. 12, no. 5, p. 14.

San Bartolo formation
Jurassic: Vera Cruz, Mexico.
Ramiro Robles Ramos, 1942, Irrigación en Mexico, v. 23, no. 3, p. 45 (correlation chart).
R. W. Imlay and others, 1948, Am. Assoc. Petroleum Geologists Bull., v. 32, no. 9, p. 1751.

Sand Bay volcanics
Tertiary: Alaska (Aleutian Islands).
F. S. Simons and D. E. Mathewson, 1947, U. S. Geol. Survey Alaskan Volcano Inv. Rept. 2, pt. 4, p. 61–63.

Sand Canyon formation
Pleistocene, upper: New Mexico.
Sheldon Judson, 1950, Geol. Soc. America Bull., v. 61, no. 3, p. 263; 1953, Smithsonian Misc. Coll., v. 121, no. 1, p. 21–22, 30.

Sand Canyon member (of Sheep Creek formation)
Miocene (Hemingford): Nebraska.
M. K. Elias, 1942, Geol. Soc. America Special Paper 41, p. 129–131, pl. 17.

Sand Draw sandstone lentil (of White River formation)
Eocene or Oligocene: Wyoming.
F. B. Van Houten, 1954, U. S. Geol. Survey Oil and Gas Inv. Map OM 140, sheet 2.

Sanderson formation
Lower Mississippian: Indiana, Kentucky, and Ohio.
Guy Campbell, 1946, Geol. Soc. America Bull., v. 57, no. 9, p. 847–849, 857–858, 875–878, 879.

Sandersville limestone member (of Barnwell formation)
Eocene: Georgia.
C. W. Cooke, 1943, U. S. Geol. Survey Bull. 941, p. 62–63.

Sandgirt Lake formation
Precambrian: Newfoundland (Labrador), Canada.
E. H. Kranck, 1953, Canada Geol. Survey Bull. 26, p. 4, 37.

Sandholdt shale
Miocene, lower and middle: California.
R. R. Thorup, 1941, (abs.) Geol. Soc. America Bull., v. 52, no. 12, pt. 2, p. 1958; 1943, Calif. Dept. Nat. Res., Div. Mines Bull. 118, pt. 3, p. 464, 466.

Sandpile group
Upper Ordovician and Lower Silurian: British Columbia, Canada.
H. Gabrielse, 1955, Canada Geol. Survey Paper (Prelim. Map) 54–10.

Sandtrap conglomerate
Pliocene, upper(?): Arizona.
S. G. Lasky and B. N. Webber, 1949, U. S. Geol. Survey Bull. 961, p. 35–38.

San Fernando argiline
Upper Cretaceous: Trinidad, British West Indies.
G. A. Waring, 1926, Johns Hopkins Univ. Studies in Geology, no. 7, p. 29, 41.
R. A. Liddle, [1928], The geology of Venezuela and Trinidad: Fort Worth, Tex., J. P. MacGowan, p. 440.

San Fernando formation

Cretaceous: Baja California, Mexico.

[C. H. Beal], 1924, Bol. del Petroleo, v. 17, no. 6, p. 421; v. 18, no. 1, p. 49, geol. map.

C. H. Beal, 1948, Geol. Soc. America Mem. 31, p. 38–40.

Sanford quartzite

Triassic(?): California.

G. A. Schroter, 1938, Eng. and Mining Jour., v. 139, no. 4, p. 44.

San Gregorio formation

Oligocene(?) to Miocene, lower(?): Baja California, Mexico.

[C. H. Beal], 1924, Bol. del Petroleo, v. 17, no. 6, p. 422.

C. H. Beal, 1948, Geol. Soc. America Mem. 31, p. 54–56.

San Jacinto granodiorite

Jurassic or Cretaceous: California.

W. J. Miller, 1944, Calif. Jour. Mines and Geology, v. 40, no. 1, p. 60–61, pl. 1.

San Joaquin facies (of El Doctor limestone)

Lower Cretaceous: Queretaro, Mexico.

B. W. Wilson, J. P. Hernández M., and E. Meave T., 1955, Soc. Geol. Mexicana Bol., tomo 18, no. 1, p. 4, fig. 2.

San Jon formation

Pleistocene, upper: New Mexico.

Sheldon Judson, 1950, Geol. Soc. America Bull., v. 61, no. 3, p. 263; 1953, Smithsonian Misc. Coll., v. 121, no. 1, p. 18–21, 30.

San Jose formation

Eocene, lower: New Mexico.

G. G. Simpson, 1948, Am. Jour. Sci., v. 246, no. 5, p. 280–282; no. 6, p. 363–383.

San José formation

Upper(?) Jurassic: San Luis Potosí, Mexico.

D. E. White and Jenaro González Reyna, 1946, U. S. Geol. Survey Bull. 946–E, p. 134.

San José quartz diorite

Cretaceous: Baja California, Mexico.

A. O. Woodford and T. F. Harriss, 1938, Geol. Soc. America Bull., v. 49, no. 9, p 1314–1316.

Sankakuyama formation

Eocene(?): Mariana Islands (Saipan).

Risaburo Tayama, 1938, Geomorphology, geology, and coral reefs of Saipan Island: Tropical Industry Inst., Palau, South Sea Islands, Bull. 1 [English translation in library of U. S. Geol. Survey, p. 50, 51].

Josiah Bridge *in* W. S. Cole and Josiah Bridge, 1953, U. S. Geol. Survey Prof. Paper 253, p. 7.

Sankoty sand

Pleistocene (Nebraskan): Illinois.

Leland Horberg, 1946, (abs.) Geol. Soc. America Bull., v. 57, no. 12, pt. 2, p. 1204; 1950, Ill. State Geol. Survey Bull. 73, p. 51–52.

San Marcos arkose

Lower Cretaceous: Coahuila, Mexico.

R. W. Imlay, 1940, Geol. Soc. America Bull., v. 51, no. 1, p. 121, 123.

San Marcos formation

Pliocene, lower: Baja California, Mexico.

I. F. Wilson, 1948, Am. Assoc. Petroleum Geologists Bull., v. 32, no. 9, p. 1768.

San Marcos gabbro

Cretaceous: California.

F. S. Miller *in* C. S. Hurlbut, Jr., 1935, Am. Mineralogist, v. 20, no. 9, p. 609–611.
F. S. Miller, 1937, Geol. Soc. America Bull., v. 48, no. 10, p. 1399–1401.

San Marcos Mountain gabbro

See **San Marcos gabbro.**

San Pablo phase (of Barbacoas formation)

Pre-Eocene: Panama Canal Zone.

R. T. Hill, 1898, Harvard Coll. Mus. Comp. Zoology Bull., v. 28, no. 5, p. 184–185.

San Pedro group

Pliocene: Arizona.

A. A. Stoyanow, 1937, (abs.) Geol. Soc. America Proc. 1936, p. 297 (table).

San Pedro Valley formation

Pliocene (Blancan) to Pleistocene: Arizona and New Mexico.

H. E. Wood, 2d, and others, 1941, Geol. Soc. America Bull., v. 52, no. 1, p. 31, pl. 1.

Sanpete formation

Upper Cretaceous: Utah.

E. M. Spieker, 1946, U. S. Geol. Survey Prof. Paper 205–D, p. 122, 127.

San Ricardo [formation]

Lower Cretaceous: Tabasco, Mexico.

E. J. Guzman, Rodolfo Suarez, and Ernesto Lopez Ramos, 1953, 19e Cong. géol. internat. Comptes rendus, fasc. 16, pl. 1 (geol. map) [1954].

Sansom graywacke and quartzite

Ordovician: Newfoundland, Canada.

G. R. Heyl, 1936, Newfoundland Geol. Survey Bull. 3, p. 6–7.

San Souci volcanic formation

Lower Cretaceous: Trinidad, British West Indies.

A. G. Hutchison, 1938, Bol. Geología y Minería (Venezuela), v. 2, nos. 2–4 (English ed.), p. 229, 235 (table).
H. G. Kugler, 1953, Vereinigung Schweizer Petroleum Geologen u. Ingenieure Bull., v. 20, no. 59, p. 33, 35 (table).

Sans Sault group

Lower Cretaceous: Northwest Territories (Mackenzie), Canada.

J. S. Stewart, 1945, Canada Geol. Survey Paper 45–29, p. 7.

Sansum formation

Triassic and Jurassic: British Columbia, Canada.

J. A. Allan, 1910, Canada Geol. Survey Summ. Rept. 1909, p. 99.

Santa Barbara series

Mesozoic: Chihuahua, Mexico.

P. B. King, 1947, Mexico Univ. Nac. Autónoma, Inst. Geología, Geofisica, y Geodesia, Cartas Geología y Mineras 3.

Santa Cecilia limestone

Cretaceous: Oaxaca, Mexico.

Thomás Barrera, 1946, Guía geológica de Oaxaca: Mexico Univ. Nac., Inst. Geología, p. 66.

Santa Clara basalt

Quaternary: New Mexico.

H. T. U. Smith, 1937, (abs.) Geol. Soc. America Proc. 1936, p. 103.

Santa Clara complex
Precambrian: New York.
A. F. Buddington, 1937, N. Y. State Mus. Bull. 309, p. 8, 9, 29–34, 37–38, 42–45.

Santa Cruz group
Upper Cretaceous: Arizona.
A. A. Stoyanow, 1937, (abs.) Geol. Soc. America Proc. 1936, p. 297 (table).

Santa Emilia formation
Upper(?) Jurassic: San Luis Potosí, Mexico.
D. E. White and Jenaro González Reyna, 1946, U. S. Geol. Survey Bull. 946–E, p. 134.

Santa Eulalia formation
Cretaceous: Baja California, Mexico.
A. O. Woodford and T. F. Harriss, 1938, Geol. Soc. America Bull., v. 49, no. 9, p. 1310–1313.

Santa Lucia clay
Miocene, middle: Trinidad, British West Indies.
G. A. Waring, 1926, Johns Hopkins Univ. Studies in Geology, no. 7, p. 57.

Santa Rita granodiorite porphyry
Cretaceous or younger: New Mexico.
P. F. Kerr and others, 1950, Geol. Soc. America Bull., v. 61, no. 4, p. 288–289, 302.

Santa Rosa beds
Eocene: Mariana Islands (Guam).
Risaburo Tayama, 1952, Coral reefs in the South Seas: Japan Hydrog. Office Bull., v. 11, p. 47, table 4 [English translation in library of U. S. Geol. Survey, p. 57].

Santa Rosalía formation
Pleistocene: Baja California, Mexico.
I. F. Wilson, 1948, Am. Assoc. Petroleum Geologists Bull., v. 32, no. 9, p. 1782–1784.

Santa Toriba beds
See Santo Toribio beds.

San Telmo formation
Cretaceous: Baja California, Mexico.
A. O. Woodford and T. F. Harriss, 1938, Geol. Soc. America Bull., v. 49, no. 9, p. 1306–1310.

Santiago formation
Eocene: California.
W. P. Woodring and W. P. Popenoe, 1945, U. S. Geol. Survey Oil and Gas Inv. Prelim. Chart 12.

Santiago Peak volcanics
Jurassic(?): California.
E. S. Larsen, Jr., 1948, Geol. Soc. America Mem. 29, p. 22–25.

Santiam basalts
Pleistocene: Oregon.
T. P. Thayer, 1936, Jour. Geology, v. 44, no. 6, p. 706, 709 (fig. 2), 713 (fig. 3).

Santo Madero formation
Pliocene(?): Coahuila, Mexico.
A. R. V. Arellano, 1952, Am. Jour. Sci., v. 249, no. 8, p. 609–610.

Santo Toribio beds

Miocene(?): Guatemala.

L. H. Ower, 1922, Geology of British Honduras: Belize Independent, v. 8, no. 440; [1928], The Geology of British Honduras: Belize, British Honduras, Clarion Ltd., p. [15].

Sanup Plateau member (of Muav formation)

Lower and/or Middle Cambrian: Arizona.

E. D. McKee, 1945, Carnegie Inst. Washington Pub. 563, p. 14, 29, 90–92.

San Ysidro member (of Yeso formation)

Permian: New Mexico.

G. H. Wood and S. A. Northrop, 1946, U. S. Geol. Survey Oil and Gas Inv. Prelim. Map 57.

Sappa formation

Pleistocene: Nebraska.

J. C. Frye, Ada Swineford, and A. B. Leonard, 1948, Jour. Geology, v. 56, no. 6, p. 504–505, 520 (fig. 3), 522.

G. E. Condra, E. C. Reed, and E. D. Gordon, 1950, Nebr. Geol. Survey Bull. 15–A, p. 22.

Sapperton sediments

Pleistocene: British Columbia, Canada.

J. E. Armstrong and W. C. Brown, 1953, Canada Geol. Survey Water Supply Paper 322, p. 11, 48, table.

Sappington sandstone member (of Three Forks shale)

Upper Devonian and Mississippian: Montana.

G. W. Berry, 1943, Geol. Soc. America Bull., v. 54, no. 1, p. 14–16.

Sardine series

Miocene: Oregon.

T. P. Thayer, 1936, Jour. Geology, v. 44, no. 6, p. 703–704, 709 (fig. 2), 713 (fig. 3).

Sargent Bay limestone

Silurian: Quebec, Canada.

T. H. Clark, 1936, Canadian Field Naturalist, v. 50, no. 3, p. 33.

Saroc Ridge group

Age unknown: California.

K. J. Hsu, 1955, Calif. Univ. Dept. Geol. Sci. Bull., v. 30, no. 4, p. 283, map 1.

Sarpy formation

Pennsylvanian (Missouri series): Nebraska.

G. E. Condra, 1949, Nebr. Geol. Survey Bull. 16, p. 37.

Saskatchewan group

Devonian: Subsurface in Saskatchewan and Manitoba, Canada; Montana, North Dakota, and South Dakota.

A. D. Baillie, 1953, Manitoba Dept. Mines and Nat. Res. Mines Br. Pub. 52–5, p. 30–32.

Saugerties limy shale

Lower(?) Devonian: New York.

G. H. Chadwick, 1940, N. Y. State Geol. Assoc. 16th Ann. Meeting Field Guide Leaflets, p. 2, 3; 1944, N. Y. State Mus. Bull. 336, p. 233 [1946].

Sauk sequence

Precambrian (upper Proterozoic) to Upper Cambrian: Central and western United States.

L. L. Sloss, W. C. Krumbein, and E. C. Dapples *in* C .R. Longwell, chm., 1949, Geol. Soc. America Mem. 39, p. 110–115.

Saunders group
Cretaceous: Alberta, Canada.
J. A. Allan and R. L. Rutherford, 1923, Alberta Research Council Rept. 6, p. 51.

Saw Mill conglomerate division (of Almy conglomerate)
Paleocene: Utah.
A. J. Eardley, 1944, Geol. Soc. America Bull., v. 55, no. 7, p. 842.

Sawtooth formation
Middle Jurassic: Montana and Idaho.
W. A. Cobban, 1945, Am. Assor. Petroleum Geologists Bull., v. 29, no. 9, p. 1270–1277.

Saxe Brook formation
Upper Cambrian (early Dresbachian?): Vermont.
B. F. Howell, 1939, (abs.) Geol. Soc. America Bull., v. 50, no. 12, pt. 2, p. 1964.

Sayreville sand member (of Raritan formation)
Upper Cretaceous: New Jersey.
H. C. Barksdale and others, 1943, The ground-water supplies of Middlesex County, New Jersey: N. J. State Water Policy Comm. [Special Rept. 8], p. 101.

Scales Creek flow (in Portage Lake lava series)
Precambrian (middle Keweenawan series): Michigan.
W. S. White, H. R. Cornwall, and R. W. Swanson, 1953, U. S. Geol. Survey Geol. Quadrangle Map GQ 27 [1954].

Scammon cyclothem or formation
Pennsylvanian (Des Moines): Kansas.
G. E. Abernathy, 1937, Kans. Geol. Soc. Guidebook 11th Ann. Field Conf., p. 18, 20, 22; 1938, Kans. Geol. Soc. Trans., v. 41, p. 193, 195.

Scandian sub-age
Pleistocene: Kansas, Nebraska, and Iowa.
J. C. Frye and A. B. Leonard, 1955, Am. Jour. Sci., v. 253, no. 6, p. 362.

Scappoose formation
Oligocene, upper, or Miocene, lower: Oregon.
W. C. Warren and Hans Norbisrath, 1946, Am. Assoc. Petroleum Geologists Bull., v. 30, no. 2, p. 231–233.

Scatter formation
Lower Cretaceous: British Columbia and Yukon, Canada.
E. D. Kindle, 1944, Canada Geol. Survey Paper 44–16, p. 11–12.

Scauminac formation
Devonian: New Brunswick, Canada.
H. M. Ami, 1900, Royal Soc. Canada Trans., 2d ser., v. 6, sec. 4, p. 208.

Scenic Point member (of Appekunny formation)
Precambrian (Belt): Montana, and Alberta, Canada.
C. L. Fenton and M. A. Fenton, 1937, Geol. Soc. America Bull., v. 48, no. 12, p. 1886–1887.

Scherrer formation
Permian: Arizona.
James Gilluly, J. R. Cooper, and J. S. Williams, 1954, U. S. Geol. Survey Prof. Paper 266, p. 27–29.

Schieffelin granodiorite
Upper Cretaceous or Tertiary: Arizona.
B. S. Butler, E. D. Wilson, and C. A. Rasor, 1938, Ariz. Bur. Mines Bull. 143, Geol. Ser. 10, p. 25–26, pl. 3.

School Canyon granite
Jurassic(?): California.
J. C. Crowell, 1952, Calif. Dept. Nat. Res., Div. Mines Special Rept. 24, p. 8.

Schoolhouse sand
Middle Permian: Colorado.
W. O. Thompson, 1949, Am. Assoc. Petroleum Geologists Bull., v. 33, no. 1, p. 72.

School Mine ledge beds (in Rich Fountain formation)
Lower Ordovician: Missouri.
J. S. Cullison, 1944, Mo. Univ. School Mines and Metallurgy Bull., Tech. Ser., v. 15, no. 2, p. 18–19.

Schrader Bluff formation
Upper Cretaceous: Alaska.
George Gryc, W. W. Patton, Jr., and T. G. Payne, 1951, Washington Acad. Sci. Jour., v. 41, no. 5, p. 164–166.

Schuler formation (of Cotton Valley group)
Upper Jurassic: Subsurface in Arkansas, Louisiana, and Texas.
H. K. Shearer, 1938, Am. Assoc. Petroleum Geologists Bull., v. 22, no. 6, p. 724.

Schulz member (of Williams formation)
See **Schulz Ranch sandstone member** (of Williams formation).

Schulz Ranch sandstone member (of Williams formation)
Upper Cretaceous: California.
W. P. Popenoe, 1937, Jour. Paleontology, v. 11, no. 5, p. 380.
W. P. Woodring and W. P. Popenoe, 1945, U. S. Geol. Survey Oil and Gas Inv. Prelim. Chart 12.

Scio beds
Oligocene, upper, to Miocene, lower: Oregon.
E. I. Sanborn, 1947, Oreg. State Coll. Studies in Geology Mon. 4, p. 1–2, 11–12.

Scituate granite gneiss
Devonian(?) or older: Rhode Island.
A. W. Quinn, 1951, Bedrock geology of the North Scituate quadrangle, Rhode Island: U. S. Geol. Survey Geol. Quadrangle Map [GQ 13].

Scotch Village formation
Mississippian or Pennsylvanian: Nova Scotia, Canada.
D. G. Crosby, 1952, Canada Geol. Survey Paper (Prelim. Map) 52–18.

Scotia Bluffs sandstone
Pliocene, upper: California.
B. A. Ogle, 1953, Calif. Dept. Nat. Res., Div. Mines Bull. 164, p. 13 (fig. 3), 33–35, pl. 1.

Scotstown granite
Devonian: Quebec, Canada.
J. A. Dresser and T. C. Denis, 1944, Quebec Dept. Mines Geol. Rept. 20, v. 2, p. 452, 462.

Scott Canyon formation
Mississippian(?): Nevada.
R. J. Roberts, 1951, Geology of the Antler Peak quadrangle, Nevada: U. S. Geol. Survey Geol. Quadrangle Map [GQ 10].

Scottville cyclothem (including Scottville limestone)
Pennsylvanian: Illinois.
J. N. Payne, 1942, Ill. State Geol. Survey Circ. 88, p. 4.
J. R. Ball, 1952, Ill. State Geol. Survey Bull. 77, p. 31–32.

Scoudouc formation
Pennsylvanian: New Brunswick, Nova Scotia, and Prince Edward Island, Canada.
J. F. Caley and others, 1951, Am. Assoc. Petroleum Geologists Bull., v. 35, no. 2, p. 478.
W. C. Gussow, 1953, Am. Assoc. Petroleum Geologists Bull., v. 37, no. 7, p. 1756–1757.

Seabee formation
Upper Cretaceous: Alaska.
George Gryc, W. W. Patton, Jr., and T. G. Payne, 1951, Washington Acad. Sci. Jour., v. 41, no. 5, p. 166.

Seacliffs sandstone
Mississippian: Newfoundland, Canada.
D. M. Baird, 1951, Canadian Inst. Mining and Metallurgy Trans., v. 54, p. 86.

Seaforth porphyry
Precambrian (Archean): Quebec, Canada.
W. W. Weber, 1951, Quebec Dept. Mines Prelim. Rept. 255, map.

Seal Lake series
Precambrian: Quebec and Newfoundland (Labrador), Canada.
C. L. Evans, 1952, Geol. Assoc. Canada Proc., v. 5, p. 112, 113, 116.

Searston beds
Mississippian: Newfoundland, Canada.
W. A. Bell, 1948, Canada Geol. Survey Bull. 10, p. 20.

Seawall metafelsite
Age not stated: Maine.
G. H. Chadwick, 1944, N. Y. Acad. Sci. Trans., ser. 2, v. 6, no. 6, p. 176.

Sebrina complex
Triassic(?): California.
G. A. Schroter, 1938, Eng. and Min. Jour., v. 139, no. 4, p. 43–44.

Second Mountain member (of Pocono formation)
Lower Mississippian: Pennsylvania.
Bradford Willard and A. B. Cleaves, 1938, Pa. Geol. Survey, ser. 4, Bull. G 8, p. 18.

Second Value member (of Montoya dolomite)
Upper Ordovician: New Mexico.
L. P. Entwistle, 1944, N. Mex. State Bur. Mines Min. Res. Bull. 19, p. 17, 18.

Seeman group
Ordovician(?) and younger: British Columbia, Canada.
H. W. Little, 1950, Canada Geol. Survey Paper 50–19, p. 23–24.

Seigas sandstone
Upper Silurian: Maine, and New Brunswick, Canada.
O. O. Nylander, 1940, Geological formations of the St. John River valley, northern Maine and New Brunswick: Caribou, Maine, p. 7–8.

Selah tuff member (of Ellensburg formation)
[Miocene]: Washington.
J. H. Mackin, 1947, (abs.) Northwest Science, v. 21, no. 1, p. 33.

Selah Butte flow
Miocene and Pliocene: Washington.
A. C. Waters, 1955, Geol. Soc. America Bull., v. 66, no. 6, p. 673, pl. 1.

Selatna glaciation
Pleistocene (Wisconsin): Alaska.
A. T. Fernald *in* T. L. Péwé and others, 1953, U. S. Geol. Survey Circ. 289, p. 6, 13 (table 1).

Selby member (of Rockland formation)
Middle Ordovician (Mohawkian): Ontario, Canada, and New York.
G. M. Kay, 1937, Geol. Soc. America Bull., v. 48, no. 2, p. 252–253.

Selden basalt tongue
Tertiary: New Mexico.
F. E. Kottlowski, 1953, N. Mex. Geol. Soc. Guidebook 4th Field Conf., p. 32 (map), 33, 146.

Sellers limestone (in Caseyville formation)
Pennsylvanian: Illinois.
H. R. Wanless, 1939, Geol. Soc. America Special Paper 17, p. 36, 101.

Semiamu group
Pleistocene: British Columbia, Canada.
J. E. Armstrong and W. C. Brown, 1953, Canada Geol. Survey Water Supply Paper 322, p. 48, table.

Semiamu till
Pleistocene: British Columbia, Canada.
J. E. Armstrong and W. C. Brown, 1953, Canada Geol. Survey Water Supply Paper 322, p. 10, table.

Sentinel Hill member (of Schrader Bluff formation)
Upper Cretaceous: Alaska (subsurface and surface).
George Gryc, W. W. Patton, Jr., and T. G. Payne, 1951, Washington Acad. Sci. Jour., v. 41, no. 5, p. 166.

Sentinell limestone
Cambrian(?): Utah.
V. E. Peterson, 1942, Econ. Geology, v. 37, no. 6, p. 471 (table 1).

Sentinell quartzite
Cambrian(?): Utah.
V. E. Peterson, 1942, Econ. Geology, v. 37, no. 6, p. 471 (table 1).

Sepultura formation
Eocene, lower: Baja California, Mexico.
Manuel Santillán and Tomás Barrera, 1930, Inst. Geología Mexico Anales, tomo 5, p. 14–20.

Sepur beds
Tertiary: Guatemala and British Honduras.
Karl Sapper, 1899, Petermanns geog. Mitt. Ergänzungsbd. 27, Heft. 127, p. 43, 55, 67.

Serbin sand lentil (in Mount Tabor member of Yegua formation)
Eocene (Claiborne): Texas.
H. B. Stenzel, 1939, Tex. Univ. Bur. Econ. Geology Pub. 3945, pt. 2, p. 859 [1940].

Sermilik group

Precambrian: Southwest Greenland.

R. D. Crommelin, 1937, Meddel. om Grønland, bind 113, nr. 1, p. 5–6.
C. E. Wegmann, 1938, Meddel. om Grønland, bind 113, nr. 2, p. 16–23.

Seroe di Cueba series

Eocene, upper: Curaçao, Netherlands West Indies.

G. J. H. Molengraaff, 1929, Geologie en geohydrologie van het Eiland Curaçao: Delft, J. Waltman, Jr., p. 25–28, 60.

Seroe Domi beds

Pleistocene: Curaçao, Netherlands West Indies.

G. J. H. Molengraaff, 1929, Geologie en geohydrologie van het Eiland Curaçao: Delft, J. Waltman, Jr., p. 29, strat. table.

Seroe Largo limestone

Pleistocene: Bonaire, Netherlands West Indies.

P. J. Pijpers, 1931, K. Akad. Wetensch. Amsterdam, Sec. Sci. Proc., v. 34, no. 1, p. 169–170.

Seroe Montagne limestone

Eocene, upper: Bonaire, Netherlands West Indies.

Alfred Senn, 1940, Am. Assoc. Petroleum Geologists Bull., v. 24, no. 9, p. 1571, 1581, 1590.

Seroe Teintje limestone

Upper Cretaceous (lower Senonian): Curaçao, Netherlands West Indies.

G. J. H. Molengraaff, 1929, Geologie en geohydrologie van het Eiland Curaçao: Delft, J. Waltman, Jr., p. 23, 55.

Serpent formation

Eocene, lower: Trinidad, British West Indies.

H. G. Kugler, 1953, Vereinigung Schweizer Petroleum Geologen u. Ingenieure Bull., v. 20, no. 59, p. 38.

Serrano clay bed (in Silverado formation)

Paleocene: California.

W. P. Woodring and W. P. Popenoe, 1945, U. S. Geol. Survey Oil and Gas Inv. Prelim. Chart 12.

Servilleta formation

Pliocene, upper, or Pleistocene, lower: New Mexico.

Arthur Montgomery, 1953, N. Mex. State Bur. Mines Min. Res. Bull. 30, p. 53.

Seven-Mile tuff and sand member (of Tuscan formation)

[Pliocene]: California.

R. C. Treasher, 1947, (abs.) Geol. Soc. America Bull., v. 58, no. 12, pt. 2, p. 1257.

Seven Springs formation

Tertiary: Texas.

G. K. Eifier, Jr., 1951, Geol. Soc. America Bull., v. 62, no. 4, p. 345–346, pl. 1.

Seventeen-Mile Brook beds

Devonian: Quebec, Canada.

H. W. McGerrigle, 1954, Quebec Dept. Mines Geol. Rept. 62, p. 38–40.

Sevier River formation

Pliocene, upper, or Pleistocene, lower: Utah.

Eugene Callaghan, 1937, (abs.) Washington Acad. Sci. Jour., v. 27, no. 8, p. 359; 1938, U. S. Geol. Survey Bull. 886–D, p. 100–101.

Sevilleta rhyolite

Precambrian: New Mexico.

J. T. Stark and E. C. Dapples, 1941, (abs.) Geol. Soc. America Bull., v. 52, no. 12, pt. 2, p. 1936; 1946, v. 57, no. 12, pt. 1, p. 1134–1135.

Seward formation

Pliocene: Nebraska.

G. E. Condra, E. C. Reed, and E. D. Gordon, 1947, Nebr. Geol. Survey Bull. 15, p. 15–16.

Seward grits

Precambrian: Quebec and Newfoundland (Labrador), Canada.

H. R. Rice, 1949, Canadian Mining Jour., v. 70, no. 9, p. 71–72.
J. K. Gustafson and A. E. Moss, 1953, Mining Eng., v. 5, no. 6, p. 595.

Seymour group

Pleistocene: British Columbia, Canada.

J. E. Armstrong and W. C. Brown, 1953, Canada Geol. Survey Water Supply Paper 322, p. 48, table.

Seymour till

Pleistocene: British Columbia, Canada.

J. E. Armstrong and W. C. Brown, 1953, Canada Geol. Survey Water Supply Paper 322, p. 10, 48, table.

Shadow Lake formation

Middle Ordovician (Black River): Ontario, Canada.

V. J. Okulitch, 1939, Royal Canadian Inst. Trans., v. 22, pt. 2, p. 321.

Shaftesbury formation

Lower Cretaceous: British Columbia, Canada.

F. H. McLearn and J. F. Henderson, 1944, Canada Geol. Survey Paper 44–2, p. 3.

Shale Brook submember (of Thorburn member of Stellarton series)

Pennsylvanian: Nova Scotia, Canada.

W. A. Bell, 1940, Canada Geol. Survey Mem. 225, p. 45 [1941].

Shannondale limestone member (of Benbolt limestone)

Middle Ordovician: Virginia.

B. N. Cooper and C. E. Prouty, 1943, Geol. Soc. America Bull., v. 54, no. 6, p. 868–871.

Sharon Springs formation

Middle Devonian(?): New York.

Winifred Goldring and R. H. Flower, 1942, Am. Jour. Sci., v. 240, no. 10, p. 677–678, 679, 689–690, 694.

Shasta lavas

Pliocene: California.

O. P. Jenkins, 1938, Geologic map of California (1:500,000): Calif. Dept. Nat. Res., Div. Mines, sheet 4.

Shattuck member (of Queen formation)

Permian (Guadalupian): New Mexico and Texas.

N. D. Newell and others, 1953, The Permian reef complex of the Guadalupe Mountains region, Texas and New Mexico: San Francisco, W. H. Freeman and Co., p. 15, 44, 45.

Shaunavon formation

Jurassic: Saskatchewan, Canada (subsurface).

J. R. Ower, 1953, Canadian Inst. Mining and Metallurgy Trans., v. 56, p. 397–398.
R. L. Milner and G. E. Thomas, 1954, Western Canada sedimentary basin: Tulsa, Okla., Am. Assoc. Petroleum Geologists, p. 260–262.

Shaw Mountain formation
Silurian(?): Vermont.
L. W. Currier and R. H. Jahns, 1941, Geol. Soc. America Bull., v. 52, no. 9, p. 1496–1501.

Shaw Point cyclothem
Pennsylvanian: Illinois.
C. L. Cooper, 1946, Ill. State Geol. Survey Bull., 70, p. 12 (footnote), 13.

Shea diabase
Precambrian: Arizona.
L. E. Reber, Jr., 1938, Ariz. Bur. Mines Bull. 145, Geol. Ser. 12, p. 58, 61.

Sheba group
Upper Cretaceous or Tertiary: British Columbia, Canada.
C. E. Cairnes, 1943, Canada Geol. Survey Paper 43–15, p. 8.

Shedroof conglomerate
Precambrian: Washington.
C. F. Park, Jr., and R. S. Cannon, Jr., 1943, U. S. Geol. Survey Prof. Paper 202, p. 6, 7, pl. 1.

Sheep Canyon basalt
Tertiary: Texas.
S. S. Goldich and M. A. Elms, 1946, (abs.) Geol. Soc. America Bull., v. 57, no. 12, pt. 2, p. 1197; 1949, v. 60, no. 7, p. 1153–1155.

Sheepeaters basalt
Tertiary: Wyoming.
R. E. Wilcox, 1944, Geol. Soc. America Bull., v. 55, no. 9, p. 1053–1054.

Sheffield shale (in McLeansboro formation)
Pennsylvanian: Illinois.
H. R. Wanless, 1939, Geol. Soc. America Special Paper 17, p. 102.

Shelby cyclothem
Pennsylvanian: Illinois.
C. L. Cooper, 1946, Ill. State Geol. Survey Bull. 70, p. 13.

Shellhammer Hollow formation
Mississippian: Pennsylvania.
Wallace de Witt, Jr., 1951, Geol. Soc. America Bull., v. 62, no. 11, p. 1362.

Shepody formation
Pennsylvanian: New Brunswick, Canada.
G. W. H. Norman, 1941, Canada Geol. Survey Map 647A.

Sherbrooke group
Silurian: Quebec, Canada.
H. C. Cooke, 1948, Canada Geol. Survey Map 911A; 1951, Mem. 257, p. 49–52, 78.

Sherbrooke series
Ordovician: Quebec, Canada.
R. C. Rowe, 1944, Canadian Mining Jour., v. 65, no. 1, p. 4 (map).

Sherridon group
Precambrian: Manitoba, Canada.
J. D. Bateman, 1944, Canada Geol. Survey Paper (Prelim. Map) 44–4.

Sherwood member (of Dunleith formation)
Middle Ordovician: Illinois.
J. S. Templeton and H. B. Willman, 1952, Tri-State Geol. Soc. Guidebook 16th Ann. Field Conf., p. 24, figs. 3, 12.

Shingle Hills formation
Lower Cretaceous: Texas.
V. E. Barnes, 1948, Tex. Univ. Bur. Econ. Geology Rept. Inv. 2, p. 5, 7, 8.

Ship Cove limestone
Mississippian: Newfoundland, Canada.
W. A. Bell, 1948, Canada Geol. Survey Bull. 10, p. 18.

Ship Mountain granite
Jurassic: California.
O. P. Jenkins, 1938, Geologic map of California (1:500,000): Calif. Dept. Nat. Res., Div. Mines, sheet 4.

Shippensburg formation
Middle Ordovician: Pennsylvania.
L. C. Craig, 1941, (abs.) Geol. Soc. America Bull., v. 52, no. 12, pt. 2, p. 1963–1964.

Shipps Creek shale member (of Wautubbee formation)
Eocene (Claiborne): Mississippi.
E. P. Thomas, 1942, Miss. State Geol. Survey Bull. 48, p. 62–65.

Shipshaw beds
Middle Ordovician: Quebec, Canada.
G. W. Sinclair, 1953, Am. Jour. Sci., v. 251, no. 12, p. 847, 849.

Shoal Arm formation
Middle Ordovician(?): Newfoundland, Canada.
G. H. Espenshade, 1937, Newfoundland Geol. Survey Bull. 6, p. 9.

Shoalrocks gneiss
Precambrian: Newfoundland, Canada.
J. O. Fuller, 1941, Newfoundland Geol. Survey Bull. 15, p. 14.

Shochary sandstone member (of Martinsburg formation)
Ordovician (lower Maysville): Pennsylvania.
Bradford Willard and A. B. Cleaves, 1939, Geol. Soc. America Bull., v. 50, no. 7, p. 1183–1184, 1196 (table 5).

Shoemaker formation
Triassic or older: British Columbia, Canada.
H. S. Bostock, 1940, Canada Geol. Survey Map 341A.

Shoemaker gravel
Pleistocene: California.
L. F. Noble, 1954, U. S. Geol. Survey Geol. Quadrangle Map GQ 50.

Shonektaw formation
Lower Mesozoic: British Columbia, Canada.
K. D. Watson and W. H. Matthews, 1944, British Columbia Dept. Mines Bull. 19, p. 19–20.

Shongaloo member (of Schuler formation)
Upper Jurassic: Subsurface in Louisiana, Arkansas, and Texas.
F. M. Swain, 1944, Am. Assoc. Petroleum Geologists Bull., v. 28, no. 5, p. 600–602.

Shoreham member (of Sherman Fall formation)
Middle Ordovician (Mohawkian): Vermont and New York, and Ontario, Canada.
G. M. Kay, 1937, Geol. Soc. America Bull., v. 48, no. 2, p. 264–267.

Shore Hill soil
Pleistocene: Bermuda Islands.
R. W. Sayles, 1931, Am. Acad. Arts and Sci. Proc., v. 66, no. 11, p. 393.

Short Mountain facies (of Fort Payne formation)
Lower Mississippian: Tennessee.
H. J. Klepser, 1937, Ohio State Univ. Abs. Doctors' Dissert. 24, p. 182.
P. B. Stockdale, 1939, Geol. Soc. America Special Paper 22, p. 54.

Shorts Ranch andesite
Tertiary: Arizona.
W. H. Brown, 1939, Geol. Soc. America Bull., v. 50, no. 5, p. 734–735.

Shubuta member (of Yazoo clay)
Eocene, upper (Jackson group): Alabama.
G. E. Murray, 1947, Am. Assoc. Petroleum Geologists Bull., v. 31, no. 10, p. 1838, 1839 (footnote).
I. D. Toulmin, P. E. LaMoreaux, and C. R. Lanphere, 1951, Ala. Geol. Survey Special Rept. 21, p. 120–122, pl. 3.

Shubuta Hill clay
Eocene (Jackson): Alabama.
R. H. Smith and others, 1944, *in* Southeastern Geol. Soc. [Guidebook] 1st Field Trip, [Geol. section of] Little Stave Creek, Clarke Co., Alabama.

Shuksan formation
Upper Jurassic: Washington.
C. E. Weaver, 1945, Am. Assoc. Petroleum Geologists Bull., v. 29, no. 10, p. 1391, 1392 (table 3).

Shukson formation
See Shuksan formation.

Shullsburg member (of Quimbys Mill formation)
Middle Ordovician: Illinois.
J. S. Templeton and H. B. Willman, 1952, Tri-State Geol. Soc. Guidebook 16th Ann. Field Conf., figs. 3, 9.

Shumway cyclothem (including Shumway limestone)
Pennsylvanian: Illinois.
J. M. Weller and W. A. Newton, 1938, Geol. Soc. America Proc., 1937, p. 329.
J. M. Weller and A. H. Bell *in* W. A. Newton, 1941, Ill. State Geol. Survey Rept. Inv. 76, p. 7.

Shunda member (of Rundle formation)
Mississippian: Alberta, Canada.
L. M. Clark, 1949, Am. Assoc. Petroleum Geologists Bull., v. 33, no. 4, p. 629.
F. W. Beales, 1950, Canada Geol. Survey Paper 50–27, p. 4, table 1.

Shurtz sandstone tongue (of Navajo sandstone)
Jurassic and Jurassic(?): Utah.
Paul Averitt and others, 1955, Am. Assoc. Petroleum Geologists Bull., v. 39, no. 12, p. 2520.

Sidewinder volcanic series

Triassic(?): California.

O. E. Bowen, Jr., *in* L. A. Wright and others, 1953, Calif. Jour. Mines and Geology, v. 49, nos. 1–2, pl. 2.

O. E. Bowen, Jr., 1954, Calif. Dept. Nat. Res., Div. Mines Bull. 165, p. 42–53.

Sidewinder Valley metavolcanics

Upper Paleozoic: California.

W. J. Miller, 1944, Calif. Jour. Mines and Geology, v. 40, no. 1, p. 100–102.

Sidney gravel

Pliocene: Nebraska, Colorado, and Kansas.

A. L. Lugn, 1938, Am. Jour. Sci., 5th ser., v. 36, no. 213, p. 224, 227; 1939, Geol. Soc. America Bull., v. 50, no. 8, p. 1261–1263.

Sidney shale member (of Markley formation)

Eocene, upper: California.

B. L. Clark and A. S. Campbell, 1942, Geol. Soc. America Special Paper 39, p. 9–10.

Sidney Flat shale member (of Markley formation)

See Sidney shale member (of Markley formation).

Sierra Madre limestone

Middle Cretaceous: Istmo de Tehuantepec, Mexico.

J. B. Gibson, 1936, Soc. Geol. Mexicana Bol., tomo 9, no. 5, p. 276, correlation chart.

Sierra Nevada formation

Oligocene(?): México and Distrito Federal, Mexico.

R. M. Berbeyer, 1953, Congreso Cient. Mexicano Mem., tomo 4, table 6.

Sierrita limestone

Tertiary: Yucatán, Mexico.

Karl Sapper, 1937, Mittelamerika, Handbuch der regionalen Geologie: Heidelberg, Band 8, Abt. 4a, Heft 29, p. 77, pl. 3.

Sierrite limestone

Lower Ordovician (Canadian): New Mexico.

V. C. Kelley, 1951, Am. Assoc. Petroleum Geologists Bull., v. 35, no. 10, p. 2201–2202.

V. C. Kelley and Caswell Silver, 1952, N. Mex. Univ. Pubs. in Geology 4, p. 42–45, fig. 4.

Sifton formation

Upper Cretaceous(?): British Columbia, Canada.

M. S. Hedley and S. S. Holland, 1941, British Columbia Dept. Mines Bull. 12, p. 42–43.

Signal Hill beds

Pleistocene, lower: California.

J. E. Eaton, 1943, Calif. Dept. Nat. Res., Div. Mines Bull. 118, pt. 2, p. 204, 205 [preprint 1941].

Signal Hill soil

Pleistocene: Bermuda Islands.

R. W. Sayles, 1931, Am. Acad. Arts and Sci. Proc., v. 66, no. 11, p. 395–396.

Sikanni formation

Lower Cretaceous: British Columbia, Canada.

C. O. Hage, 1944, Canada Geol. Survey Paper 44–30, p. 11–12.

Siletz River volcanic series

Eocene, lower: Oregon.

P. D. Snavely, Jr., and E. M. Baldwin, 1948, Am. Assoc. Petroleum Geologists Bull., v. 32, no. 5, p. 805–812.

Silliman Mount formation

Upper Ordovician: Northwest Territories (Baffin Island), Canada.

W. H. Twenhofel and others, 1954, Geol. Soc. America Bull., v. 65, no. 3, Chart 2, column 5d.

Silverado formation

Paleocene: California.

W. P. Woodring and W. P. Popenoe, 1945, U. S. Geol. Survey Oil and Gas Inv. Prelim. Chart 12.

Silver Coulee beds (of Polecat Bench formation)

Paleocene: Wyoming.

G. L. Jepsen *in* W. B. Scott, 1937, A history of land mammals in the Western Hemisphere: New York, Macmillan Co., p. 99; 1940, Am. Philos, Soc. Proc., v. 83, no. 2, p. 236–237.

Silver Creek glacial substage

Pleistocene (Wisconsin): Colorado.

D. F. Eschman, 1952, (abs.) Geol. Soc. America Bull., v. 63, no. 12, pt. 2, p. 1380; 1955, Jour. Geology, v. 63, no. 3, p. 205–206.

Silver King porphyry

Cretaceous(?): British Columbia, Canada.

R. Mulligan, 1952, Canada Geol. Survey Paper 52–13, p. 13.

Silver King quartz monzonite porphyry

Age not stated: Arizona.

M. N. Short and others, 1943, Ariz. Bur. Mines Bull. 151, Geol. Ser. 16, p. 42–43.

Silver Lake granite

Precambrian: Ontario, Canada.

W. D. Harding, 1951, Ontario Dept. Mines Ann. Rept., v. 56, pt. 6, p. 30.

Silver Mine granite

Precambrian: Missouri.

H. B. Graves, 1938, Acad. Sci. St. Louis Trans., v. 29, no. 5, p. 119.

Silver Run limestone

Precambrian(?): Maryland.

A. I. Jonas and G. W. Stose, 1938, Washington Acad. Sci. Jour., v. 28, no. 8, p. 346.

Silver Star granodiorite

Miocene: Washington.

W. M. Felts, 1939, Ohio Jour. Sci., v. 39, no. 6, p. 297, 302–303, 306–307, 315 (fig. 4).

Silverwood cyclothem (including Silverwood limestone)

Pennsylvanian: Indiana and Illinois.

J. W. Alexander, 1943, Ill. State Acad. Sci. Trans., v. 36, no. 2, p. 142, 143.

Simard beds

Middle Ordovician: Quebec, Canada.

G. W. Sinclair, 1953, Am. Jour. Sci., v. 251, no. 12, p. 843.

Simcoe group

Ordovician: Ontario, Canada (subsurface).

B. A. Liberty, 1955, Geol. Assoc. Canada Proc., v. 7, pt. 1, p. 144.

Simmler formation

Oligocene: California.

T. W. Dibblee, Jr., 1952, *in* AAPG, SEPM, SEG, Joint Ann. Meeting Guidebook, p. 82.

Simms Ridge shale

Ordovician: Newfoundland, Canada.

G. R. Heyl, 1937, Newfoundland Geol. Survey Bull. 8, p. 11–12.

Simpsonian series

Ordovician: Mississippi Valley region.

A. W. Grabau, 1937, Paleozoic formations in the light of the pulsation theory, v. 3, Cambrovician pulsation, pt. 2, Appalachian, Palaeocordilleran, Pre-Andean, Himalayan, and Cathaysian geosynclines: Peiping, China, University Press, Natl. Univ. Peking, p. 20, 282.

Sims group

Precambrian: Newfoundland (Labrador) and Quebec, Canada.

J. K. Gustafson and A. E. Moss, 1953, Mining Eng., v. 5, no. 6, p. 595 (table 1).

Simson Bay formation

Tertiary, lower: St. Martin, Netherlands and French West Indies.

G. A. F. Molengraaf, 1931, Leidsche Geol. Meded., Deel 5, p. 736.

Sinnifik strata

Miocene: West Greenland.

A. E. Nordenskiöld, 1872, Geol., Mag., v. 9, p. 459–460.

Sinsinawa member (of Wise Lake formation)

Middle Ordovician: Illinois.

J. S. Templeton and H. B. Willman, 1952, Tri-State Geol. Soc. Guidebook 16th Ann. Field Conf., figs. 3, 12.

Sinwa group

Jurassic(?): British Columbia, Canada.

F. A. Kerr, 1945, Canada Geol. Survey Paper (Prelim. Map) 45–30; 1948, Mem. 248, p. 20 (table), 34–35, geol. map.

Siparia beds

Pleistocene: Trinidad, British West Indies.

E. H. Cunningham-Craig, 1907, Trinidad Legislative Council Paper no. 60 of 1907, p. 7, 9.

H. H. Renz, 1942, 8th Am. Sci. Cong. Proc., v. 4, p. 563.

Sipe Springs formation

Pennsylvanian (Lampasas): Texas (subsurface).

M. G. Cheney, 1940, Am. Assoc. Petroleum Geologists Bull., v. 24, no. 1, p. 84–85.

Sisar black shale

Eocene, middle: California.

T. L. Bailey, 1947, Am. Assoc. Petroleum Geologists Bull., v. 31, no. 11, p. 1920 (fig. 3).

Siscoe granodiorite

Precambrian: Quebec, Canada.

H. C. Cooke, W. F. James, and J. B. Mawdsley, 1931, Canada Geol. Survey Mem. 166, p. 133.

Sisters varved clay

Pleistocene: British Columbia, Canada.

J. E. Armstrong and W. C. Brown, 1953, Canada Geol. Survey Water Supply Paper 322, p. 48, table.

Sites formation

Upper Cretaceous (Chico): California.

J. M. Kirby, 1942, (abs.) Am. Assoc. Petroleum Geologists Bull., v. 26, no. 5, p. 899; 1943, v. 27, no. 3, p. 284–285.

Sivier formation
Ordovician: Newfoundland, Canada.
G. R. Heyl, 1936, Newfoundland Geol. Survey Bull. 3, p. 7.

Sixmile Canyon formation
Upper Cretaceous: Utah.
E. M. Spieker, 1946, U. S. Geol. Survey Prof. Paper 205–D, p. 122, 128.

Skaergaard complex
Tertiary: Greenland.
L. R. Wager and W. A. Deer *in* L. R. Wager, 1937, Geog. Jour., v. 90, no. 5, p. 416.
L. R. Wager and W. A. Deer, 1939, Meddel. om Grønland, bind 105, nr. 4, p. 5–355.

Skamania andesite series
Miocene to Pliocene: Washington.
W. M. Felts, 1939, Ohio Jour. Sci., v. 39, no. 6, p. 301–302, 304–306, 315 (fig. 4).

Skeels Corners formation
Middle or Upper Cambrian (late Menevian or early Dresbachian): Vermont.
B. F. Howell, 1939, (abs.) Geol. Soc. America Bull., v. 50, no. 12, pt. 2, p. 1964.

Skeene member (of Whitehall formation)
See Skene dolomite member (of Whitehall formation).

Skeldal conglomerate
Late Tertiary to early Quaternary: Northeast Greenland.
Erdhart Frankl, 1953, Meddel. om Grønland, bind 113, nr. 6, p. 35–37, pl. 1.

Skene dolomite member (of Whitehall formation)
Upper Cambrian: New York.
R. R. Wheeler, 1941, (abs.) Geol. Soc. America Bull., v. 52, no. 12, pt. 2, p. 1938 1939; 1942, Am. Jour. Sci., v. 240, no. 7, p. 522, 523.

Skinner Brook member (of Stellarton series)
Pennsylvanian: Nova Scotia, Canada.
W. A. Bell, 1940, Canada Geol. Survey Mem. 225, p. 22–25 [1941].

Skookum formation
Precambrian: Washington.
M. C. Schroeder, 1952, Wash. Dept. Conserv. Devel., Div. Mines and Geology Bull. 40, p. 7, 9, 13–17.

Skookumchuck formation
Eocene, upper: Washington.
P. D. Snavely, Jr., and others, 1951, U. S. Geol. Survey Coal Inv. Map C 8, sheet 1.

Skooner Gulch basalt
Tertiary: California.
C. E. Weaver, 1943, Calif. Dept. Nat. Res., Div. Mines Bull. 118, pt. 3, p. 629–630.

Skukum volcanic rocks
Tertiary: Yukon, Canada.
J. O. Wheeler, 1952, Canada Geol. Survey Paper 52–30, p. 8.

Skunk Ranch conglomerate
Lower Cretaceous (Bisbee group): New Mexico.
S. G. Lasky, 1938, Am. Assoc. Petroleum Geologists Bull., v. 22, no. 5, p. 534, fig. 2.

Slagle trachytes
Quaternary: New Mexico.
Helen Stobbe, 1948, (abs.) Geol. Soc. America Bull., v. 59, no. 12, pt. 2, p. 1354–1355.
R. F. Collins, 1949, Geol. Soc. America Bull., v. 60, no. 6, p. 1033–1034, pl. 1.

Slate Creek limestone member (of Wellington formation)
Permian: Kansas.
W. A. Ver Wiebe, 1937, Wichita Municipal Univ. Bull., v. 12, no. 5, p. 8–10.

Slate Lake series
Precambrian: Ontario, Canada.
J. D. Bateman, 1940, Jour. Geology, v. 48, no. 6, p. 630.

Slater River formation
Upper Cretaceous: Northwest Territories (Mackenzie), Canada.
J. S. Stewart, 1944, Canadian Inst. Mining and Metallurgy Trans., v. 47, p. 163; 1945, Canada Geol. Survey Paper 45–29, p. 7.

Slaughter Creek member (of Pendleton formation)
Eocene, lower (Wilcox): Louisiana and Texas.
Richard Wasem and L. J. Wilbert, Jr., 1943, Jour. Paleontology, v. 17, no. 2, p. 186–187, fig. 4.

Slaven chert
Middle Devonian: Nevada.
James Gilluly, 1955, *in* Pacific Petroleum Geologist, v. 9, no. 8, p. 1.

Sligo formation
Lower Cretaceous: Subsurface in Louisiana, Arkansas, and Texas.
R. W. Imlay, 1940, Ark. Geol. Survey Inf. Circ. 12, p. 30–32.

Slims Valley silt
Recent: Yukon, Canada.
C. S. Denny, 1952, Geol. Soc. America Bull., v. 63, no. 9, p. 920, table 4.

Slippery Creek greenstone
Paleozoic(?): Virginia.
W. R. Brown, 1951, (abs.) Geol. Soc. America Bull., v. 62, no. 12, pt. 2, p. 1547; 1953, Ky. Geol. Survey, ser. 9, Special Pub. 1, [p. 9] (fig. 1).

Sliverville sand
Upper Devonian: Pennsylvania.
C. R. Fettke, 1941, Pa. Topog. and Geol. Survey Progress Rept. 125, p. 23–28.

Sloan member (of Marble Falls formation)
Pennsylvanian (Morrow): Texas.
F. B. Plummer, 1944, Tex. Univ. Bur. Econ. Geology Min. Res. Circ. 33, p. 8; 1945, Tex. Univ. Pub. 4401, p. 66–67.

Sloko group
Cretaceous or Tertiary: British Columbia, Canada.
J. D. Aitken, 1955, Canada Geol. Survey Paper (Prelim. Map) 54–9.

Sly Gap formation
Devonian: New Mexico.
F. V. Stevenson, 1941, (abs.) Oil and Gas Jour., v. 39, no. 47, p. 65.

Smackover formation
Upper Jurassic: Subsurface in Arkansas, Louisiana, Mississippi, and Texas.
D. H. Bingham, 1937, Am. Assoc. Petroleum Geologists Bull., v. 21, no. 8, p. 1068–1072.
W. B. Weeks, 1938, Am. Assoc. Petroleum Geologists Bull., v. 22, no. 8, p. 964–965.

Smarts Mountain granite
Upper Devonian: New Hampshire.
Katherine Fowler-Lunn and Louise Kingsley, 1937, Geol. Soc. America Bull., v. 48, no. 10, p. 1382.
C. A. Chapman, 1939, Geol. Soc. America Bull., v. 50, no. 1, p. 143.

Smetana sandstone
Eocene (Claiborne): Texas.
A. A. L. Mathews, 1950, Tex. Eng. Expt. Sta. Research Rept. 14, p. 1–3, geol. map.

Smith Corner member (of Lockatong formation)
Triassic (Newark): Pennsylvania.
D. B. McLaughlin, 1948, Mich. Acad. Sci. Arts and Letters Papers, v. 32, p. 298, 299.

Smiths Hole conglomerate
Devonian(?) or Carboniferous(?): Newfoundland, Canada.
W. H. Twenhofel, 1947, Am. Jour. Sci., v. 245, no. 2, p. 92.

Smoky group
Upper Cretaceous: British Columbia, Canada.
F. H. McLearn and J. F. Henderson, 1944, Canada Geol. Survey Paper 44–2, p. 3.

Snakes Bight shale
Mississippian: Newfoundland, Canada.
A. O. Hayes and Helgi Johnson, 1938, Newfoundland Geol. Survey Bull. 12, p. 11.

Snare group
Precambrian (Proterozoic): Northwest Territories (Mackenzie), Canada.
C. S. Lord, 1939, Canada Geol. Survey Paper 39–5, p. 10–12.

Sneech Pond schist
Precambrian(?): Rhode Island and Massachusetts.
Alonzo Quinn, R. G. Ray, and W. L. Seymour *in* Alonzo Quinn and others, 1948, R. I. Port and Indus. Devel. Comm. Geol. Bull. 3, p. 12, geol. map.

Sneed andesite
Tertiary, middle(?): Arizona.
James Gilluly, 1937, Ariz. Univ. Bull., v. 8, no. 1, p. 45–46.

Snelson granite
Precambrian: Georgia.
D. F. Hewett and G. W. Crickmay, 1937, U. S. Geol. Survey Water-Supply Paper 819, p. 26–27.

Snider series
Precambrian (Keewatin): Ontario, Canada.
Anonymous, 1937, Canadian Mining Jour., v. 58, no. 11, p. 592.

Snipes conglomerates
Miocene, upper, or Pliocene: Oregon.
R. C. Treasher, 1937, Geol. Soc. Oreg. Country News Letter, v. 3, no. 20, p. 218–219.

Snooks Arm series
Ordovician: Newfoundland, Canada.
A. K. Snelgrove, 1931, Canadian Mining and Metall. Bull. 228, p. 485, 486.

Snow group
Precambrian: Manitoba, Canada.
J. M. Harrison, 1949, Canada Geol. Survey Mem. 250, p. 9–14.

Snowblind Bay formation
Devonian: Northwest Territories (Cornwallis Island), Canada.
R. Thorsteinsson and Y. O. Fortier, 1954, Canada Geol. Survey Paper 53–24, p. 12–13.

Snowcrest granite
Eocene: Montana.
Robert Scholten, K. A. Keenmon, and W. O. Kupsch, 1955, Geol. Soc. America Bull., v. 66, no. 4, p. 372, pl. 1.

Snowden member (of Harpers formation)
Lower Cambrian: Virginia.
R. O. Bloomer and H. J. Werner, 1955, Geol. Soc. America Bull., v. 66, no. 5, p. 596.

Snowshoe formation
Middle Jurassic: Oregon.
R. L. Lupher, 1941, Geol. Soc. America Bull., v. 52, no. 2, p. 227, 259–263.

Snowshoe formation
Precambrian and/or Cambrian: British Columbia, Canada.
S. S. Holland, 1954, British Columbia Dept. Mines Bull. 34, p. 22–23.

Snows Pond formation
Precambrian (Upper Proterozoic): Newfoundland, Canada.
R. D. Hutchinson, 1954, Canada Geol. Survey Mem. 275, p. 18–20.

Snowy Range formation
Upper Cambrian: Montana.
Erling Dorf and Christina Lochman, 1938, (abs.) Geol. Soc. America Proc. 1937, p. 275–276.

Snyder member (of Benner limestone)
Middle Ordovician (Mohawkian): Pennsylvania.
G. M. Kay, 1941, (abs.) Geol. Soc. America Bull., v. 52, no. 12, pt. 2, p. 1969.

Soap Creek bentonite bed (in Frontier formation)
Upper Cretaceous: Montana and Wyoming.
P. W. Richards and C. P. Rogers, Jr., 1951, U. S. Geol. Survey Oil and Gas Inv. Map OM 111, sheet 2.

Soda Lake formation
Miocene, lower: California.
T. W. Dibblee, Jr., 1952, *in* AAPG, SEPM, SEG, Joint Ann. Meeting Guidebook, p. 82.

Soebi Blanco conglomerate
[Cretaceous and/or Tertiary]: Bonaire, Netherlands West Indies.
P. J. Pijpers, 1931, Leidsche Geol. Meded., Deel 5, p. 707.

Sokoman formation
Precambrian (Proterozoic): Quebec and Newfoundland (Labrador), Canada.
H. R. Rice, 1949, Canadian Mining Jour., v. 70, no. 9, p. 71–72.
J. M. Harrison, 1952, Canada Geol. Survey Paper 52–20, p. 10–11.

Soldado formation
Eocene, upper: Trinidad, British West Indies.
R. A. Liddle, [1928], The geology of Venezuela and Trinidad: Fort Worth, Tex., J. P. MacGowan, p. 225–233.

Soldado formation
[Paleocene] (Midway): Trinidad, British West Indies.
C. J. Maury, 1925, Science, new ser., v. 61, no. 1567, p. 43.

Soldiers limestone member (of Big Saline formation)
See Soldiers Hole member (of Big Saline formation).

Soldiers Hole member (of Big Saline formation)
Lower Pennsylvanian: Texas.
F. B. Plummer, 1947, Jour. Geology, v. 55, no. 3, pt. 2, p. 197, 198.

Solis limestone
Upper Cretaceous: Tamaulipas, Mexico.
Emil Böse, 1927, Tex. Univ. Bull. 2748, p. 70–71.

Solitude limestone
Precambrian (Kwaguntan): Arizona.
Charles Keyes, 1938, Pan-Am. Geologist, v. 70, no. 2, p. 107, 113.

Solomon formation
Upper Cretaceous: Kansas.
R. C. Moore and K. K. Landes, 1937, Geologic map of Kansas [1:500,000]: Kans. State Geol. Survey.

Solomon sandstone member (of Brazeau formation)
Upper Cretaceous: Alberta, Canada.
A. H. Lang, 1944, Canada Geol. Survey Paper 44–1, p. 6–7.

Soma gabbro
Precambrian (Archean): Quebec, Canada.
W. W. Weber, 1951, Quebec Dept. Mines Prelim. Rept. 255, p. 12.

Sombrerito formation
Oligocene, lower to middle: Dominican Republic.
W. M. Small, 1948, Seismol, Soc. America Bull., v. 38, no. 1, p. 26.
P. J. Bermudez, 1949, Cushman Lab. Foram. Research Special Pub. 25, p. 21.

Somerset eolianite
Pleistocene: Bermuda Islands.
R. W. Sayles, 1931, Am. Acad. Arts and Sci. Proc., v. 66, no. 11, p. 396.

Somerset limestone member (of White Limestone formation)
Eocene, upper: Jamaica, British West Indies.
V. A. Zans, H. R. Versey, and J. B. E. Williams *in* V. A. Zans, 1935, Jamaica Geol. Survey Dept. Ann. Rept. 1953–54, p. 4.

Sonneau Brook member (of Gaspe sandstone)
Devonian: Quebec, Canada.
E. M. Kindle, 1938, Bull. Am. Paleontology, v. 24, no. 82, p. 66 (32).

Sonoita group
Upper Cretaceous: Arizona.
A. A. Stoyanow, 1937, (abs.) Geol. Soc. America Proc. 1936, p. 297 (table); 1949, Geol. Soc. America Mem. 38, p. 59.

Sonoma Range formation
Ordovician(?): Nevada.
H. G. Ferguson, S. W. Muller, and R. J. Roberts, 1951, Geology of the Winnemucca quadrangle, Nevada: U. S. Geol. Survey Geol. Quadrangle Map [GQ 11].

Sonson limestone
Pleistocene: Mariana Islands (Tinian).
Risaburo Tayama, 1939, Correlation of the strata of the South Sea Islands: Geol. Soc. Japan Jour., v. 46, no. 549, p. 346 (correlation table) [English translation in library of U. S. Geol. Survey); 1952, Coral reefs in the South Seas: Japan Hydrog. Office Bull., v. 11, p. 57, table 4 [English translation in library of U. S. Geol. Survey, p. 68].

Sops Island member (of Natlins Cove formation)
Silurian: Newfoundland, Canada.
G. R. Heyl, 1937, Newfoundland Geol. Survey Bull. 8, p. 12.

Soquel member (of Puente formation)
Miocene, upper: California.
J. E. Schoellhamer and others, 1954, U. S. Geol. Survey Oil and Gas Inv. Map OM 154.

Sorento cyclothem
Pennsylvanian: Illinois.
H. R. Wanless, 1955, Am. Assoc. Petroleum Geologists Bull., v. 39, no. 9, p. 1764 (table 2).

Sosa Hill basalt
Miocene, lower: Panama Canal Zone.
S. M. Jones, 1950, Geol. Soc. America Bull., v. 61, no. 9, p. 898 (correlation table).

Sosan formation
Precambrian (Proterozoic): Northwest Territories (Mackenzie), Canada.
C. H. Stockwell, 1936, Canada Geol. Survey Map 377A.

Sound Island formation
Middle(?) Cambrian: Newfoundland, Canada.
E. R. Rose, 1948, Newfoundland Geol. Survey Bull. 32, pt. 2, p. 41, 44.

Souris River formation
Devonian: Subsurface in North Dakota, and Saskatchewan and Manitoba, Canada.
W. M. Laird, 1953, Interstate Oil Compact Quart. Bull., v. 12, no. 2, p. 74.

Southampton eolianite
Pleistocene: Bermuda Islands.
R. W. Sayles, 1931, Am. Acad. Arts and Sci. Proc., v. 66, no. 11, p. 396.

South Brook biotite-quartz-monzonite
Devonian(?): Newfoundland, Canada.
H. J. MacLean, 1947, Newfoundland Geol. Survey Bull. 22, p. 8.

South Canyon Creek dolomite member (of Maroon formation)
Permian: Colorado.
N. W. Bass and S. A. Northrop, 1950, Am. Assoc. Petroleum Geologists Bull., v. 34, no. 7, p. 1540–1551.

Southern Arm limestone
Lower Ordovician (Canadian): Newfoundland, Canada.
J. R. Cooper, 1937, Newfoundland Geol. Survey Bull. 9, p. 6–7.

Southesk formation
Devonian: Alberta, Canada.
D. J. McLaren, 1955, Canada Geol. Survey Bull. 35, p. 19–21.

South Flat formation
Upper Cretaceous (Montanan): Utah.
R. E. Hunt, 1954, Am. Assoc. Petroleum Geologists Bull., v. 38, no. 1, p. 118–128.

South Mountain granite
Age not stated: Nova Scotia, Canada.
R. F. Flint, 1951, Geol. Soc. America Bull., v. 62, no. 1, p. 30.

South Platte formation
Lower Cretaceous: Colorado.
K. M. Waagé, 1955, U. S. Geol. Survey Prof. Paper 274–B, p. 27–28, 42.

South Range member (of Virginia formation)
Precambrian (Animikie): Minnesota.
F. F. Grout and J. F. Wolff, 1955, Minn. Geol. Survey Bull. 36, p. 3, 4, 7, 56, pl. 6.

South Tyler formation
Cretaceous (Comanche): Texas (subsurface).
R. T. Hazzard, B. W. Blanpied, and W. C. Spooner, [1947], Shreveport Geol. Soc. 1945 Ref. Rept., v. 2, p. 475, 476, 477.

South Wales member (of Perrysburg formation)
Upper Devonian: New York.
J. F. Pepper and Wallace de Witt, Jr., 1951, U. S. Geol. Survey Oil and Gas Inv. Chart OC 45.

South Wells limestone member (of Cherry Canyon formation)
Permian: Texas and New Mexico.
P. B. King *in* A. K. Miller and W. M. Furnish, 1940, Geol. Soc. America Special Paper 26, p. 9.
P. B. King. 1942, Am. Assoc. Petroleum Geologists Bull., v. 26, no. 4, p. 580, pl. 2.

Soyatal formation
Upper Cretaceous: Queretaro, Mexico.
B. W. Wilson, J. P. Hernández M., and E. Meave T., 1955, Soc. Geol. Mexicana Bol., tomo 18, no. 1, p. 3, fig. 2.

Spadra felsophyre
Miocene, middle, or older: California.
J. S. Shelton, 1955, Geol. Soc. America Bull., v. 66, no. 1, p. 55–56, pl. 1.

Sparks schist
Precambrian: Georgia.
D. F. Hewett and G. W. Crickmay, 1937, U. S. Geol. Survey Water-Supply Paper 819, p. 27.

Spar Mountain sandstone (in Fredonia member of Ste. Genevieve formation)
Mississippian: Illinois.
F. E. Tippie, 1945, Am. Assoc. Petroleum Geologists Bull., v. 29, no. 11, p. 1658–1659.

Spaulding quartz diorite
Upper Devonian(?) (New Hampshire plutonic series): New Hampshire.
Katherine Fowler-Billings, 1949, Geol. Soc. America Bull., v. 60, no. 8, p. 1250, 1266–1268.

Spearing group
Jurassic or Cretaceous: British Columbia, Canada.
H. M. A. Rice, 1945, Canada Geol. Survey Paper (Prelim. Map) 45–5.

Spear Point formation
Mississippian: Newfoundland, Canada.
G. R. Heyl, 1937, Newfoundland Geol. Survey Bull. 8, p. 13–14.

Spears member (of Datil formation)
(?)Miocene, upper: New Mexico.
W. H. Tonking, 1954, Dissert. Abs., v. 14, no. 2, p. 340; [1954?], Geologic map and sections of the Puertecito quadrangle, New Mexico (1 : 48,000) : N. Mex. Bur. Mines Min. Res. [preprint?] Bull. 41, pl. 1.

Specimen Mountain volcanics
Age not stated: Colorado.
E. E. Wahlstrom, 1940, (abs.) Geol. Soc. America Bull., v. 51, no. 12, pt. 2, p. 1951.

Speeds limestone member (of Sellersburg limestone)
Middle Devonian: Indiana.
D. G. Sutton and A. H. Sutton, 1937, Jour. Geology, v. 45, no. 3, p. 331.

Speedwell member (of Eramosa formation)
Middle Silurian (Niagaran): Ontario, Canada.
E. W. Shaw, 1937, Royal Canadian Inst. Trans., v. 21, pt. 2, p. 339.

Speers Ferry formation
Middle Ordovician (Chazyan): Tennessee.
E. O. Ulrich, 1939, Kans. Geol. Soc. Guidebook 13th Ann. Field Conf., p. 106.
B. N. Cooper, 1945, Jour. Geology, v. 53, no. 4, p. 265.

Spencer formation
Eocene, upper: Oregon.
C. W. Merriam and F. E. Turner, 1937, Calif. Univ. Pubs., Dept. Geol. Sci. Bull., v. 24, p. 98 (table 1).
F. E. Turner, 1938, Geol. Soc. America Special Paper 10, p. 23–24.

Spencer Canyon member (of Muav formation)
Lower and/or Middle Cambrian: Arizona.
E. D. McKee, 1945, Carnegie Inst. Washington Pub. 563, p. 14, 29, 94–95.

Spencer Hill volcanics
Mississippian(?): Rhode Island.
A. W. Quinn, 1952, Bedrock geology of the East Greenwich quadrangle, Rhode Island: U. S. Geol. Survey Geol. Quadrangle Map [GQ 17].

Spence River shale
Upper Devonian: Subsurface in Northwest Territories (Mackenzie), Alberta, and British Columbia, Canada.
C. W. Hunt, 1954, Am. Assoc. Petroleum Geologists Bull., v. 38, no. 11, p. 2300-2301.

Spiller sand member (of Crockett formation)
Eocene, middle (Claiborne): Texas.
H. B. Stenzel, 1938, Tex. Univ. Bur. Econ. Geol. Pub. 3818, p. 20, 125, 149–150 [1939].

Spiral Creek formation
Lower Cambrian(?): Northeast Greenland.
Christian Poulsen, 1930, Meddel. om Grønland, bind 74, nr. 12, p. 307.

Spirit River formation
Lower Cretaceous: Alberta, Canada (subsurface).
P. C. Badgley, 1952, Canada Geol. Survey Paper 52–11, p. 8–9.

Split Mountain formation
Miocene, lower and middle: California.
L. A. Tarbet and W. H. Holman, 1944, (abs.) Am. Assoc. Petroleum Geologists Bull., v. 28, no. 12, p. 1781, 1782.

Spoon Cove formation
Precambrian (Proterozoic) or Lower Cambrian: Newfoundland, Canada.
W. H. Twenhofel, 1947, Am. Jour. Sci., v. 245, no. 2, p. 92.

Spotted Ridge formation
Pennsylvanian: Oregon.
C. W. Merriam, 1942, Jour. Paleontology, v. 16, no. 3, p. 372.

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Spottedtail member (of Sheep Creek formation)
Miocene (Hemingford): Nebraska.
M. K. Elias, 1942, Geol. Soc. America Special Paper 41, p. 128–129, pl. 17.

Spout Spring oolite (in Bangor limestone)
Mississippian: Alabama.
W. B. Jones, 1939, Econ. Geology, v. 34, no. 5, p. 575, 578.

Spraberry sandstone
Permian (Leonard): Texas (subsurface).
T. S. Jones and others, 1949, W. Tex. Geol. Soc. Strat. Problems Comm., Sept. 1949.
Lamar McLennan, Jr., and H. W. Bradley, 1951, Am. Assoc. Petroleum Geologists Bull., v. 35, no. 4, p. 899–903, 904–908.

Sprague glacial substage
Pleistocene (Wisconsin): Colorado, Wyoming, and New Mexico.
L. L. Ray, 1939, (abs.) Geol. Soc. America Bull., v. 50, no. 12, pt. 2, p. 2007; 1940, v. 51, no. 12, pt. 1, p. 1862–1863.

Spray formation
Upper Cretaceous: British Columbia, Canada.
J. L. Usher, 1952, Canada Geol. Survey Bull. 21, p. 29.

Springbrook formation
Eocene: British Columbia, Canada.
H. S. Bostock, 1940, Canada Geol. Survey Map 341A.

Spring Brook shale member (of Ludlowville formation)
Middle Devonian: New York.
R. G. Sutton, 1951, Rochester Acad. Sci. Proc., v. 9, no. 5–6, p. 365, 366.

Spring Creek deposits
Pleistocene: Texas.
G. L. Evans and G. E. Meade, 1945, Texas Univ. Bur. Econ. Geology Pub. 4401, p. 495.

Springdale formation
Silurian(?): Newfoundland, Canada.
G. H. Espenshade, 1937, Newfoundland Geol. Survey Bull. 6, p. 11–12.

Springdale sandstone member (of Chinle formation in Utah; of Moenave formation in Arizona)
Upper Triassic(?): Utah and Arizona.
H. E. Gregory and N. C. Williams, 1947, Geol. Soc. America Bull., v. 58, no. 3, p. 228.

Springfield granodiorite
Age unknown: Pennsylvania.
A. W. Postel, 1940, (abs.) Geol. Soc. America Bull., v. 51, no. 12, pt. 2, 2004–2005; 1941, Acad. Nat. Sci. Philadelphia Proc., v. 92, p. 125–133.

Springfield Center member (of Onondaga formation)
Middle Devonian; New York.
R. E. Stevenson, 1949, N. Y. State Sci. Service Rept. Inv. 3, p. 6–7.

Springvale formation
Miocene, upper: Trinidad, British West Indies.
R. J. L. Guppy, 1912, Agr. Soc. Trinidad and Tobago Proc., v. 12, pts. 1–2, p. 29–32, cross section facing p. 30; Reprint, 1921, Bull. Am. Paleontology, v. 8, no. 35, p. 321 (173)–324 (176), pl. 14 (10).
H. G. Kugler, 1936, Am. Assoc. Petroleum Geologists Bull., v. 20, no. 4, p. 1447, 1451 (chart).

Springvalean stage
Miocene, upper: Trinidad, British West Indies.
C. J. Maury, 1931, Science, v. 73, no. 1880, p. 43.

Spruce Pine alaskite
Age not stated: North Carolina.
C. E. Hunter and P. W. Mattocks, 1936, TVA Div. Geology Bull. 4, p. 10–11.

Spyglass Cove formation
Precambrian (Proterozoic) or Lower Cambrian: Newfoundland, Canada.
W. H. Twenhofel, 1947, Am. Jour. Sci., v. 245, no. 2, p. 92.

Squall Lake granite
Precambrian: Manitoba, Canada.
J. M. Harrison, 1949, Canada Geol. Survey Mem. 250, p. 19.

Square Peak volcanic series
Tertiary: Texas.
R. M. Huffington, 1943, Geol. Soc. America Bull., v. 54, no. 7, p. 992, 1027, 1038.

Squaw Creek diatomite member (of Yakima basalt)
[Miocene]: Washington.
J. H. Mackin, 1947 (abs.) Northwest Science, v. 21, no. 1, p. 33.

Stack Rock limestone
Cretaceous (Cenomanian): Trinidad, British West Indies.
H. H. Renz, 1942, 8th Am. Sci. Cong. Proc., v. 4, p. 524, chart facing p. 572.

Stadacoma tuffs
Precambrian: Quebec, Canada.
W. N. Ingham and S. H. Ross, 1947, Quebec Dept. Mines Prelim. Rept. 205, pt. 1, p. 15.

Staendebach member (of Tanyard formation)
Lower Ordovician: Texas.
V. E. Barnes and P. E. Cloud, Jr., 1945, Tex. Univ. Bur. Econ. Geology Min. Res. Circ. 34, p. 19–27.

Staff House flow (in Yellowknife group)
Precambrian: Northwest Territories (Mackenzie), Canada.
C. E. G. Brown and A. S. Dadson, 1953, Canadian Inst. Mining and Metallurgy Trans., v. 56, p. 84.

Stanaker formation
Upper Triassic: Utah.
H. D. Thomas and M. L. Krueger, 1946, Am. Assoc. Petroleum Geologists Bull., v. 30, no. 8, pt. 1, p. 1271–1274.

Standing Pond volcanics
Middle Ordovician(?): Vermont and New Hampshire.
C. G. Doll [1945?], Vt. State Geologist 24th Rept., p. 17.

Stanton facies (of New Providence formation)
Lower Mississippian: Kentucky.
P. B. Stockdale, 1939, Geol. Soc. America Special Paper, p. 121–125.

Stapp conglomerate member (of Union Valley formation)
Pennsylvanian (Morrow): Oklahoma.
B. H. Harlton, 1938, Am. Assoc. Petroleum Geologists Bull., v. 22, no. 7, p. 893–895.

Starboard gneiss
Precambrian: Newfoundland, Canada.
J. O. Fuller, 1941, Newfoundland Geol. Survey Bull. 15, p. 12–13.

Stark formation
Precambrian (Proterozoic): Northwest Territories (Mackenzie), Canada.
C. H. Stockwell, 1936, Canada Geol. Survey Map 377A.

Stark quartz syenitic complex
Precambrian: New York.
A. F. Buddington, 1948, Geol. Soc. America Mem. 28, p. 24, 25–28.

Starkey tongue (of Sherburne formation)
Upper Devonian: New York.
W. L. Grossman, 1944, Geol. Soc. America Bull., v. 55, no. 1, p. 66–67.

Star Mountain rhyolite
Tertiary: Texas.
G. K. Eifler, Jr., 1951, Geol. Soc. America Bull., v. 62, no. 4, p. 345, pl. 1.

State Bridge siltstone member (of Maroon formation)
Permian(?): Colorado.
C. F. Bassett, 1939, Geol. Soc. American Bull., v. 50, no. 12, pt. 1, p. 1864.
H. F. Donner, 1949, Geol. Soc. America Bull., v. 60, no. 8, p. 1228–1229.

State Farm gneiss
Precambrian: Virginia.
C. B. Brown, 1937, Va. Geol. Survey Bull. 48, p. 13–14.

Stearns magma series
Precambrian (middle Keweenawan): Minnesota.
M. S. Woyski, 1949, Geol. Soc. America Bull., v. 60, no. 6, p. 1002, 1005, pl. 1.

Steels Knob chert facies (of Muldraugh formation)
Lower Mississippian: Kentucky.
P. B. Stockdale, 1939, Geol. Soc. America Special Paper 22, p. 210–211.

Steen River formation
Middle Devonian: Subsurface in Alberta, British Columbia, and Northwest Territories (Mackenzie), Canada.
C. W. Hunt, 1954, Am. Assoc. Petroleum Geologists Bull., v. 38, no. 11, p. 2293–2297.

Steep Gully member (of Foley formation)
Pliocene: Louisiana (subsurface).
P. H. Jones *in* P. H. Jones, A. N. Turcan, Jr., and H. E. Skibitzke, 1954, La. Dept. Conserv. Geol. Bull. 30, p. 59–60.

Stenørkenen phyllites
Precambrian (Greenlandian): North Greeland.
Erdhart Frankl, 1955, Meddel. om Grønland, bind 103, nr. 7, p. 13, 16, 32.

Stetson Brook limestone
Cambro-Ordovician(?): Maine.
L. W. Fisher, 1936, Am. Mineralogist, v. 21, no. 5, p. 323.

Stettler member (of Wabamun formation)
Upper Devonian: Alberta, Canada (subsurface).
J. S. Wonfor and J. M. Andrichuck, 1953, Alberta Soc. Petroleum Geologists News Bull., v. 1, no. 9, p. 3, 5.

Steuben limestone member (of Cobourg formation)
Middle Ordovician (Mohawkian): New York.
G. M. Kay, 1943, Am. Jour. Sci., v. 241, no. 10, p. 598, 601–602.

Stewart Brook formation
Ordovician: Nova Scotia, Canada.
W. A. Bell, 1940, Canada Geol. Survey Mem. 225, p. 6–7 [1941].

Stewart Valley limestone
Mississippian: California.
J. C. Hazzard, 1937, Calif. Jour. Mines and Geology, v. 33, no. 4, p. 275 (fig. 3a), 332–334.

Stice cyclothem
Pennsylvanian (lower Desmoinesian): Kansas.
R. C. Moore, 1949, Kans. State Geol. Survey Bull. 83, p. 43, 45.

Stikine lavas
Quaternary: British Columbia, Canada.
F. A. Kerr, 1948, Canada Geol. Survey Mem. 246, p. 39.

Stillaquamish sand member (of Vashon drift)
Pleistocene: Washington.
R. C. Newcomb, 1952, U. S. Geol. Survey Water-Supply Paper 1135, p. 27, pl. 1.

Stillman member (of Grand Detour formation)
Middle Ordovician: Illinois.
J. S. Templeton and H. B. Willman, 1952, Tri-State Geol. Soc. Guidebook 16th Ann. Field Conf., fig. 3.

Stillwater glacial stage
Pleistocene (Illinoian): Colorado.
R. L. Ives, 1937, (abs.) Colo. Univ. Studies, v. 25, no. 1, p. 75; 1938, Geol. Soc. America Bull., v. 49, no. 7, p. 1056.

Stillwater Creek member (of Cowlitz formation)
Eocene, upper: Washington.
D. A. Henriksen, 1954, Dissert. Abs., v. 14, no. 12, p. 2316.

Stobie series
Precambrian (pre-Huronian): Ontario, Canada.
H. C. Cooke, 1940, Royal Soc. Canada Trans., sec. 4, v. 35, p. 8.

Stock flow
Precambrian: Northwest Territories (Mackenzie), Canada.
J. F. Henderson and I. C. Brown, 1950, Canadian Inst. Mining and Metallurgy Trans., v. 53, p. 418.

Stockade Beaver shale member (of Sundance formation)
Upper Jurassic: Wyoming and South Dakota.
R. W. Imlay, 1947, Am. Assoc. Petroleum Geologists Bull., v. 31, no. 2, p. 251–255.

Stoddard member (of Oneota formation)
Lower Ordovician: Wisconsin.
G. O. Raasch, 1952, Ill. Acad. Sci. Trans., v. 45, p. 90–91, 94.

Stoddard Canyon quartz monzonite
Age unknown: California.
K. J. Hsu, 1955, Calif. Univ. Dept. Geol. Sci. Bull., v. 30, no. 4, p. 301–302, map 1.

Stoddart formation
Upper Paleozoic: British Columbia, Canada (subsurface).
A. T. C. Rutgers, 1955, (abs.) Am. Assoc. Petroleum Geologists and Alberta Soc. Petroleum Geologists, Program Western Canada Regional Meeting and 5th Ann. Field Trip, p. 21.

Stoke granite
Pre-Ordovician(?) : Quebec, Canada.
G. V. Douglas, 1941, Quebec Dept. Mines Geol. Rept. 8, p. 17–18.

Stone Coal Bluff lignite (in Slaughter Creek member of Pendleton formation)
Eocene, lower (Wilcox) : Louisiana and Texas.
Richard Wasem and L. J. Wilbert, Jr., 1943, Jour. Paleontology, v. 17, no. 2, p. 187, fig. 4.

Stonehengian division
Lower Ordovician (Ozarkian) : Eastern United States.
A. W. Grabau, 1937, Paleozoic formations in the light of the pulsation theory, v. 3, Cambrovician pulsation, pt. 2, Appalachian, Palaeocordilleran, Pre-Andean, Himalayan and Cathaysian geosynclines : Peiping, China, University Press, Natl. Univ. Peking, p. 10, 13, 15, 282.

Stone Mill member (of Ludlowville formation)
Middle Devonian : New York.
G. A. Cooper and A. S. Warthin, 1941, Washington Acad. Sci. Jour., v. 31, no. 6, p. 259.

Stone Mountain granite
Permian(?) : Georgia.
T. L. Watson, 1902, Ga. Geol. Survey Bull. 9–A, p. 114–119.
L. A. Herrmann, 1954, Ga. Geol. Survey Bull. 61, p. 29–32, 55–61, 75, 79.

Stoneville member (of Fox Hills sandstone)
Cretaceous : South Dakota.
W. V. Searight, 1934, S. Dak. State Geol. Survey Rept. Inv. 22, p. 8–11.

Stoneville Flats limestone (in Belle Fourche shale)
Upper Cretaceous : Montana and Wyoming.
M. N. Bramlette and W. W. Rubey *in* R. C. Moore, 1949, Geol. Soc. America Mem. 39, p. 27 (fig. 18).

Stony Clove sandstone member (of Katsberg red beds)
Upper Devonian : New York.
G. H. Chadwick, 1940, N. Y. State Geol. Assoc. 16th Ann. Meeting Field Guide Leaflets, p. 2; 1944, N. Y. State Mus. Bull. 336, p. 130–135 [1946].

Stony Creek basalt
Pliocene : California.
O. P. Jenkins, 1938, Geologic map of California (1 : 500,000) : Calif. Dept. Nat. Res., Div. Mines, sheet 4.

Stony Creek formation
Middle Ordovician (Mohawkian) : Quebec, Canada.
J. A. Dresser and T. C. Denis, 1944, Quebec Dept. Mines Geol. Rept. 20, v. 2, p. 267.

Stony Hollow member (of Marcellus formation)
Devonian : New York.
G. A. Cooper, 1941, Washington Acad. Sci. Jour., v. 31, no. 5, p. 179–180.

Stony Mountain diorite
Miocene, upper : Colorado.
McClelland Dings, 1941, Geol. Soc. America Bull., v. 52, no. 5, p. 698, 712–714.

Stony Mountain shale member (of Stony Mountain formation)
Upper Ordovician (Richmond) : Manitoba, Canada.
V. J. Okulitch, 1943, Royal Soc. Canada Trans., sec. 4, v. 37, p. 60.

Store Fjord gneisses
Lower Paleozoic (Caledonian?): Northeast Greenland.
E. H. Kranck, 1935, Meddel. om Grønland, bind 95, nr. 7, p. 57–58.

Store Fjord granite
Lower Paleozoic (Caledonian): Northeast Greenland.
E. H. Kranck, 1935, Meddel. om Grønland, bind 95, nr. 7, p. 13, pl. 3.

Storm Creek formation
Pennsylvanian to Permian: Alberta, Canada.
G. O. Raasch, 1954, Carboniferous section at Highwood Pass with correlations to Banff and Mount Head: Calgary, Alberta, Canadian Strat. Service Ltd., [Strat. log].

Stormont limestone member (of Pierson Point shale)
Pennsylvanian (Virgilian): Kansas.
H. G. O'Connor, 1953, Kans. State Geol. Survey [Repts.], v. 12, pt. 1, p. 18–19, pl. 1.

Story formation
Pennsylvanian (Missouri series): New Mexico.
M. L. Thompson, 1942, N. Mex. State Bur. Mines Min. Res. Bull. 17, p. 27, 65–66.

Stover member (of Benner limestone)
Middle Ordovician (Mohawkian): Pennsylvania.
G. M. Kay, 1941, (abs.) Geol. Soc. America Bull., v. 52, no. 12, pt. 2, p. 1969.

Stowe formation
Ordovician: Vermont.
P. H. Osberg, 1952, Vt. Geol. Survey Bull. 5, p. 65–66, 116.

Strain shale member (of Lykins formation)
Triassic: Colorado.
L. W. LeRoy, 1946, Colo. School Mines Quart., v. 41, no. 2, p. 31, 42–44.

Strange formation
Lower Ordovician (Arbuckle): Oklahoma.
C. E. Decker, 1939, Geol. Soc. America Bull., v. 50, no. 7, p. 1319, table 1.

Strangway granite
Precambrian (post-Keewatin): Quebec, Canada.
W. W. Longley, 1946, Quebec Dept. Mines Geol. Rept. 24, p. 11.

Strasburg cyclothem (including Strasburg shale and/or sandstone)
Pennsylvanian (Allegheny): Ohio.
R. E. Lamborn, C. R. Austin, and Downs Schaaf, 1938, Ohio Geol. Survey, ser. 4, Bull. 39, p. 145–160.
N. K. Flint, 1951, Ohio Geol. Survey, ser. 4, Bull. 48, p. 47–48.

Strasburg limestone
Middle Ordovician (Chazyan): Tennessee.
E. O. Ulrich, 1939, Kans. Geol. Soc. Guidebook 13th Ann. Field Conf., p. 106.
B. N. Cooper and G. A. Cooper, 1946, Geol. Soc. America Bull., v. 57, no. 1, p. 75.

Strathcona sand and silt
Pleistocene: Alberta, Canada.
P. S. Warren, 1954, Royal Soc. Canada Trans., v. 48, sec. 4, p. 180.

Strathearn formation
Upper Pennsylvanian and Permian (Missourian-Wolfcampian): Nevada.
R. H. Dott, Jr., 1955, Am. Assoc. Petroleum Geologists Bull., v. 39, no. 11, p. 2248–2255, fig. 2.

Strawberry granite
Precambrian: Newfoundland (Labrador), Canada.
E. H. Kranck, 1939, Newfoundland Geol. Survey Bull. 19, p. 17.

Strawbridge member (of Quimbys Mill formation)
Middle Ordovician: Illinois.
J. S. Templeton and H. B. Willman, 1952, Tri-State Geol. Soc. Guidebook 16th Ann. Field Conf., figs. 3, 9.

Stribling formation
Lower or Middle Devonian: Texas.
V. E. Barnes and P. E. Cloud, Jr., 1945, Tex. Univ. Bur. Econ. Geology Min. Res. Circ. 34, p. 31.
V. E. Barnes, P. E. Cloud, Jr., and L. E. Warren, 1946, Tex. Univ. Bur. Econ. Geology Pub. 4301, p. 169–174 [1945].

Striped Rock granite
Precambrian: Virginia.
A. J. Stose, 1942, (abs.) Am. Geophys. Union Trans. 23d Ann Meeting, pt. 2, p. 342.

Stronghold granite
Eocene(?) to lower Pliocene(?): Arizona.
D. J. Cederstrom, 1946, Am. Jour. Sci., v. 244, no. 9, p. 610–611.

Stroudsburgian stage
Middle Devonian: Pennsylvania.
Bradford Willard *in* Bradford Willard, F. M. Swartz, and A. B. Cleaves, 1939, Pa. Geol. Survey, ser. 4, Bull. G 19, p. 131 (footnote).

Stuart glacial stage
Pleistocene: Washington.
B. M. Page, 1939, Jour. Geology, v. 47, no. 8, p. 805–814.

Stuhini group
Upper Triassic: British Columbia, Canada.
F. A. Kerr, 1945, Canada Geol. Survey Paper (Prelim. Map) 45–30; 1948, Mem. 248, p. 20 (table), 25–27, geol. map.

Stump Arroyo member (of Crooked Creek formation)
Pleistocene: Kansas.
C. W. Hibbard, 1949, Mich. Univ. Mus. Paleontology Contr., v. 7, no. 4, p. 71–73.

Sudbury-Bruce series
Precambrian: Ontario, Canada.
H. W. Fairbairn, 1940 (abs.) Royal Soc. Canada Proc. 3d ser., v. 34, p. 162.

Sugarloaf andesite
Miocene or Pliocene: Washington.
B. M. Page, 1940, Stanford Univ. Abs. Dissert., v. 15, p. 119.

Sugarloaf quartz latite
Cretaceous or Tertiary: Arizona.
H. E. Enlows, 1951, Tulsa Geol. Soc. Digest, v. 19, p. 105–107.

Sugarloaf Mountain quartzite
Cambrian(?): Maryland.
A. I. Jonas and G. W. Stose, 1938, Washington Acad. Sci. Jour., v. 28, no. 8, p. 347

Sugarlump tuffs

Tertiary, upper: New Mexico.

F. J. Kuellmer and others, 1953, *in* N. Mex. Geol. Soc. Guidebook 4th Field Conf., p. 42 (map), 47, 50 (map).

H. L. Jicha, Jr., 1954, N. Mex. State Bur. Mines Min. Res. Bull. 37, p. 39, 42–44.

Suicide grit

Upper Triassic: Utah.

J. S. Williams, 1945, Am. Jour. Sci., v. 243, no. 9, p. 474.

Sukkertoppen gneiss or granite

Precambrian: Southwest Greenland.

Hans Ramberg, 1948, Meddel. om Grønland, bind 142, nr. 5, p. 6–12.

Sully member (of Pierre formation)

Cretaceous: South Dakota and Nebraska.

W. V. Searight, 1937, S. Dak. State Geol. Survey Rept. Inv. 27, p. 21–34, pl. 3.

Sulphur Mountain member (of Spray River formation)

Lower Triassic: Alberta, Canada.

P. S. Warren, 1945, Am. Jour. Sci., v. 243, no. 9, p. 482–483.

Sulphur Springs Mountain andesite

Tertiary(?): California.

C. E. Weaver, 1949, Geol. Soc. America Mem. 35, p. 110 (table 24), 116–117.

Sulphur Well member (of Cynthiana formation)

Ordovician: Kentucky.

A. C. McFarlan, 1943, Geology of Kentucky: Lexington, Ky., Ky. Univ., p. 11 (footnote), 20–22.

Sumas shales (in Chuckanut formation)

[Eocene]: Washington.

S. L. Glover, 1941, Wash. Dept. Conserv. Devel., Div. Geology Bull. 24, p. 308–311.

Sumay limestone

Pliocene: Mariana Islands (Guam).

Risaburo Tayama, 1952, Coral reefs in the South Seas: Japan Hydrog. Office Bull., v. 11, p. 55, table 4 [English translation in library of U. S. Geol. Survey, p. 66].

Summers series

Pennsylvanian (post-Chester, pre-Morrow): West Virginia.

C. L. Cooper, 1946, Ill. State Geol. Survey Bull. 70, p. 19.

Summit conglomerate

Miocene or Pliocene: Washington.

B. M. Page, 1940, Stanford Univ. Abs. Dissert., v. 15, p. 119.

Summit gabbro

Paleozoic(?) or Mesozoic(?): California.

W. J. Miller and R. W. Webb, 1940, Calif. Jour. Mines and Geology, v. 36, no. 4, p. 353–354, 378 (fig. 31), pl. 2.

Sumner gabbro

Jurassic(?): British Columbia, Canada.

C. E. Cairnes, 1937, Canada Geol. Survey Mem. 213, p. 28.

Sunblood formation

Ordovician (Black River): Northwest Territories (Mackenzie), Canada.

D. R. Kingston, 1951, Am. Assoc. Petroleum Geologists Bull., v. 35, no. 11, p. 2413.

Sunbury formation
See Sunbury Creek formation.

Sunbury Creek formation
Pennsylvanian: New Brunswick, Canada.
J. E. Muller, 1949, Canada Geol. Survey Paper 49–13 (Prelim. Map 49–13A); 1950, Mem. 260, p. 8 (table), 20–22, geol. map.

Sunday Mountain volcanic member (of Orfordville formation)
Middle Ordovician(?): New Hampshire and Vermont.
J. B. Hadley and others, 1938, Geologic map and structure sections of the New Hampshire portion of the Mt. Cube quadrangle (1:62,500): N. H. Highway Dept.
J. B. Hadley, 1950, Vt. Geol. Survey Bull. 1, p. 15–16.

Sunnybrook volcanics
Jurassic: California.
G. R. Heyl and J. H. Eric, 1948, Calif. Dept. Nat. Res., Div. Mines Bull. 144, pt. 1, p. 53, pl. 7.

Sunnyside member (of Blackhawk formation)
Upper Cretaceous: Utah.
R. G. Young, 1955, Geol. Soc. America Bull., v. 66, no. 2, p. 183, 185–186.

Sunnyside sand
Pleistocene to Recent: British Columbia, Canada.
J. E. Armstrong and W. C. Brown, 1953, Canada Geol. Survey Water Supply Paper 322, table, map.

Sunol series
Upper Cretaceous: California.
O. P. Jenkins, 1938, Geologic map of California (1:500,000): Calif. Dept. Nat. Res. Div. Mines, sheet 4.

Sun River dolomite
Upper Mississippian: Montana.
V. R. Chamberlain, 1955, Billings Geol. Soc. Guidebook 6th Ann. Field Conf., p. 78, 79.

Sunset Point formation
Upper Cambrian (Croixan): Wisconsin.
G. O. Raasch, 1952, Ill. Acad. Sci. Trans., v. 44, p. 150.

Sunshine Ranch member (of Saugus formation)
Pliocene: California.
J. C. Hazzard *in* G. B. Oakeshott, 1950, Calif. Jour. Mines and Geology, v. 46, no. 1, p. 59–61.

Sunwapta Peak formation
Middle Cambrian: Alberta, Canada.
R. D. Hughes, 1955, Alberta Soc. Petroleum Geologists Guidebook 5th Ann. Field Conf., p. 86–90.

Supan tuff and sand member (of Tuscan formation)
[Pliocene]: California.
R. C. Treasher, 1947, (abs.) Geol. Soc. America Bull., v. 58, no. 12, pt. 2, p. 1257.

Superian era
Precambrian: Canada.
R. W. Brock, 1936, Geol. Mag., v. 73, no. 861, p. 133–134, 140.

Suplee formation
Lower Jurassic (Lias): Oregon.
R. L. Lupher, 1941, Geol. Soc. America Bull., v. 52, no. 2, p. 227, 239.

Surgidero formation
Recent: Cuba.
Jorge Brodermann, 1940, Soc. Cubana Ingenieros Rev., v. 34, no. 2, geol. map and cross sections.

Surrey till
Pleistocene: British Columbia, Canada.
J. E. Armstrong and W. C. Brown, 1953, Canada Geol. Survey Water Supply Paper 322, map, table.

Suspension Bridge formation
Lower Ordovician (Arenigian): New Brunswick, Canada.
A. O. Hayes and B. F. Howell, 1937, Geol. Soc. America Special Paper 5, p. 83.

Suspension Bridge member (of Lockport dolomite)
Silurian (Niagaran): Ontario, Canada.
E. R. Cumings, 1939, Geologie der Erde, North America, v. 1, p. 596 (fig. 7), 597.

Sussex sandstone member (of Cody shale)
Upper Cretaceous: Wyoming.
J. B. Wilson, 1951, Wyo. Geol. Survey Rept. Inv. 3, p. 3–11.

Sustut group
Upper Cretaceous: British Columbia, Canada.
J. E. Armstrong, 1945, Canada Geol. Survey Paper (Prelim. Map) 45–6.

Sutro member (of Alta formation)
Oligocene(?): Nevada.
V. P. Gianella, 1934, Mining and Metallurgy, v. 15, no. 331, p. 299; 1936, Nev. Univ. Bull., v. 30, no. 9, p. 55–58.

Svejstrups injection complex
Lower Paleozoic (Caledonian): Northeast Greenland.
G. P. Leedal, 1952, Meddel. om Grønland, bind 142, nr. 6, p. 30–37, pl. 2.

Swan Lake glaciation
Pleistocene (Wisconsin): Alaska.
T. N. V. Karlstrom *in* T. L. Péwé and others, 1953, U. S. Geol. Survey Circ. 289, p. 4, 13 (table 1).

Swannanoa formation
Age not stated: Virginia.
W. A. Nelson, 1949, (abs.) Va. Acad. Sci. Proc. 1948–1949, p. 139.

Swanville formation
Middle Devonian: Indiana.
Guy Campbell, 1942, Geol. Soc. America Bull., v. 53, no. 7, p. 1063–1064.

Swauger quartzite
Precambrian (Belt series): Idaho.
C. P. Ross, 1947, Geol. Soc. America Bull., v. 58, no. 12, pt. 1, p. 1096, 1097–1099, pl. 1.

Swayze series
Precambrian: Ontario, Canada.
H. C. Rickaby, 1933, Canadian Inst. Mining and Metallurgy Trans., v. 36, p. 208–209.

Sweitzer formation
Pliocene(?): California.
L. G. Hertlein, 1929, Stanford Univ. Abs. Dissert., v. 4, p. 82.

Swift formation
Upper Jurassic: Montana and Idaho.
W. A. Cobban, 1945, Am. Assoc. Petroleum Geologists Bull., v. 29, no. 9, p. 1281–1286.

Swift Current Creek formation
Eocene, upper: Saskatchewan, Canada.
H. E. Wood, 2d, and others, 1941, Geol. Soc. America Bull., v. 52, no. 1, p. 32.
L. S. Russell, 1950, Roy. Soc. Canada Trans., 3d ser., v. 44, sec. 4, p. 52–54.

Swift Run formation
Precambrian: Virginia.
G. W. Stose and A. J. Stose, 1944, Am. Jour. Sci., v. 242, no. 8, p. 410.

Swissvale gypsum member (of Minturn formation)
Pennsylvanian (Desmoinesian): Colorado.
K. G. Brill, Jr., 1952, Geol. Soc. America Bull., v. 63, no. 8, p. 821, 833, pl. 1.

Sycamore conglomerate
Miocene and Pliocene: California.
G. J. Bellemin, 1940, Am. Assoc. Petroleum Geologists Bull., v. 24, no. 4, p. 652 (fig. 2), 653, 656–657.

Sycamore Canyon member (of Puente formation)
Miocene, upper: California.
M. L. Krueger, 1936, (abs.) Am. Assoc. Petroleum Geologists Bull., v. 20, no. 11, p. 1520.

Sydprøven granite
Precambrian: Southwest Greenland.
C. E. Wegmann, 1938, Meddel. om Grønland, bind 113, nr. 2, p. 105–112.

Sydvejdal marbles
Upper Precambrian (Greenlandian): North Greenland.
Erdhart Frankl, 1955, Meddel. om Grønland, bind 103, nr. 7, p. 13, 16, 32.

Sylva-Maria group
Lower Paleozoic (Caledonian): Northeast Greenland.
C. E. Wegmann, 1935, Meddel. om Grønland, bind 103, nr. 3, p. 31, pl. 1.

Sylvester group
Post–Middle Devonian, pre–Upper Missippian: British Columbia, Canada.
H. Gabrielse, 1955, Canada Geol. Survey Paper (Prelim. Map) 54–10.

Taagefjeldene graywackes
Precambrian (Greenlandian): North Greenland.
Erdhart Frankl, 1954, Meddel. om Grønland, bind 116, nr. 2, p. 37–40, 56, 78, pl. 1.

Tabaquite series
Oligocene: Trinidad, British West Indies.
A. B. Thompson, 1925, Oil field exploration and development, v. 1, Oil field principles: New York, D. VanNostrand Co., p. 389.

Tabernacle flow
Pleistocene, upper: Utah.
G. B. Maxey, 1946, Am. Jour. Sci., v. 244, no. 5, p. 328.

Table Mountain formation
Tertiary: Colorado.
R. L. Ives, 1938, Geol. Soc. America Bull., v. 49, no. 7, p. 1049.

Tabor member (of Crockett formation)
Eocene (Claiborne): Texas.
G. D. Harris, 1941, Tex. Univ. Bur. Econ. Geology Min. Res. Survey Circ. 33, p. 13, 14.

Tachek group
Jurassic or Cretaceous(?): British Columbia, Canada.
H. M. A. Rice, 1949, Canada Geol. Survey Map 971A.

Tacoma series
Cambro-Ordovician(?): Maine.
L. W. Fisher, 1936, Am. Mineralogist, v. 21, no. 5, p. 323.

Tacubaya formation
Pleistocene: Cuenca de Mexico, Mexico.
Kirk Bryan, 1948, Soc. Geol. Mexicana Bol., tomo 13, pl. 1.

Taghanic stage
Middle Devonian (Erian): New York.
G. A. Cooper and others, 1942, Geol. Soc. America Bull., v. 53, no. 12, pt. 1, p. 1733, Chart 4.

Tagpochau limestone
Miocene, lower: Mariana Islands (Saipan).
Risaburo Tayama, 1938, Geomorphology, geology, and coral reefs of Saipan Island: Tropical Industry Inst., Palau, South Sea Islands, Bull. 1 [English translation in library of U. S. Geol. Survey, p. 63–68].
Josiah Bridge *in* W. S. Cole and Josiah Bridge, 1953, U. S. Geol. Survey Prof. Paper 253, p. 11–12.

Tahoka clay
Pleistocene (Wisconsin): Texas and New Mexico.
G. L. Evans and G. E. Meade, 1945, Texas Univ. Bur. Econ. Geology Pub. 4401, p. 495–498.

Taholah formation
Pleostocene, lower: Washington.
S. L. Glover, 1940, Northwest Science, v. 14, no. 3, p. 69–71.

Taihamu (Taihanom) limestone
Oligocene [Aquitanian]: Mariana Islands (Rota).
Risaburo Tayama, 1939, Correlation of the strata of the South Sea Islands: Geol. Soc. Japan Jour., v. 46, no. 549, p. 346 (correlation table) [English translation in library of U. S. Geol. Survey]; 1952, Coral reefs in the South Seas: Japan Hydrog. Office Bull., v. 11, p. 52, table 4 [English translation in library of U. S. Geol. Survey, p. 62].

Taihanom limestone
Taihanomu limestone
See Taihamu limestone.

Tait volcanics
Precambrian (Keewatin): Ontario, Canada.
G. L. Fletcher and T. N. Irvine, 1954, Ontario Dept. Mines Ann. Rept., v. 63, pt. 5, p. 15.

Takla group
Upper Triassic to Upper Jurassic: British Columbia, Canada.
J. E. Armstrong, 1945, Canada Geol. Survey Paper (Prelim. Map) 45–6.

Takwahoni group

Lower Jurassic: British Columbia, Canada.

F. A. Kerr, 1945, Canada Geol. Survey Paper (Prelim. Map) 45-30; 1948, Mem. 248, p. 20 (table), 32–34, geol. map.

Talamantes volcanic series

Tertiary: Chihuahua, Mexico.

I. F. Wilson and V. S. Rocha, 1948, U. S. Geol. Survey Bull. 954–E, p. 189.

Tallahassee limestone

Eocene, middle: Florida (subsurface).

P. L. Applin and E. R. Applin, 1944, Am. Assoc. Petroleum Geologists Bull., v. 28, no. 12, p. 1688–1693.

Tallant formation (of Ochelata group)

Pennsylvanian: Oklahoma.

M. C. Oakes, 1951, Tulsa Geol. Soc. Digest, v. 19, p. 119, 121.

Tallman fanglomerate

Permian: Nevada.

H. G. Ferguson, S. W. Muller, and R. J. Roberts, 1951, Geology of the Winnemucca quadrangle, Nevada: U. S. Geol. Survey Geol. Quadrangle Map [GQ 11].

Talofofo peat-bearing beds

Pliocene: Mariana Islands (Guam).

Risaburo Tayama, 1952, Coral reefs in the South Seas: Japan Hydrog. Office Bull., v. 11, p. 55–56, table 4 [English translation in library of U. S. Geol. Survey, p. 66].

Talparo formation

Miocene and Pliocene: Trinidad, British West Indies.

Ernst Lehner, 1935 [France] Office national des combustibles liquides Annales, 10e Année, no. 4, p. 716 (table).

H. H. Renz, 1942, 8th Am. Sci. Cong. Proc., v. 4, p. 558–559, chart facing p. 572.

Tamiahua facies

Middle Cretaceous: Vera Cruz, Mexico.

J. O. Nigra, 1951, Asociación Mexicana Geólogos Petroleros Bol., v. 3, nos. 3–4, p. 140.

Tamiami formation

Miocene, upper: Florida.

W. C. Mansfield, 1939, Fla. Dept. Conserv. Geol. Bull. 18, p. 8, 15.

Tampico shale member (of Piper formation)

Middle Jurassic: Montana (subsurface and surface), and Saskatchewan, Canada (subsurface).

J. W. Nordquist, 1955, Billings Geol. Soc. Guidebook 6th Ann. Field Conf., p. 97, 101.

Tamworth granite

Upper Devonian(?) (New Hampshire magma series): New Hampshire.

A. P. Smith and others, 1938, Geologic map and structure sections of the Mt. Chocorua quadrangle, New Hampshire (1:62,500): N. H. Highway Dept.

Tanak volcanics

Quaternary: Alaska (Aleutian Islands).

F. M. Byers, Jr., and others, 1947, U. S. Geol. Survey Alaskan Volcano Inv. Rept. 2, pt. 3, p. 28–31.

Tanapag limestone

Pleistocene or Recent: Mariana Islands (Saipan).

Risaburo Tayama, 1939, Correlation of the strata of the South Sea Islands: Geol. Soc. Japan Jour., v. 46, no. 549, p. 346 (correlation table) [English translation in library of U. S. Geol. Survey]; 1952, Coral reefs in the South Seas: Japan Hydrog. Office Bull., v. 11, p. 58, table 4 [English translation in library of U. S. Geol. Survey, p. 69].

Tangle Ridge formation

Upper Cambrian: Alberta, Canada.

R. D. Hughes, 1955, Alberta Soc. Petroleum Geologists Guidebook 5th Ann. Field Conf., p. 90–92.

Tansill anhydrite or formation (of Whitehorse group or Carlsbad group)

Permian: New Mexico.

R. K. DeFord *in* Addison Young, Max David, and E. A. Wahlstrom, 1939, Am. Assoc. Petroleum Geologists Bull., v. 23, no. 10, p. 1550–1551.

R. K. DeFord and G. D. Riggs, 1941, Am. Assoc. Petroleum Geologists Bull., v. 25, no. 9, p. 1713–1728.

Tanyard formation (of Ellenburger group).

Lower Ordovician: Texas.

V. E. Barnes and P. E. Cloud, Jr., 1945, Tex. Univ. Bur. Econ. Geology Min. Res. Circ. 34, p. 1, 19–29.

Tapaliza shales

Oligocene, upper, and Miocene, lower: Panama.

Charles Schuchert, 1935, Historical geology of the Antillean-Caribbean region: New York, John Wiley and Sons, p. 563, 660.

A. A. Olsson, 1942, 8th Am. Sci. Cong. Proc., v. 4, p. 241.

Tapotchau limestone

See **Tagpochau limestone.**

Tappan lava flow

Age not stated: Arizona.

H. S. Colton, 1937, Mus. Northern Ariz. Bull. 10, p. 21–22.

Tappocho limestone

See **Tagpochau limestone.**

Tapukok granodiorite

Precambrian: Manitoba, Canada.

Jorma Kalliokoski, 1952, Canada Geol. Survey Mem. 270, p. 20–22.

Taputapu volcanics

Pliocene(?): Samoa Islands (Tutuila).

H. T. Stearns, 1944, Geol. Soc. America Bull., v. 55, no. 11, p. 1285, 1305–1306.

Tarahumara formation

Cretaceous(?): Sonora, Mexico.

I. F. Wilson and V. S. Rocha, 1946, Mexico Com. Dir. Inv. Rec. Mineros Bol. 9, p. 30–34.

Taraises formation

Lower Cretaceous: Coahuila, Mexico.

R. W. Imlay, 1936, Geol. Soc. America Bull., v. 47, no. 7, p. 1111–1115.

Tarango formation

Pleistocene(?): Cuenca de Mexico, Mexico.

Kirk Bryan, 1948, Soc. Geol. Mexicana Bol., tomo 13, p. 11–12.

Tarantula formation
Cretaceous: Texas.
R. M. Huffington, 1947, Harvard Univ. Summaries of Theses, 1943–45, p. 196.

Tarará formation
Oligocene, upper: Cuba.
Jorge Brodermann, 1945, Soc. Cubana Ingerieros Rev., v. 42, no. 1, chart facing p. 144.

Target limestone member (of Springer formation)
Pennsylvanian (Springeran): Oklahoma.
A. P. Bennison, 1954, Am. Assoc. Petroleum Geologists Bull., v. 38, no. 5, p. 913–914.

Tartar cyclothem
Pennsylvanian: Illinois.
J. R. Ball, 1952, Ill. State Geol. Survey Bull. 77, p. 21.

Tascotal formation
Oligocene or younger: Texas.
S. S. Goldich and C. L. Seward, 1948, W. Tex. Geol. Soc. [Guidebook] Fall Field Trip, p. 21–22.

Tasek porphyrite
Devonian(?): Southwest Greenland.
N. V. Ussing, 1911, Meddel. om Grønland, hefte 38, p. 213–217.

Tassai Wash group
Tertiary(?) (pre-Pliocene): Nevada.
C. R. Longwell, 1936, Geol. Soc. America Bull., v. 47, no. 9, p. 1414–1415.

Tatow limestone
Lower Cambrian (Waucobian): Utah.
Charles Deiss, 1938, Geol. Soc. America Bull., v. 49, no. 7, p. 1143–1144.

Tau trachyte
Pliocene and lower Pleistocene(?): Samoa Islands (Tutuila).
H. T. Stearns, 1944, Geol. Soc. America Bull., v. 55, no. 11, p. 1285.

Taughannock stage
See Taghanic stage.

Taylor group
Jurassic: British Columbia, Canada.
C. E. Cairnes, 1943, Canada Geol. Survey Paper 43–15, p. 6–7.

Taylor Brook injection gneiss
Middle Silurian: Maine.
L. W. Fisher, 1938 (abs.) Geol. Soc. America Proc. 1937, p. 81; 1941, Geol. Soc. America Bull., v. 52, no. 1, p. 115–117.

Taylors Falls member (of Franconia formation)
Upper Cambrian (St. Croixian): Minnesota.
C. R. Stauffer, G. M. Schwartz, and G. A. Thiel, 1938 (abs.) Geol. Soc. America Bull., v. 49, no. 12, pt. 2, p. 1902; 1939, v. 50, no. 8, p. 1239.

Taylors Pond shale member (of Giles Cove formation)
Ordovician: Newfoundland.
G. R. Heyl, 1937, Newfoundland Geol. Survey Bull. 8, p. 10.

Teapa [formation]
Miocene: Istmo de Tehuantepec, Mexico.
J. B. Gibson, 1936, Soc. Geol. Mexicana Bol., tomo 9, no. 5, correlation chart.

Tebo formation
Pennsylvanian (Des Moines) : Missouri.
H. S. McQueen, 1943, Mo. Geol. Survey and Water Res., 2d ser., v. 28, p. 78–83.

Tecocoyunca beds
Middle Jurassic : Guerrero, Mexico.
E. J. Guzman, 1950, Asociación Mexicana Geólogos Petroleros Bol., v. 2, no. 2, p. 116.

Tecopa shale
Lower and Middle Cambrian : California and Nevada.
H. E. Wheeler, 1948, Nev. Univ. Bull., Geology and Mining Ser., no. 47, p. 27–28.

Tecumseh sandstone (in Silver Reef sandstone member of Chinle formation)
Upper Triassic : Utah.
P. D. Proctor, 1953, Utah Geol. Mineralog. Survey Bull. 44, p. 10–11, 28–29.

Tejon Lookout granite
Jurassic(?) : California.
J. C. Crowell, 1952, Calif. Dept. Nat. Res., Div. Mines Special Rept. 24, p. 10.

Telemaque sand (of Springvale formation)
Miocene, upper : Trinidad, British West Indies.
H. H. Suter, 1951, Colonial Geology and Min. Res., v. 2, no. 3, p. 205 (table 13) [1952].

Temecula arkose
Pleistocene : California.
J. F. Mann, Jr., 1955, Calif. Dept. Nat. Res., Div. Mines Special Rept. 43, p. 9, 10–13.

Temescal Wash quartz latite porphyry
Jurassic(?) : California.
A. O. Woodford, T. G. Moran, and J. S. Shelton, 1946, Am. Assoc. Petroleum Geologists Bull., v. 30, no. 4, p. 528.
E. S. Larsen, Jr., 1948, Geol. Soc. America Mem. 29, p. 36–38.

Temiscamie group
Precambrian : Quebec, Canada.
W. G. Wahl, 1947, Quebec Dept. Mines Prelim. Rept. 211, p. 5, 8.

Temosachic formation
Pliocene, upper, Chihuahua, Mexico.
L. C. Pray, 1953, *in* Geological sciences at the California Institute of Technology : Calif. Inst. Technology, p. 32.

Tempa schist
Age not stated : North Carolina.
C. E. Hunter and P. W. Mattocks, 1936, TVA Div. Geology Bull. 4, p. 13.

Temple Cap member (of Navajo sandstone)
Jurassic and Jurassic(?) : Utah.
R. K. Grater, 1948, Am. Jour. Sci., v. 246, no. 5, p. 312, 313.

Temple Lake glacial stage
Pleistocene (Cochrane) : Wyoming.
J. H. Moss, 1951, Early Man in the Eden Valley : Philadelphia, Univ. Pa., Univ. Mus., p. 56–62.

Templeton member (of Woodbine formation)
Upper Cretaceous : Texas.
H. R. Bergquist, 1949, U. S. Geol. Survey Oil and Gas Inv. Prelim. Map 98.

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Tenakihi group
Precambrian (Proterozoic): British Columbia, Canada.
E. F. Roots, 1954, Canada Geol. Survey Mem. 274, p. 33–47.

Tenmile Creek dolomite
Middle Devonian: Ohio.
G. A. Stewart, 1938, Geol. Soc. America Special Paper 8, p. 6, 7.

Tenmile Creek formation
Pennsylvanian (Bendian): Oklahoma.
B. H. Harlton, 1938, Am. Assoc. Petroleum Geologists Bull., v. 22, no. 7, p. 854, 864–870.

Tenney Canyon tongue (of Kayenta formation)
Jurassic(?): Utah.
Paul Averitt and others, 1955, Am. Assoc. Petroleum Geologists Bull., v. 39, no. 12, p. 2522.

Tennycape formation
Mississippian: Nova Scotia, Canada.
L. J. Weeks, 1945, Canada Geol. Survey Paper (Prelim. Map) 45–26.

Tepee Creek formation
Precambrian: Oklahoma.
C. A. Merritt and W. E. Ham, 1941, Am. Assoc. Petroleum Geologists Bull., v. 25, no. 2, p. 287, 290–299.

Tepee Trail formation
Eocene, upper: Wyoming.
J. D. Love, 1939, Geol. Soc. America Special Paper 20, p. 73–79.

Teposcolula limestone
Upper Jurassic: Oaxaca, Mexico.
G. P. Salas, 1949, Asociación Mexicana Geólogos Petroleros Bol., v. 1, no. 2, p. 105–108.

Terra Cotta clay member (of Dakota formation)
Cretaceous: Kansas.
R. C. Moore and others, 1940, Kans. State Geol. Survey Bull. 27, p. 40 (fig. 14).
Norman Plummer and J. F. Romary, 1942, Kans. State Geol. Survey Bull. 41, pt. 9, p. 319, 329, 332–336.

Terrebonne formation
Middle Ordovician (Trenton): Quebec, Canada.
T. H. Clark, 1944, Royal Soc. Canada Trans., sec. 4, v. 38, p. 29; 1952, Quebec Dept. Mines Geol. Rept. 46, p. 74.

Territories formation
Upper Devonian: Subsurface in Alberta, British Columbia, and Northwest Territories (Mackenzie), Canada.
C. W. Hunt, 1954, Am. Assoc. Petroleum Geologists Bull., v. 38, no. 11, p. 2297–2300.

Teshierpi granite
Precambrian: Northwest Territories (Mackenzie), Canada.
C. P. Jenney, 1954, Geol. Assoc. Canada Proc., v. 6, pt. 2, p. 14, 15.

Tesla formation
Eocene, middle: California.
A. S. Huey, 1937, (abs.) Geol. Soc. America Proc. 1936, p. 335.
Ralph Stewart, 1949, U. S. Geol. Survey Oil and Gas Inv. Prelim. Chart 34, sheet 2.

Teslin formation

Permian: British Columbia, Canada.

K. D. Watson and W. H. Matthews, 1944, British Columbia Dept. Mines Bull. 19, p. 16–17.

Tesuque formation

Miocene, middle(?), to Pliocene, lower: New Mexico.

F. E. Kottlowski, 1953, N. Mex. Geol. Soc. Guidebook 4th Field Conf., p. 148 (chart).
Brewster Baldwin and F. E. Kottlowski, 1955, N. Mex. State Bur. Mines Min. Res. Scenic Trips to the Geol. Past, no. 1, p. 20, 21, 24.

Tête Jaune horizon (of McBride group)

Precambrian: Alberta, Canada.

M. K. Sorensen, 1955, Alberta Soc. Petroleum Geologists Guidebook 5th Ann. Field Conf., p. 57.

Tetreauville formation

Middle Ordovician (Trenton): Quebec, Canada.

T. H. Clark, 1941, Quebec Dept. Mines Prelim. Rept. 158, p. 4; 1952, Geol. Rept. 46, p. 71–74.

Texistepec [formation]

Oligocene: Istmo de Tehuantepec, Mexico.

J. B. Gibson, 1936, Soc. Geol. Mexicana Bol., tomo 9, no. 5, correlation chart.

Thacher limestone member (of Manlius formation)

Lower Devonian (Helderbergian): New York.

L. V. Rickard, 1955, N. Y. Geol. Assoc. Guidebook 27th Ann. Meeting, p. 7.

Thatcher limestone member (of Graneros shale)

Upper Cretaceous: Colorado.

N. W. Bass, C. E. Straub, and H. O. Woodbury, 1947, U. S. Geol. Survey Oil and Gas Inv. Prelim. Map 68.

Thelma member (of Bearpaw formation)

Upper Cretaceous: Saskatchewan, Canada.

G. M. Furnival, 1946, Canada Geol. Survey Mem. 242, p. 42–43.

Theodosia formation

Lower Ordovician: Missouri and Arkansas.

J. S. Cullison, 1944, Mo. Univ. School Mines and Metallurgy Bull., Tech. Ser., v. 15, no. 2, p. 25–32.

The Rocks sandstone

Eocene: California.

R. R. Thorup, 1941, (abs.) Geol. Soc. America Bull., v. 52, no. 12, pt. 2, p. 1958; 1943, Calif. Dept. Nat. Res., Div. Mines Bull. 118, pt. 3, p. 464, 465.

Therrill clay member (of Weches formation)

Eocene, middle (Claiborne): Texas.

H. B. Stenzel, 1938, Tex. Univ. Bur. Econ. Geol. Pub. 3818, p. 20, 97, 107–108 [1939].

Thirty-nine Mile volcanic series

Oligocene, lower: Colorado.

J. T. Stark and others, 1949, Geol. Soc. America Mem. 33, p. 81, 101–103.

Thomasville glacial substage

Pleistocene (Iowan): Colorado.

R. L. Nelson, 1954, Jour. Geology, v. 62, no. 4, p. 328–329.

Thompson group
Carboniferous and younger: British Columbia, Canada.
1948, Canada Geol. Survey Map 932A.

Thompson series
Jurassic: British Columbia, Canada.
C. H. Crickmay, 1930, Calif. Univ. Pub. Dept. Geol. Sci. Bull., v. 19, no. 2, p. 34, 36.

Thompson Valley limestone
Middle Ordovician: Virginia and Tennessee.
C. E. Prouty, 1946, Am. Assoc. Petroleum Geologists Bull., v. 30, no. 7, p. 1152-1156

Thorburn member (of Stellarton series)
Pennsylvanian: Nova Scotia, Canada.
W. A. Bell, 1940, Canada Geol. Survey Mem. 225, p. 43 [1941].

Thoreau formation or sandstone
Jurassic: New Mexico.
C. T. Smith, 1951, *in* N. Mex. Geol. Soc. Guidebook 2d Field Conf., p. 13, 38; 1954, N. Mex. Bur. Mines Min. Res. Bull. 31, p. 14–15.

Thorn group
Middle Silurian (Niagaran): Illinois, Wisconsin, and Indiana.
H. A. Lowenstam, 1949, Ill. State Geol. Survey Rept. Inv. 145, p. 18.

Thorncrag limy gneiss
Cambro-Ordovician(?): Maine.
L. W. Fisher, 1936, Am. Mineralogist, v. 21, no. 5, p. 323.

Thorup Fjord limestone
Ordovician: Northwest Territories (Ellesmere Island), Canada.
J. C. Troelsen, 1950, Meddel. om Grønland, bind 149, nr. 7, p. 59–60.

Threadgill member (of Tanyard formation)
Lower Ordovician: Texas.
V. E. Barnes, 1942, Tex. Univ. Bur. Econ. Geology Min. Res. Survey Circ. 54, p. 1, 2.
P. E. Cloud, Jr., V. E. Barnes, and Josiah Bridge, 1946, Tex. Univ. Bur. Econ. Geology Pub. 4301, p. 148, 151 [1945].

Three Rivers schist
Triassic(?): California.
Cordell Durrell, 1940, Calif. Univ. Dept. Geol. Sci. Bull., v. 25, no. 1, p. 15, 116.

Thule formation
Precambrian (upper Algonkian): North Greenland.
Lauge Koch, 1929, Meddel. om Grønland, bind 73, afd. 2, nr. 2, p. 220–222.

Thumb formation
Upper Cretaceous(?): Nevada.
C. R. Longwell, 1952, Utah Geol. Mineralog. Survey [Utah Geol. Soc.] Guidebook 7, p. 35.

Thunder Lake sediments
Precambrian (Keewatin): Ontario, Canada.
F. J. Pettijohn, 1939, Geol. Soc. America Bull., v. 50, no. 5, p. 766.
Jack Satterly, 1943, Ontario Dept. Mines Ann. Rept., v. 50, pt. 2, p. 29–30.

Thunder River volcanics
Precambrian (Keewatin): Ontario, Canada.
F. J. Pettijohn, 1939, Geol. Soc. America Bull., v. 50, no. 5, p. 764.
Jack Satterly, 1943, Ontario Dept. Mines Ann. Rept., v. 50, pt. 2, p. 30.

Thurman formation
Oligocene and Miocene: New Mexico.
V. C. Kelley and Caswell Silver, 1952, N. Mex. Univ. Pubs. in Geology 4, p. 114, 121–123.

Thursday dolomite
Middle Silurian: Utah.
F. W. Osterwald, 1953, U. S. Geol. Survey Trace Elements Inv. Rept. TEI–330, p. 105.

Tichborne gabbroic anorthosite
Precambrian: Ontario, Canada.
J. M. Harrison, 1944, Geol. Soc. America Bull., v. 55, no. 12, p. 1409.

Tichborne-Buck Bay granite and alaskite
Precambrian: Ontario, Canada.
W. D. Harding, 1951, Ontario Dept. Mines Ann. Rept., v. 56, pt. 6, p. 30.

Tick Canyon formation
Miocene, lower: California.
R. H. Jahns, 1939, Am. Jour. Sci., v. 237, no. 11, p. 819–821.

Tie Gulch dolomite member (of Manitou formation)
Lower Ordovician: Colorado.
N. W. Bass and S. A. Northrop, 1953, Am. Assoc. Petroleum Geologists Bull., v. 37, no. 5, p. 906–907.

Tierra Blanca member (of Lake Valley formation)
Mississippian (Osage): New Mexico.
L. R. Laudon and A. L. Bowsher, 1949, Geol. Soc. America Bull., v. 60, no. 1, p. 13–14, fig. 4.

Tierra Colorada formation
Pleistocene: Tabasco, Mexico.
Javier Alvarez A., 1950, Asociación Mexicana Geólogos Petroleros Bol., v. 2, no. 8, p. 525, 526.

Tierra Loma shale member (of Moreno formation)
Upper Cretaceous: California.
M. B. Payne, 1941, (abs.) Geol. Soc. America Bull., v. 52, no. 12, pt. 2, p. 1954.

Tiffanian age
Paleocene: North America.
H. E. Wood, 2d, and others, 1941, Geol. Soc. America Bull., v. 52, no. 1, p. 9, pl. 1.

Tiflis member (of Wahluke formation)
Pleistocene, upper: Washington.
G. F. Beck, 1936, Mineralogist, v. 4, no. 11, p. 12, 14.

Tiger formation
Tertiary: Washington.
C. F. Park, Jr., and R. S. Cannon, Jr., 1943, U. S. Geol. Survey Prof. Paper 202, p. 23, pl. 1.

Tiglukpuk formation
Upper Jurassic: Alaska.
R. W. Imlay, 1955, U. S. Geol. Survey Prof. Paper 274–D, p. 70–71.

Tigre formation
Permian (Leonard): Sonora, Mexico.
Manuel Alvarez, Jr., 1949, Asociación Mexicana Geólogos Petroleros Bol., v. 1, no. 1, p. 53.

Tihvipah limestone
Pennsylvanian: California.
J. F. McAllister, 1952, Calif. Dept. Nat. Res., Div. Mines Special Rept. 25, p. 26–27.

Tilantongo marls
Upper Cretaceous: Oaxaca, Mexico.
G. P. Salas, 1949, Asociación Mexicana Geólogos Petroleros Bol., v. 1, no. 2, p. 118–120.

Tilford lens (in Newcastle formation)
Upper Cretaceous: South Dakota.
R. M. Grace, 1952, Wyo. Geol. Survey Bull. 44, p. 14, 16.

Tillamook volcanic series
Eocene, middle(?): Oregon.
W. C. Warren, Hans Norbisrath, and R. M. Grivetti, 1945, U. S. Geol. Survey Oil and Gas Inv. Prelim. Map 42.

Tillite Canyon formation
Precambrian or Lower Cambrian: Northeast Greenland.
Christian Poulsen, 1930, Meddel. om Grønland, bind 74, nr. 12, p. 306–307.

Tilt Point formation
Precambrian (Proterozoic) or Lower Cambrian: Newfoundland, Canada.
W. H. Twenhofel, 1947, Am. Jour. Sci., v. 245, no. 2, p. 92.

Timber Lake member (of Fox Hills formation)
Upper Cretaceous: South Dakota.
R. E. Morgan and B. C. Petsch, 1945, S. Dak. State Geol. Survey Rept. Inv. 49, p. 15–17, pl. 3.

Timpoweap member (of Moenkopi formation)
Lower Triassic: Utah.
H. E. Gregory, 1948, Geol. Soc. America Bull., v. 59, no. 3, p. 227.

Tina cyclothem (including Tina limestone)
Pennsylvanian (Des Moines): Missouri, Iowa, Kansas, and Nebraska.
L. M. Cline, 1941, Am. Assoc. Petroleum Geologists Bull., v. 25, no. 1, p. 29.
J. M. Jewett, 1945, Kans. State Geol. Survey Bull. 58, p. 39–40, 66–67.

Tinajita formation
Upper Cretaceous: Cuba.
P. Bronnimann, 1955, Cushman Found. Foram. Research Contrib., v. 6, pt. 3, p. 99.

Tinaquaic sandstone member (of Sisquoc formation)
Pliocene, lower and middle: California.
W. P. Woodring, M. N. Bramlette, and K. E. Lohman, 1943, Am. Assoc. Petroleum Geologists Bull., v. 27, no. 10, p. 1347–1352.

Tincanebite tongue
Lower and/or Middle Cambrian: Arizona.
E. D. McKee, 1945, Carnegie Inst. Washington Pub. 563, p. 14, 29, 80–82.

Tinguaro marl
Oligocene, lower: Cuba.
R. H. Palmer, 1938, Field guide to geological excursion in Cuba: Habana, Cuba, Carasa y Cía., p. 91; 1945, Jour. Geology, v. 53, no. 1, p. 5 (table 1), 17.

Tinian beds

Oligocene [Aquitanian]: Mariana Islands (Tinian).

Risaburo Tayama, 1936, Geomorphology, geology, and coral reefs of Tinian Island together with Aguijan and Naftan Islands: Tohoku Univ., Inst. Geology and Paleontology Contr. in Japanese Language, no. 21, p. 20–21 [English translation in library of U. S. Geol. Survey, p. 19–20]; 1952, Coral reef in the South Seas: Japan Hydrog. Office Bull., v. 11, p. 53, table 4 [English translation in library of U. S. Geol. Survey, p. 63].

Tinkers Creek shale facies (of Cuyahoga formation)

Mississippian: Ohio.

F. T. Holden, 1941, Ill. Acad. Sci. Trans., v. 34, no. 2, p. 172.

Tin Mountain limestone

Mississippian: California.

J. F. McAllister, 1952, Calif. Dept. Nat. Res., Div. Mines Special Rept. 25, p. 20–22.

Tintamarre formation

Oligocene, upper: St. Martin (Tintamarre Island), French West Indies.

C. W. Drooger, 1951, K. Nederlandse Wetensch. Sec. Sci. Proc., ser. B, v. 54, no. 1, p. 54–55.

Tioughnioga stage

Middle Devonian (Erian): New York.

G. A. Cooper and others, 1942, Geol. Soc. America Bull., v. 53, no. 12, pt. 1, p. 1733, Chart 4.

Tippecanoe sequence

Ordovician (Chazyan to Mohawkian): Central and western United States.

L. L. Sloss, W. C. Krumbein, and E. C. Dapples *in* C. R. Longwell, chm., 1949, Geol. Soc. America Mem. 39, p. 110–111, 115.

Tisdale group

Precambrian (Keewatin): Ontario, Canada.

W. R. Dunbar, 1948, *in* Structural geology of Canadian ore deposits: Canadian Inst. Mining and Metallurgy, p. 443–444.

Titanosarcolites limestone

Upper Cretaceous (Maestrichtian): Jamaica, British West Indies.

H. R. Hose, 1950, Colonial Geology and Min. Res., v. 1, no. 1, p. 17, 22.
L. J. Chubb, 1955, Geol. Mag., v. 92, no. 3, p. 183–185.

Ti Valley series

Pennsylvanian: Oklahoma, Missouri, Kansas, Iowa, and Texas.

C. L. Cooper, 1946, Ill. State Geol. Survey Bull. 70, p. 16, 18–19.

Tlaltepexi gypsum series

Upper Jurassic: Oaxaca, Mexico.

G. P. Salas, 1949, Asociación Mexicana Geólogos Petroleros Bol., v. 1, no. 2, p. 97–105.

Tlaxiaco beds

Lower Cretaceous: Oaxaca, Mexico.

G. P. Salas, 1949, Asociación Mexicana Geólogos Petroleros Bol., v. 1, no. 2, p. 108–109.

Toad formation

Triassic: British Columbia and Yukon, Canada.

E. D. Kindle, 1944, Canada Geol. Survey Paper 44–16, p. 7.

Tobago volcanic group

Cretaceous(?): Tobago, British West Indies.

J. C. Maxwell, 1948, Geol. Soc. America Bull., v. 59, no. 8, p. 816.

Tobas series

See Tuff series.

Tobin formation

Lower Triassic: Nevada.

S. W. Muller, H. G. Ferguson, and R. J. Roberts, 1951, Geology of the Mount Tobin quadrangle, Nevada: U. S. Geol. Survey Geol. Quadrangle Map [GQ 7].

Toco formation

Lower Cretaceous: Trinidad, British West Indies.

H. H. Renz, 1942, 8th Am. Sci. Cong. Proc., v. 4, table facing p. 572.

H. G. Kugler, 1953, Vereinigung Schweizer Petroleum Geologen u. Ingenieure Bull., v. 20, no. 59, p. 32–33, 35 (table).

Toco Bay beds

Upper Cretaceous: Trinidad, British West Indies.

R. A. Liddle, 1946, The geology of Venezuela and Trinidad, 2d ed.: Ithaca, N. Y., Paleont. Research Inst., p. 713–715.

Todos Santos claystone member (of Sisquoc formation)

Miocene and Pliocene: California.

W. P. Woodring, M. N. Bramlette, and K. E. Lohman, 1943, Am. Assoc. Petroleum Geologists Bull., v. 27, no. 10, p. 1347–1352.

Tofield sand

Pleistocene: Alberta, Canada.

P. S. Warren, 1954, Royal Soc. Canada Trans., v. 48, sec. 4, p. 78.

Togo formation

Precambrian (Beltian): Washington.

Ian Campbell and J. S. Loofbourow, Jr., 1946, (abs.) Geol. Soc. America Bull., v. 57, no. 12, pt. 2, p. 1250.

Tolchaco gravels

Quaternary: Arizona.

Parry Reiche, 1937, Am. Jour. Sci., 5th ser., v. 34, no. 200, p. 130–134.

Toledo member (of Universidad formation)

Eocene, lower: Cuba.

J. F. de Albear, 1941, Soc. Cubana Ingenieros Rev., v. 36, p. 566, chart facing p. 564.

P. J. Bermudez, 1950, Soc. Cubana Historia Nat. Mem., v. 19, no. 3, p. 236.

Toledo series

Miocene: British Honduras and Guatemala.

L. H. Ower, 1922, Geology of British Honduras: Belize Independent, v. 8, no. 440; 1928, Jour. Geology, v. 36, no. 6, p. 501–502.

Toluca quartz monzonite

Ordovician: North Carolina and South Carolina.

W. R. Griffitts and W. C. Overstreet, 1952, Am. Jour. Sci., v. 250, no. 11, p. 779–783.

Tomah member (of Franconia formation)

Upper Cambrian: Wisconsin and Minnesota.

R. R. Berg, 1951, Minn. Geologist, v. 8, no. 4, p. 2.

Tombstonian series

Paleozoic (Devonic): Arizona.

[C. R.] Keyes, 1942, Pan-Am. Geologist, v. 77, no. 3, p. 228.

Tomera formation

Middle Pennsylvanian (Atokan-Desmoinesian): Nevada.

R. H. Dott, Jr., 1955, Am. Assoc. Petroleum Geologists Bull., v. 39, no. 11, p. 2243–2248, fig. 2.

Tomil agglomerate

Oligocene: Caroline Islands (Yap and Map).

Risaburo Tayama, 1935, Topography, geology, and coral reefs of the Yap Islands: Tohoku Univ., Inst. Geology and Paleontology Contr. in Japanese Language, no. 19, p. 29–30 [English translation in library of U. S. Geol. Survey, p. 25–26]; 1952, Coral reefs in the South Seas: Japan Hydrog. Office Bull., v. 11, p. 62–63, table 4, [English translation in library of U. S. Geol. Survey, p. 73–74].

Tömmer Bay group

Precambrian to Cambrian: Northeast Greenland.

H. P. Schaub, 1950, Meddel. om Grønland, bind 114, nr. 10, p. 14–16.

Tom Sauk limestone member (of Bonneterre formation)

Cambrian: Missouri.

G. F. Brightman, 1937, Mo. Acad. Sci. Proc., v. 3, no. 4, p. 120; 1938, Jour. Geology, v. 46, no. 3, p. 248–267.

Tonka formation

Mississippian and Pennsylvanian (Meramecian-Springeran): Nevada.

R. H. Dott, Jr., 1955, Am. Assoc. Petroleum Geologists Bull., v. 39, no. 11, p. 2222–2233, fig. 2.

Tonnancourt quartz monzonite

Precambrian (post-Keewatin): Quebec, Canada.

W. W. Longley, 1946, Quebec Dept. Mines Geol. Rept. 24, p. 14.

Tonnie siltstone member (of Chinitna formation)

Upper Jurassic: Alaska.

L. B. Kellum, 1945, N. Y. Acad. Sci. Trans., ser. 2, v. 7, no. 8, p. 203.

Topagoruk formation

Lower Cretaceous: Alaska (subsurface and surface).

George Gryc, W. W. Patton, Jr., and T. G. Payne, 1951, Washington Acad. Sci. Jour., v. 41, no. 5, p. 162–163.

Topley granite

Triassic(?): British Columbia, Canada.

1948, Canada Geol. Survey Map 932A.

Tormentine formation

Pennsylvanian: New Brunswick, Nova Scotia, and Prince Edward Island, Canada.

J. F. Caley and others, 1951, Am. Assoc. Petroleum Geologists Bull., v. 35, no. 2, p. 478.

W. C. Gussow, 1953, Am. Assoc. Petroleum Geologists Bull., v. 37, no. 7, p. 1758.

Torok formation

Lower Cretaceous: Alaska.

George Gryc, W. W. Patton, Jr., and T. G. Payne, 1951, Washington Acad. Sci. Jour., v. 41, no. 5, p. 160–162.

Toroweap formation

Permian: Arizona.

E. D. McKee, 1937, Carnegie Inst. Washington Year Book 36, p. 341–343; 1938, Pub. 492, p. 12–28.

Torrejonian age
Paleocene: North America.
H. E. Wood, 2d, and others, 1941, Geol. Soc. America Bull., v. 52, no. 1, p. 9, pl. 1.

Torres member (of Yeso formation)
Permian (Leonard series): New Mexico.
R. H. Wilpolt and others, 1946, U. S. Geol. Survey Oil and Gas Inv. Prelim. Map 61.

Tot-Gullwing Lakes granite
Precambrian: Ontario, Canada.
W. D. Harding, 1951, Ontario Dept. Mines Ann. Rept., v. 59, pt. 4, p. 12.

Totolapa facies
Lower Jurassic (Lias): Puebla, Mexico.
H. K. Erben, 1954, Soc. Geol. Mexicana Bol., tomo 17, no. 2, p. 35–36.

Totolzingo formation
Pleistocene, upper: Cuenca de Mexico, Mexico.
Helmut de Terra, 1947, Ciencia, v. 8, nos. 6–9, p. 155.

Touchet beds
Pleistocene: Washington.
R. F. Flint, 1938, Geol. Soc. America Bull., v. 49, no. 3, p. 493–499.

Tough Mountain quartzite
See Tough Nut quartzite.

Tough Nut quartzite
Lower Cambrian: California.
J. C. Hazzard, 1938 (abs.) Geol. Soc. America Proc. 1937, p. 241.

Tourelle sandstone
Lower Ordovician: Quebec, Canada.
H. W. McGerrigle, 1954, Canadian Mining Jour., v. 75, no. 8, p. 60.

Tovell member (of Mannville formation)
Lower Cretaceous: Alberta, Canada (subsurface).
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Townline Lake granodiorite
Precambrian (Laurentian): Minnesota.
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Townsend shale
Oligocene, lower: Washington.
J. W. Durham, 1942, Jour. Paleontology, v. 16, no. 1, p. 86.

Townsite flows
Precambrian: Northwest Territories (Mackenzie), Canada.
J. F. Henderson and I. C. Brown, 1950, Canadian Inst. Mining and Metallurgy Trans., v. 53, p. 420.

Towsley formation
Miocene, upper, and Pliocene, lower: California.
E. L. Winterer and D. L. Durham, 1954, Calif. Dept. Nat. Res., Div. Mines Bull. 170, map sheet 5.

Toyabe quartz latite
Pliocene(?): Nevada.
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Tracian stage

Late Cretaceous: California.

P. P. Goudkoff, 1945, Am. Assoc. Petroleum Geologists Bull., v. 29, no. 7, p. 987–990.

Traekpas formation

Upper Jurassic (Callovian): Northeast Greenland.

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Trail granodiorite

Jurassic: British Columbia, Canada.

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Trail City member (of Fox Hills formation)

Upper Cretaceous: South Dakota.

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Trail Hill sandstone (in Chinle formation)

Upper Triassic: Utah.

P. D. Proctor, 1953, Utah Geol. Mineralog. Survey Bull. 44, p. 10–11, 22–23.

Tranquilla shale

Eocene, upper: Panama Canal Zone and Panama.

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Tranquillon volcanics

Miocene, lower (Saucesian): California.

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Tremblay beds

Middle Ordovician: Quebec, Canada.

G. W. Sinclair, 1953, Am. Jour. Sci., v. 251, no. 12, p. 843, 844.

Trembling Mountain gneiss

Precambrian: Quebec, Canada.

F. D. Adams, 1895, Canada Geol. Survey Ann. Rept. 8, p. 42J.
F. F. Osborne, 1936, Am. Jour. Sci., ser. 5, v. 32, no. 192, p. 416–417.

Tren formation

Middle Cambrian: Sonora, Mexico.

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Tresner limestone

Pennsylvanian: Illinois.

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Tres Puentes formation

Miocene, upper: Tabasco and Chiapas, Mexico.

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G. P. Salas and Ernesto Lopez Ramos, 1951, Asociación Mexicana Geólogos Petroleros Bol., v. 3, nos. 1–2, p. 40.

Tres Vírgenes volcanics

Quaternary: Baja California, Mexico.

I. F. Wilson, 1948, Am. Assoc. Petroleum Geologists Bull., v. 32, no. 9, p. 1769.

Treytown Pond formation

Middle Cambrian: Newfoundland, Canada.

Frederick Betz, Jr., 1939, Newfoundland Geol. Survey Bull. 16, p. 16–17.

Tribune formation

Upper Cretaceous: British Columbia, Canada.

J. L. Usher, 1952, Canada Geol. Survey Bull. 21, p. 21.

Trinchera formation

Oligocene, upper: Dominican Republic.

W. M. Small, 1948, Seismol. Soc. America Bull., v. 38, no. 1, p. 26.
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Trinidad schists

Age unknown: Cuba.

R. H. Palmer, 1945, Jour. Geology, v. 53, no. 1, p. 5 (table 1), 6.

Trinidad Point calcareous clay

Oligocene, upper: Trinidad, British West Indies.

J. A. Cushman and H. H. Renz, 1947, Cushman Lab. Foram. Research Special Pub. 22, p. 2–3.

Troedsson Cliff formation

Middle Ordovician: North Greenland.

Lauge Koch, 1929, Meddel. om Grønland, bind 73, afd. 2, nr. 2, p. 235.

Trois-Rivières formation

Upper Cretaceous: Haiti.

Jacques Butterlin, 1954, Inst. Français d'Haïti Mém. 1, p. 52.

Troublesome formation

Oligocene: Colorado.

T. S. Lovering and E. N. Goddard, 1950, U. S. Geol. Survey Prof. Paper 223, p. 41.
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Trout Brook formation

Middle Cambrian: Nova Scotia, Canada.

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Trout River formation

Upper Devonian: Northwest Territories (Mackenzie), Canada.

C. H. Crickmay, 1953, New Spiriferidae from the Devonian of western Canada: Calgary, Canada, Imperial Oil Limited, p. 1, 11.

Trowbridge shale

Upper Jurassic: Oregon.

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Troy limestone member (of White Limestone formation)

Eocene, middle: Jamaica, British West Indies.

V. A. Zans, H. R. Versey, and J. B. E. Williams *in* V. A. Zans, 1955, Jamaica Geol. Survey Dept. Ann. Rept. 1953–54, p. 4.

Truckhaven rhyolite

Pliocene: California.

T. W. Dibblee, Jr., 1954, Calif. Dept. Nat. Res., Div. Mines Bull. 170, chap. 2, p. 24.

Trump conglomerate

Pliocene: Colorado.

J. H. Johnson, 1937, (abs.) Colorado Univ. Studies, v. 25, no. 1, p. 77.
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Tsegi formation

Quaternary: Arizona.

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Tualatin terrace gravels

Pleistocene: Oregon.

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Tucumcarian series

Mesozoic (Early Cretacic): New Mexico.

Charles Keyes, 1940, Pan-Am. Geologist, v. 74, no. 2, p. 105, 153–154.

Tuerto gravel

Quaternary: New Mexico.

C. E. Stearns, 1953, Geol. Soc. America Bull., v. 64, no. 4, p. 476, 477, pl. 1.

Tuff series

Cretaceous: Cuba.

M. G. Rutten, 1936, Geog. Geol. Meded. (Utrecht Univ.) Physiog.-Geol. Reeks, no. 11, p. 7–10.

Tuira formation

Miocene, middle: Panama.

Karl Sapper, 1937, Mittelamerika, Handbuch der regionalen Geologie: Heidelberg, Band 8, Abt. 4a, Heft 29, p. 132, 134 (correlation chart).

Tuktu formation

Lower Cretaceous: Alaska.

George Gryc, W. W. Patton, Jr., and T. G. Payne, 1951, Washington Acad. Sci. Jour., v. 41, no. 5, p. 162.

Tularosa Malpais lava

Recent: New Mexico.

L. R. Dice, 1940, Scientific Monthly, v. 50, p. 419–420.

Tulik basalt

Tertiary and Quaternary: Alaska (Aleutian Islands).

F. M. Byers, Jr., and others, 1947, U. S. Geol. Survey Alaskan Volcano Inv. Rept. 2, pt. 3, p. 28.

Tullos clay member (of Yazoo clay)

Eocene, upper: Louisiana.

H. N. Fisk, 1938, La. Dept. Conserv. Geol. Bull. 10, p. 78, 98–99.

† Tuluga member (of Schrader Bluff formation)

Upper Cretaceous: Alaska.

George Gryc, W. W. Patton, Jr., and T. G. Payne, 1951, Washington Acad. Sci. Jour., v. 41, no. 5, p. 166.

Tuluvak tongue (of Prince Creek formation)

Upper Cretaceous: Alaska.

George Gryc, W. W. Patton, Jr., and T. G. Payne, 1951, Washington Acad. Sci. Jour., v. 41, no. 5, p. 166.

Tumbez limestone

Middle Ordovician: Virginia.

B. N. Cooper, 1945, Va. Geol. Survey Bull. 66, p. 17, 133–134, 204.

Tumbledown gneiss
Age not stated: Maine.
Kern Jackson, 1953, Maine State Geologist Rept. 1951–1952, p. 66.

Tumco formation
Paleozoic or older: California.
P. C. Henshaw, 1942, Calif. Jour. Mines and Geology, v. 38, no. 2, p. 155–157, pl. 2.

Tunnel Creek glacial stage
Pleistocene (Wisconsin): Oregon.
T. P. Thayer, 1939, Oreg. State Dept. Geology and Mineral Res. Bull. 15, p. 20, 24–26.

Tunnel Hill member (of Brasso formation)
Miocene, lower or middle: Trinidad, British West Indies.
H. H. Renz, 1942, 8th Am. Sci. Cong. Proc., v. 4, p. 554.

Tunnel Mountain member (of Rocky Mountain formation)
Permian and Pennsylvanian(?): Alberta, Canada.
F. W. Beales, 1950, Canada Geol. Survey Paper 50–27, p. 6.

Tunnel Mountain member (of Rundle formation)
Mississippian and Pennsylvanian(?): Alberta, Canada.
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Turkey Mountain andesite
Quaternary: New Mexico.
R. F. Collins, 1949, Geol. Soc. America Bull., v. 60, no. 6, p. 1033.

Turnbull conglomerate
Miocene and Pliocene: California.
G. J. Bellemin, 1940, Am. Assoc. Petroleum Geologists Bull., v. 24, no. 4, p. 652 (fig. 2), 653, 655–656.

Turner cyclothem (including Turner limestone)
Pennsylvanian: Illinois.
R. C. Moore and others, 1944, Geol. Soc. America Bull., v. 55, no. 6, Chart 6, column 29.
C. L. Cooper, 1946, Ill. State Geol. Survey Bull. 70, p. 12, 16.

Turners Falls sandstone
Triassic: Massachusetts.
M. E. Willard, 1951, Bedrock geology of the Mount Toby quadrangle, Massachusetts: U. S. Geol. Survey Geol. Quadrangle Map [GQ 8].

Turner Valley member (of Tunnel Mountain formation)
Mississippian: Alberta, Canada (subsurface).
W. B. Gallup, 1951, Am. Assoc. Petroleum Geologists Bull., v. 35, no. 4, p. 809.

Turtle Mountain formation
Paleocene: Manitoba and Saskatchewan, Canada.
W. A. Johnston, 1934, Canada Geol. Survey Mem. 174, p. 11 (table).
R. T. D. Wickenden, 1945, Canada Geol. Survey Mem. 239, p. 50–51, geol. map.

Turure formation
Upper Cretaceous: Trinidad, British West Indies.
R. A. Liddle, [1928], The geology of Venezuela and Trinidad: Fort Worth, Tex., J. P. MacGowan, p. 439–441.

Tusas granite
Precambrian: New Mexico.
Evan Just, 1937, N. Mex. School Mines Bull. 13, p. 44–46.

Tuskahoma siliceous shale member (of Stanley formation)
Mississippian: Oklahoma.
August Goldstein, Jr., and T. A. Hendricks, 1953, Geol. Soc. America Bull., v. 64, no. 4, p. 431.

Tusonimo limestone (in Pacheta member of Lowell formation)
Lower Cretaceous: Arizona.
A. A. Stoyanow, 1949, Geol. Soc. America Mem. 38, p. 12.

Tvege banded psammitic/pelitic group
Precambrian: Northeast Greenland.
G. P. Leedal, 1952, Meddel. om Grønland, bind 142, nr. 6, p. 11–12, pl. 2.

Twelvemile Canyon member (of Arapien shale)
Upper Jurassic: Utah.
E. M. Spieker, 1946, U. S. Geol. Survey Prof. Paper 205–D, p. 122, 125.

Twilight Park conglomerate
Upper Devonian: New York.
C. S. Prosser, 1899, N. Y. State Geologist 17th Ann. Rept., p. 283–284.
G. H. Chadwick, 1940, N. Y. State Geol. Assoc. 16th Ann. Meeting Field Guide Leaflets, p. 2.

Twillingate granite
Post-Ordovician: Newfoundland, Canada.
D. M. Baird, 1953, Newfoundland Geol. Survey Rept. 1, p. 13, 14.

Twin Lakes glacial substage
Pleistocene (Wisconsin): Colorado, Wyoming, and New Mexico.
L. L. Ray, 1939, (abs.) Geol. Soc. America Bull., v. 50, no. 12, pt. 2, p. 2007; 1940, v. 51, no. 12, pt. 1, p. 1857–1858.

Twisselmann sandstone member (of Monterey formation)
Miocene, middle and upper: California.
H. H. Heikkila and G. M. MacLeod, 1951, Calif. Dept. Nat. Res., Div. Mines Special Rept. 6, p. 12, pl. 1.

Twist Gulch member (of Arapien shale)
Upper Jurassic: Utah.
E. M. Spieker, 1946, U. S. Geol. Survey Prof. Paper 205–D, p. 122, 124, 125.

Two Creeks forest bed
Pleistocene (Wisconsin): Wisconsin.
J. W. Goldthwait, 1907, Wis. Geol. Nat. History Survey Bull. 17, p. 61–62.
L. R. Wilson, 1932, Wis. Acad. Sci., Arts and Letters Trans., v. 27, p. 31–46.

Two Mile member (of Crockett formation)
Eocene (Claiborne): Texas.
G. D. Harris, 1941, Tex. Univ. Bur. Econ. Geology Min. Res. Survey Circ. 33, p. 13–14.

Twowells sandstone lentil (of Mancos shale)
Upper Cretaceous: New Mexico.
W. S. Pike, Jr., 1947, Geol. Soc. America Mem. 24, p. 22, 35–36.

Tyaughton group
Upper Triassic: British Columbia, Canada.
C. E. Cairnes, 1943, Canada Geol. Survey Paper 43–15, p. 4–5.

Tynemouth Creek formation
Upper Carboniferous: New Brunswick, Canada.
A. O. Hayes and B. F. Howell, 1937, Geol. Soc. America Special Paper 5, p. 118–119.

Tyroler series
Precambrian: Northeast Greenland.
G. P. Leedal, 1952, Meddel. om Grønland, bind 142, nr. 6, p. 11–21, pl. 2.

Tyrolerdal banded psammitic/pelitic group
Precambrian: Northeast Greenland.
G. P. Leedal, 1952, Meddel. om Grønland, bind 142, nr. 6, p. 11, 16–18, pl. 2.

Tyrolerdal group
Precambrian: Northeast Greenland.
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Tyson member (of Monastery formation)
Lower Cambrian: Vermont.
P. H. Osberg, 1952, Vt. Geol. Survey Bull. 5, p. 42, 43, 44.

Tyus member (of Weches formation)
Eocene, middle (Claiborne): Texas.
H. B. Stenzel, 1938, Tex. Univ. Bur. Econ. Geol. Pub. 3818, p. 20, 97, 100–104 [1939].

Uchi series
Precambrian: Ontario, Canada.
J. D. Bateman, 1940, Ontario Dept. Mines Ann. Rept., v. 48, pt. 8, p. 12–14.

Ucross formation
Recent(?): Wyoming.
L. B. Leopold and J. P. Miller, 1954, U. S. Geol. Survey Water-Supply Paper 1261, p. 10.

Udall limestone lentil (in Gueda Springs shale member of Wellington formation)
Permian: Kansas.
W. A. Ver Wiebe, 1937, Wichita Municipal Univ. Bull., v. 12, no. 5, p. 13–14.

Uintan age
Eocene: North America.
H. E. Wood, 2d, and others, 1941, Geol. Soc. America Bull., v. 52, no. 1, p. 10, pl. 1.

Ulatisian stage
Eocene, middle: California.
V. S. Mallory, 1953, (abs.) Jour. Paleontology, v. 27, no. 6, p. 903.

Ulen Quarry beds
Eocene, upper: Trinidad, British West Indies.
R. A. Liddle, [1928], The geology of Venezuela and Trinidad: Fort Worth, Tex., J. P. MacGowan, p. 456–457.

Ulvebjerg sandstones and tillites
Precambrian (Greenlandian): North Greenland.
Erdhart Frankl, 1954, Meddel. om Grønland, bind 116, nr. 2, p. 41–45, 56, 79, pl. 1.

Umatac andesite
Eocene: Mariana Islands (Guam).
Risaburo Tayama, 1952, Coral reefs in the South seas: Japan Hydrog. Office Bull., v. 11, p. 48, table 4 [English tanslation in library of U. S. Geol. Survey, p. 57, 58].

†Umiat formation
Lower and Lower(?) Cretaceous: Alaska (subsurface and surface).
George Gryc, W. W. Patton, Jr., and T. G. Payne, 1951, Washingon Acad, Sci. Jour., v. 41, no. 5, p. 162–163.

Uncle Israels granite
Age not stated: Maine.
G. H. Chadwick, 1944, N. Y. Acad. Sci. Trans., ser. 2, v. 6, no. 6, p. 172.

Uncle Sam porphyry
Upper Cretaceous or Tertiary, lower: Arizona.
B. S. Butler, E. D. Wilson, and C. A. Rasor, 1938, Ariz. Bur. Mines Bull. 143, Geol. Ser. 10, p. 24–25.

Uncompahgran system
Precambrian: Western North America.
N. A. E. Hinds, 1936, Carnegie Inst. Washington Pub. 463, p. 58, 134.

Underwood formation
Lower Mississippian: Indiana and Kentucky.
Guy Campbell, 1946, Geol. Soc. America Bull., v. 57, no. 9, p. 849–851, 858.

Underwood Mountain lava
Pliocene: Oregon.
W. D. Lowry and E. M. Baldwin, 1952, Geol. Soc. America Bull., v. 63, no. 1, pl. 2.

Union Church transition phase (of Tullos member of Yazoo clay)
Eocene, upper: Louisiana.
H. N. Fisk, 1938, La. Dept. Conserv. Geol. Bull. 10, p. 78, 99–100.

Union Island group
Precambrian (Proterozoic): Northwest Territories (Mackenzie), Canada.
C. H. Stockwell, 1936, Canada Geol. Survey Map 377A.

Union Station shale member (of Chanute formation)
Pennsylvanian (Missouri series): Missouri.
J. R. Clair, 1943, Mo. Geol. Survey and Water Res., 2d ser., v. 27, pl. 1.

Unison granodiorite
Precambrian: Quebec, Canada.
H. C. Cooke, W. F. James, and J. B. Mawdsley, 1931, Canada Geol. Survey Mem. 166, p. 133.

Unity group
Upper Devonian(?) (Oliverian magma series): New Hampshire.
C. A. Chapman, 1942, Geol. Soc. America Bull., v. 53, no. 6, p. 898.

Universal limestone member (of Dugger formation)
Pennsylvanian: Indiana.
C. E. Wier, 1951, U. S. Geol. Survey Coal Inv. Map C 9.

Universidad formation
Eocene, lower: Cuba.
P. J. Bermudez, 1937, Soc. Cubana Historia Nat. Mem., v. 11, no. 3, p. 163–169; 1950, Soc. Cubana Historia Nat. Mem., v. 19, no. 3, p. 231–233.

Upham dolomite
Upper Ordovician (Cincinnatian): New Mexico.
V. C. Kelley and Caswell Silver, 1952, N. Mex. Univ. Pubs. in Geology 4, p. 59–60, fig. 4.

Upham formation
Mississippian: New Brunswick, Canada.
F. J. Alcock, [1938], Canada Geol. Survey Mem. 216, p. 30–31.

Upper Amate formation
See Amate (Lower and Upper) formation.

Upper Medinilla limestone
See Medinilla (Lower and Upper) limestone.

Urbana phyllite
Precambrian(?): Maryland.
A. I. Jonas and G. W. Stose, 1938, Washington Acad. Sci. Jour., v. 28, no. 8, p. 346.

Uslika formation
Lower Cretaceous: British Columbia, Canada.
E. F. Roots, 1948, Canada Geol. Survey Paper 48–5, p. 14.

Usine limestone
Pleistocene: Guadeloupe (Grande Terre), French West Indies.
J. W. W. Spencer, 1901, Geol. Soc. London, Quart. Jour., v. 57, p. 510, 512; 1902, v. 58, p. 350.

Ute Canyon tongue (of Cliff House sandstone)
Upper Cretaceous: New Mexico.
P. T. Hays and A. D. Zapp, 1955, U. S. Geol. Survey Oil and Gas Inv. Map OM 144.

Ute Pass dolomite
Upper Cambrian(?): Colorado.
J. C. Maher, 1950, U. S. Geol. Survey Oil and Gas. Inv. Prelim. Chart 39.

Utica clay
Pennsylvanian: Illinois.
H. R. Wanless, 1939, Geol. Soc. America Special Paper 17, p. 25–26, 106.

Uvas basalt
Miocene: New Mexico.
F. E. Kottlowski, 1953, N. Mex. Geol. Soc. Guidebook 4th Field Conf., p. 32 (map), 144, 148 (chart).

Uvas conglomerate member (of Tejon formation)
Eocene: California.
J. G. Marks, 1941, (abs.) Geol. Soc. America Bull., v. 52, no. 12, pt. 2, p. 1922.

Uwekahuna ash
Pleistocene or Recent: Hawaiian Islands (Hawaii).
J. B. Stone, 1926, Bernice P. Bishop Mus. Bull. 33, p. 27–28.

Uzpanapa conglomerate
Eocene, lower: Vera Cruz, Mexico.
J. B. Gibson, 1936, Soc. Geol. Mexicana Bol., tomo 9, no. 5, correlation chart.
Luis Benavides G., 1953, Congreso Cient. Mexicano Mem., v. 3, p. 199.

Vaca Triste sandstone member (of Salado formation)
Permian (Ochoa): New Mexico (subsurface).
J. E. Adams, 1944, Am. Assoc. Petroleum Geologists Bull., v. 28, no. 11, p. 1610.

Vacaville shale
Eocene, middle: California.
C. W. Merriam and F. E. Turner, 1937, Calif. Univ. Pubs., Dept. Geol. Sci. Bull., v. 24, no. 6, p. 96.

Vadito formation
Precambrian: New Mexico.
Arthur Montgomery, 1953, N. Mex. State Bur. Mines Min. Res. Bull. 30, p. 21.

Valders glacial substage
Pleistocene (Wisconsin): Wisconsin.
F. T. Thwaites, 1943, Geol. Soc. America Bull., v. 54, no. 1, p. 121, 136–141.

Vallecito basalt
Quaternary: New Mexico.
H. T. U. Smith, 1937, (abs.) Geol. Soc. America Proc. 1936, p. 103.

Vallecitos rhyolites
Precambrian: New Mexico.
Evan Just, 1937, N. Mex. School Mines Bull. 13, p. 44.

Valle de Angeles formation
Upper Cretaceous or Tertiary, lower: Honduras.
R. H. Carpenter, 1954, Geol. Soc. America Bull., v. 65, no. 1, p. 28–29.

Vallejo formation
Eocene or Oligocene: Colorado.
J. E. Upson, 1941, Am. Jour. Sci., v. 239, no. 8, p. 577–588.

Valley Mountain facies (of Flagstaff formation)
Paleocene, upper: Utah.
W. N. Gilliland, 1951, Nebr. Univ. Studies, new ser., no. 8, p. 26–28.

Valley View member (of Curtin limestone)
Middle Ordovician (Mohawkian): Pennsylvania.
G. M. Kay, 1943, Econ. Geology, v. 38, no. 3, p. 194, 197.

Valmont dolomite
Upper Ordovician: New Mexico.
L. C. Pray, 1953, Am. Assoc. Petroleum Geologists Bull., v. 37, no. 8, p. 1906–1911.

Valmy formation
Middle(?) Ordovician: Nevada.
R. J. Roberts, 1951, Geology of the Antler Peak quadrangle, Nevada: U. S. Geol. Survey Geol. Quadrangle Map [GQ 10].

Val Verde tonalite
Jurassic(?): California.
R. W. Wilson, 1937, Am. Mineralogist, v. 22, no. 2, p. 122–130.

Vamp Creek granodiorite
Precambrian: Manitoba, Canada.
Jorma Kalliokoski, 1952, Canada Geol. Survey Mem. 270, p. 26.

Van Bibber shale member (of South Platte formation)
Lower Cretaceous: Colorado.
K. M. Waagé, 1955, U. S. Geol. Survey Prof. Paper 274–B, p. 31–33.

Vandusen cyclothem (including Vandusen clay, shale, and sandstone)
Pennsylvanian (Pottsville): Ohio.
R. E. Lamborn, C. R. Austin, and Downs Schaaf, 1938, Ohio Geol. Survey, ser. 4, Bull. 39, p. 88–89.
N. K. Flint, 1951, Ohio Geol. Survey, ser. 4, Bull. 48, p. 29.

Vanesti tongue
Upper Cretaceous: Alberta, Cnada.
A. W. Nauss, 1945, Am. Assoc. Petroleum Geologists Bull., v. 29, no. 11, p. 1620–1621.

Vanguard formation
Jurassic: Saskatchewan, Canada (subsurface).
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R. L. Milner and G. E. Thomas, 1954, Western Canada sedimentary basin: Tulsa, Okla., Am. Assoc. Petroleum Geologists, p. 263–267.

Vanhem formation

Pleistocene: Kansas.

C. W. Hibbard, 1949, Mich. Univ. Mus. Paleontology Contr., v. 7, no. 4, p. 84–86.

Vann quartzite

Lower Cambrian: North Carolina.

G. W. Stose and A. J. Stose, 1947, Am. Jour. Sci., v. 245, no. 10, p. 626, 627.

Van Oser member (of Jordan sandstone)

Upper Cambrian (St. Croixian): Minnesota.

C. R. Stauffer, G. M. Schwartz, and G. A. Thiel, 1938, (abs.) Geol. Soc. America Bull., v. 49, no. 12, pt. 2, p. 1902; 1939, v. 50, no. 8, p. 1240.

Van Valkenburg beds

[Recent?]: Florida.

E. H. Sellards, 1940, Geol. Soc. Am. Bull., v. 51, no. 3, p. 381–385.

Van Vleck sands

Oligocene: Texas (subsurface).

Alexander Deussen and K. D. Owen, 1939, Am. Assoc. Petroleum Geologists Bull., v. 23, no. 11, p. 1634.

Vardekløft formation

Upper Jurassic (Callovian): Northeast Greenland.

Alfred Rosenkrantz *in* Lauge Koch, 1929, Meddel. om Grønland, bind 73, afd. 2, nr. 1, p. 145–146.

Vaseaux formation

Carboniferous(?): British Columbia, Canada.

H. S. Bostock, 1940, Canada Geol. Survey Map 341A.

Vatia trachyte

Pliocene or Pleistocene, lower: Samoa Islands (Tutuila).

R. A. Daly, 1924, Carnegie Inst. Washington Pub. 340, p. 108–110, 129–130.

Vauclin tuffs

Miocene: Martinique, French West Indies.

Jean Giraud, 1918, Esquisse géologique de la Martinique avec carte géologique: Hanoi-Haiphong, Imprimerie d'Extrême-Orient, p. 12.

Alfred Senn, 1940, Am. Assoc. Petroleum Geologists Bull., v. 24, no. 9, p. 1581, 1596.

Vecol limestone

Paleozoic (Devonic): Arizona.

[C. R.] Keyes, 1942, Pan-Am. Geologist, v. 77, no. 3, p. 228.

Veleno member (of Cook Mountain formation)

Eocene (Claiborne): Texas, and Tamaulipas, Mexico.

J. M. Patterson, 1942, Am. Assoc. Petroleum Geologists Bull., v. 26, no. 2, p. 259, 262–263.

Velpen limestone

Pennsylvanian: Indiana.

J. M. Weller, L. G. Henbest, and C. O. Dunbar *in* C. O. Dunbar and L. G. Henbest, 1942, Ill. State Geol. Survey Bull. 67, p. 32 [1943].

C. L. Cooper, 1946, Ill. State Geol. Survey Bull. 70, p. 16.

Venada beds

Mississippian (Meramecian): Sonora, Mexico.

J. M. Weller and others, 1948, Geol. Soc. America Bull., v. 59, no. 2, p. 136, Chart 5, column 36.

Venado formation
Upper Cretaceous (Chico): California.
J. M. Kirby, 1943, Am. Assoc. Petroleum Geologists Bull., v. 27, no. 3, p. 287–289.

Veniella shale
Upper Cretaceous: Jamaica, British West Indies.
L. J. Chubb, 1955, Geol. Mag., v. 92, no. 3, p. 185–186.

Venteran substage
Pennsylvanian (Desmoinesian): Iowa, Kansas, Missouri, Nebraska, and Oklahoma.
W. V. Searight and others, 1953, Am. Assoc. Petroleum Geologists Bull., v. 37, no. 12, p. 2748–2749.

Venturian stage
Pliocene: California.
Manley Natland, 1953, Pacific Petroleum Geologist, v. 7, no. 2, p. 2.

Venus formation
Precambrian (Chuaran): Arizona.
Charles Keyes, 1938, Pan-Am. Geologist, v. 70, no. 2, p. 107, 112.

Verda member (of Yazoo clay)
Eocene, upper: Louisiana.
H. N. Fisk, 1938, La. Dept. Conserv. Geol. Bull. 10, p. 78, 100–102.

Veredas group
Pennsylvanian (Missouri series): New Mexico.
M. L. Thompson, 1942, N. Mex. State Bur. Mines Min. Res. Bull. 17, p. 27, 57–60.

Verendrye member (of Pierre shale)
Upper Cretaceous: South Dakota.
W. V. Searight, 1937, S. Dak. State Geol. Survey Rept. Inv. 27, p. 25–26, pl. 3.

Vermilion-Bluett Lakes conglomerate
Precambrian: Ontario, Canada.
W. D. Harding, 1951, Ontario Dept. Mines Ann. Rept., v. 59, pt. 4, p. 19–22.

Vermilion-Centrefire Lakes volcanics
Precambrian: Ontario, Canada.
W. D. Harding, 1951, Ontario Dept. Mines Ann. Rept., v. 59, pt. 4, p. 16–17.

Vermont quartz diorite
Pre-Cretaceous(?): California.
G. J. Neuerburg, 1953, Calif. Dept. Nat. Res., Div. Mines Special Rept. 33, p. 7 (table 1), 10–11, pl. 1.

Vermont sequence
Middle Ordovician to Upper Devonian: Vermont.
W. S. White and R. H. Jahns, 1950, Jour. Geology, v. 58, no. 3, p. 182, 191–192, fig. 2.

Verne cyclical formation (including Verne limestone or shale member)
Lower Pennsylvanian: Michigan.
W. A. Kelly, 1936, Mich. Dept. Conserv. Geol. Survey Div. Pub. 40, Geol. Ser. 34, pt. 2, p. 159, 166, 177, 190.

Verneuil granite
Precambrian: Quebec, Canada.
P. E. Imbault, 1951, Quebec Dept. Mines Prelim. Rept. 250, p. 7.
S. W. Holmes, 1952, Quebec Dept. Mines Prelim. Rept. 271, p. 2, 6.

Verónica [formation]
Miocene: Istmo de Tehuantepec, Mexico.
J. B. Gibson, 1936, Soc. Geol. Mexicana Bol., tomo 9, no. 5, correlation chart.

Verulam formation
Ordovician: Ontario, Canada.
B. A. Liberty, 1955, Geol. Assoc. Canada Proc., v. 7, pt. 1, p. 144.

Via formation
Miocene, upper: Dominican Republic.
W. M. Small, 1948, Seismol. Soc. America Bull., v. 38, no. 1, p. 26.
P. J. Bermudez, 1949, Cushman Lab. Foram. Research Special Pub. 25, p. 31.

Vick formation
Lower Cretaceous: Alabama.
L. C. Conant, 1946, Am. Assoc. Petroleum Geologists Bull., v. 30, no. 5, p. 711.

Victoria gabbroic anorthosite
Precambrian: Ontario, Canada.
J. M. Harrison, 1944, Geol. Soc. America Bull., v. 55, no. 12, p. 1409.

Victoria River series
Pre-Devonian: Newfoundland, Canada.
N. E. Brown, 1953 (abs.) Canadian Mining Jour., v. 74, no. 6, p. 98.

Victorville quartz monzonite
Upper Jurassic: California.
W. J. Miller, 1944, Calif. Jour. Mines and Geology, v. 40, no. 1, p. 105–106.

Victory member (of Grand Detour formation)
Middle Ordovician: Illinois.
J. S. Templeton and H. B. Willman, 1952, Tri-State Geol. Soc. Guidebook 16th Ann. Field Conf., fig. 3.

Viesca member (of Weches formation)
Eocene, middle (Claiborne): Texas.
H. B. Stenzel, 1938, Tex. Univ. Bur. Econ. Geol. Pub. 3818, p. 20, 97, 104–107 [1939].

View Creek group
Permian or older: Northwest Territories (Ellesmere Island), Canada.
R. G. Blackadar, 1954, Canada Geol. Survey Paper 53–10, p. 12–13.

Vigo limestone member (of Shelburn formation)
Pennsylvanian: Indiana.
C. E. Wier, 1952, Ind. Geol. Survey Prelim. Coal Map 1.
Courtney Waddell, 1954, U. S. Geol. Survey Coal Inv. Map C 17.

Viking sand or sandstone
Cretaceous: Alberta, Canada (subsurface).
S. E. Slipper *in* D. B. Dowling, S. E. Slipper, and F. H. McLearn, 1919, Canada Geol. Survey Mem. 116, p. 24.
D. B. Layer, 1949, Am. Assoc. Petroleum Geologists Bull., v. 33, no. 4, p. 575, 578–579.

Vildtal series
Middle Devonian: Northeast Greenland.
Heinrich Butler, 1954, Meddel. om Grønland, bind 116, nr. 7, p. 28–29, 31–33, 57–58, 65–69, 83–84, 108, 110–111.

Ville Guay conglomerate
Lower Ordovician: Quebec, Canada.
Franco Rasetti, 1946, Geol. Soc. America Bull., v. 57, no. 7, p. 700.

Vine Hill sandstone
Paleocene: California.
C. E. Weaver, 1953, Wash. [State] Univ. Pubs. in Geology, v. 7, p. 19 (chart), 21–30.

Vinini formation
Lower and Middle Ordovician: Nevada.
C. W. Merrian and C. A. Anderson, 1941 (abs.) Geol. Soc. America Bull., v. 52, no. 12, pt. 2, p. 1953; 1942, v. 53, no. 12, pt. 1, p. 1693–1698.

Violin breccia
Miocene to Pliocene: California.
J. C. Crowell, 1954, Calif. Dept. Nat. Res., Div. Mines Bull. 170, map sheet 7.

Vipont limestone
Carboniferous(?): Utah.
V. E. Peterson, 1942, Econ. Geology, v. 37, no. 6, p. 471 (table 1).

Virgin Creek member (of Pierre shale)
Upper Cretaceous: South Dakota.
W. V. Searight, 1937, S. Dak. State Geol. Survey Rept. Inv. 27, p. 35–43, pl. 3.

Virginian Ridge formation
Lower and Middle Cretaceous: Washington.
J. D. Barksdale, 1948, Northwest Science, v. 22, no. 4, p. 165, 169–171.

Virgin Spring phase (of Amargosa choas)
Post-Miocene(?): California.
L. F. Noble, 1940, (abs.) Geol. Soc. America Bull., v. 51, no. 12, pt. 2, p. 1936; 1941, v. 52, no. 7, p. 965–968.

Vista member (of White River formation)
Oligocene (Whitneyan): Colorado.
E. C. Galbreath, 1953, Kans. Univ. Paleont. Contr. 13, Vertebrata, art. 4, p. 15–18.

Vista Bella member (of Mount Moriah group)
Eocene (Jackson): Trinidad, British West Indies.
H. G. Kugler and others [1939], Geological conference in Trinidad; notes on the excursions: Petroleum Assoc. Trinidad, p. 9.

Vitrefrax formation
Paleozoic or older: California.
P. C. Henshaw, 1942, Calif. Jour. Mines and Geology, v. 38, no. 2, p. 153–155, pl. 2.

Volcano Bay basalt flow
Quaternary: Alaska.
G. C. Kennedy and H. H. Waldron, 1947, U. S. Geol. Survey Alaskan Volcano Inv. Rept. 2, pt. 2, p. 15, pl. 2 (geol. map).

Volta formation
Upper Cretaceous: California.
R. D. Reed, 1943, Calif. Dept. Nat. Res., Div. Mines Bull. 118, pt. 2, p. 109, table 6 [preprint 1941].

Voss shale member (of Belle Plains formation)
Permian (Leonard? age): Texas.
R. C. Moore *in* M. G. Cheney, 1948 Abilene Geol. Soc. [Guidebook] Spring Field Trip, June 11–12, sheets 3, 4.
R. C. Moore, 1949, U. S. Geol. Survey Oil and Gas Inv. Prelim. Map 80, sheets 1, 2.

Waawaa volcanics

Pleistocene(?): Hawaiian Islands (Hawaii).

C. K. Wentworth, 1938, Hawaiian Volcano Observatory 3d Special Rept., p. 86–87, 145–146.

H. T. Stearns and G. A. Macdonald, 1946, Hawaii Div. Hydrography Bull. 9, 143–146.

Wabamun formation

Devonian: Alberta, Canada (subsurface).

D. B. Layer, chm., 1950, Am. Assoc. Petroleum Geologists Bull., v. 34, no. 9, p. 1810–1813.

Wabigoon volcanics

Precambrian (Keewatin): Ontario, Canada.

F. J. Pettijohn, 1939, Geol. Soc. America Bull., v. 50, no. 5, p. 764.

Jack Satterly, 1943, Ontario Dept. Mines Ann. Rept., v. 50, pt. 2, p. 26, 31.

Wabiskaw member (of Clearwater formation)

Lower Cretaceous: Alberta, Canada (subsurface).

P. C. Badgley, 1952, Canada Geol. Survey Paper 52–11, p. 6.

Waddell sandstone

Middle Ordovician: Texas (subsurface).

Taylor Cole, C. D. Cordry, and H. A. Hemphill, 1942, Am. Assoc. Petroleum Geologists Bull., v. 26, no. 2, p. 280, 281–282.

Waddy-Contact Lakes granite

Precambrian: Saskatchewan, Canada.

A. R. Byers, 1949, Saskatchewan Geol. Survey (Precambrian Geology Ser.) Rept. 1, p. 14–15.

Wadin group

Devonian(?), Mississippian, and Pennsylvanian(?): British Columbia, Canada.

H. Gabrielse, 1955, Canada Geol. Survey Paper (Prelim. Map) 54–10.

Wagonroad stage

Paleocene: Utah.

C. L. Gazin, 1941, U. S. Natl. Mus. Proc., v. 91, no. 3121, p. 3–4.

Wagontongue formation

Miocene, upper: Colorado.

J. H. Johnson, 1937, (abs.) Colorado Univ. Studies, v. 25, no. 1, p. 77.

J. T. Stark and others, 1949, Geol. Soc. America Mem. 33, p. 68–69.

Wagwater group

Eocene, lower: Jamaica, British West Indies.

C. A. Matley, 1940, Geol. Soc. London Abs. Proc. 1373, p. 100; 1951, Geology and physiography of the Kingston district, Jamaica: Inst. of Jamaica, p. 31, 56, geol. map.

Wahluke formation

Pleistocene: Washington.

G. F. Beck, 1936, Mineralogist, v. 4, no. 11, p. 12, 14.

Wahwah limestone

Lower Ordovician (Canadian): Utah and Nevada.

L. F. Hintze, 1951, Utah Geol. Mineralog. Survey Bull. 39, p. 16–17.

Waiaaka basaltic andesite

Pleistocene(?): Hawaiian Islands (Maui).

G. A. Macdonald *in* H. T. Stearns and G. A. Macdonald, 1942, Hawaii Div. Hydrography Bull. 7, p. 231, 243–244.

Waiau formation
[Quaternary]: Hawaiian Islands (Hawaii).
C. K. Wentworth, 1938, Hawaiian Volcano Observatory 3d Special Rept., p. 36, 57–86.

Waihu fanglomerate
Pleistocene: Hawaiian Islands (Hawaii).
C. K. Wentworth, 1939, (abs.) Geol. Soc. America Bull., v. 50, no. 12, pt. 2, p. 1942.
H. T. Stearns, 1945, Geol. Soc. America Bull., v. 56, no. 3, p. 270–273.

Wailuanui basalt
Pleistocene(?): Hawaiian Islands (Maui).
H. T. Stearns *in* H. T. Stearns and G. A. Macdonald, 1942, Hawaii Div. Hydrography Bull. 7, p. 94, 95.

Wailuku volcanic series
Pliocene(?): Hawaiian Islands (Maui).
H. T. Stearns *in* H. T. Stearns and G. A. Macdonald, 1942, Hawaii Div. Hydrography Bull. 7, p. 159, 160–172.

Waimea conglomerate
Age unknown: Hawaiian Islands (Kauai).
N. E. A. Hinds, 1930, Bernice P. Bishop Mus. Bull. 71, p. 56, 65.

Waimea formation
[Quaternary]: Hawaiian Islands (Hawaii).
C. K. Wentworth, 1938, Hawaiian Volcano Observatory 3d Special Rept., p. 38–40.

Waimea volcanic series
See **Waimea Canyon volcanic series.**

Waimea Canyon volcanic series
Pliocene(?): Hawaiian Islands (Kauai).
H. T. Stearns, 1946, Hawaii Div. Hydrography Bull. 8, p. 85–89.
G. A. Macdonald, 1949, Geol. Soc. America Bull., v. 60, no. 10, p. 1555, 1557.

Waiokamilo basalt
Pleistocene(?): Hawaiian Islands (Maui).
H. T. Stearns *in* H. T. Stearns and G. A. Macdonald, 1942, Hawaii Div. Hydrography Bull. 7, p. 95, 96.

Wakefield marble
Precambrian(?): Maryland and Pennsylvania.
A. I. Jonas and G. W. Stose, 1938, Washington Acad. Sci. Jour., v. 28, no. 8, p. 346.

Walden Hollow glacial stage
Pleistocene: Colorado.
R. L. Ives, 1942, Geog. Review, v. 32, no. 3, p. 450.

Walderston limestone member (of White Limestone formation)
Oligocene, upper: Jamaica, British West Indies.
V. A. Zans, H. R. Versey, and J. B. E. Williams *in* V. A. Zans, 1955, Jamaica Geol. Survey Dept. Ann. Rept. 1953–54, p. 4.

Waldo granite
Devonian or Carboniferous: Maine.
J. M. Trefethen, 1941, (abs.) Geol. Soc. America Bull., v. 52, no. 12, pt. 2, p. 2020.

Walgreen member (of Grand Detour formation)
Middle Ordovician: Illinois.
J. S. Templeton and H. B. Willman, 1952, Tri-State Geol. Soc. Guidebook 16th Ann. Field Conf., fig. 3.

Walhalla formation
Precambrian (Kwaguntan): Arizona.
Charles Keyes, 1938, Pan-Am. Geologist, v. 70, no. 2, p. 107, 114.

Walker group
Lower and Middle Ordovician: British Columbia, Canada.
H. Gabrielse, 1955, Canada Geol. Survey Paper (Prelim. Map) 54–10.

Walker Plain basalt
Miocene: California.
Anna Hietanen, 1951, Geol. Soc. America Bull., v. 62, no. 6, p. 586–587, pl. 1.

Walkers beds (in Scotland formation)
Eocene, lower: Barbados, British West Indies.
Alfred Senn, 1940, Am. Assoc. Petroleum Geologists Bull., v. 24, no. 9, p. 1552–1553.

Wall member (of Dunleith formation)
Middle Ordovician: Illinois.
J. S. Templeton and H. B. Willman, 1952, Tri-State Geol. Soc. Guidebook 16th Ann. Field Conf., p. 24, figs. 3, 12.

Wallace group
Mesozoic and Carboniferous(?): British Columbia, Canada.
Leopold Reinecke, 1915, Canada Geol. Survey Mem. 79, p. 33–34.

Wallace shale
Cretaceous (Cretacic): Kansas.
[C. R.] Keyes, 1941, Pan-Am. Geologist, v. 76, no. 5, p. 374–376.

Wallace Lake granite
Precambrian: Manitoba, Canada.
G. A. Russell, 1948, Manitoba Dept. Mines and Nat. Res. Prelim. Rept. 47–1, p. 5–6.

Wallace Ledge formation
Lower Cambrian: Vermont.
E. P. Kaiser, 1945, Geol. Soc. America Bull., v. 56, no. 12, pt. 1, p. 1089.

Walston silt
Pleistocene (Yarmouth): Maryland.
W. C. Rasmussen and T. H. Slaughter, 1955, Md. Dept. Geology, Mines and Water Res. Bull. 16, p. 114–117.

Walter Johnson sandstone member (of Nowata shale)
Pennsylvanian (Des Moines): Kansas, Missouri, and Oklahoma.
J. M. Jewett, 1941, Kans. State Geol. Survey Bull. 38, pt. 11, p. 292, 335.

Wamego shale
Pennsylvanian: Kansas.
G. E. Condra and E. C. Reed, 1943, Nebr. Geol. Survey Bull. 14, p. 42, 43, 44.

Wandel Valley limestone
Lower Ordovician (Canadian): North Greenland.
J. C. Troelsen, 1949, Meddel. om Grønland, bind 149, nr. 2, p. 15–18, pl. 1.

Wanette division
Permian: Oklahoma and Kansas.
D. A. Green, 1937, Am. Assoc. Petroleum Geologists Bull., v. 21, no. 12, p. 1518–1521.

Wanipigow diorite
Precambrian: Manitoba, Canada.
G. A. Russell, 1948, Manitoba Dept. Mines and Nat. Res. Prelim. Rept. 47–1, p. 8.

Wanship formation
Upper Cretaceous: Utah.
A. J. Eardley, 1952, Utah Geol. Soc. Guidebook 8, p. 53–54.

Waramaug formation
Precambrian (?): Connecticut.
R. M. Gates *in* R. M. Gates and W. C. Bradley, 1952, Conn. Geol. Nat. History Survey Misc. Ser. 5, p. 8–14.

Ward Cove limestone member (of Cliffield formation)
Middle Ordovician: Virginia.
B. N. Cooper and C. E. Prouty, 1943, Geol. Soc. America Bull., v. 54, no. 6, p. 863.

Wardell formation
Middle Ordovician: Virginia.
B. N. Cooper and C. E. Prouty, 1943, Geol. Soc. America Bull., v. 54, no. 6, p. 873–875.

Warden-Munroe complex
Precambrian: Ontario, Canada.
Jack Satterly, 1952, Ontario Dept. Mines Ann. Rept., v. 60, pt. 8, p. 17.

Wardlaw shale
Carboniferous (?): Utah.
V. E. Peterson, 1942, Econ. Geology, v. 37, no. 6, p. 471 (table 1).

Wareham Lake series
Precambrian: Quebec, Canada.
Jacques Claveau, 1949, Quebec Dept. Mines Geol. Rept. 37, p. 24, 25.

Warman quartz monzonite
Precambrian (Algoman): Minnesota.
M. S. Woyski, 1949, Geol. Soc. America Bull., v. 60, no. 6, p. 1002, 1011, pl. 1.

Warmington limestone member (of Elephant Butte formation)
Pennsylvanian (Des Moines): New Mexico.
M. L. Thompson, 1942, N. Mex. State Bur. Mines Min. Res. Bull. 17, p. 27, 49.

Warm Springs formation
Middle Jurassic: Oregon.
R. L. Lupher, 1941, Geol. Soc. Amerca Bull., v. 52, no. 2, p. 227, 249.

Warrens Ranch latite
Tertiary: Arizona.
W. H. Brown, 1939, Geol. Soc. Amerca Bull., v. 50, no. 5, p. 742.

Warrenton agglomerate member (of Catoctin series)
Precambrian: Virginia.
A. S. Furcron, 1939, Va. Geol. Survey Bull. 54, p. 20–22.

Warwick eolianite
Pleistocene: Bermuda Islands.
R. W. Sayles, 1931, Am. Acad. Arts and Sci. Proc., v. 66, no. 11, p. 395.

Wasatchian age
Eocene: North America.
H. E. Wood, 2d, and others, 1941, Geol. Soc. America Bull., v. 52, no. 1, p. 9, 10, pl. 1.

Wasekwan series
Precambrian: Manitoba, Canada.
J. D. Bateman, 1942, Am. Jour. Sci., v. 240, no. 11, p. 789–808.

Washikemba formation
Cretaceous: Bonaire, Netherlands West Indies.
P. J. Pijpers, 1931, Leidsche Geol. Meded., Deel 5, p. 704–705.

Waskada formation
Upper Jurassic: Manitoba, Canada; and North Dakota.
D. F. Stott, 1955, Manitoba Dept. Mines and Nat. Res. Pub. 54–2, p. 26–27, 38, 47–48.

Waswanipi granite
Precambrian: Quebec, Canada.
J. E. Gilbert, 1947, Quebec Dept. Mines Prelim. Rept. 210, p. 6.

Watchorn formation
Mississippian (Meramec group): Kansas (subsurface).
Wallace Lee, 1940, Kans. State Geol. Survey Bull. 33, p. 84–89.

Waterboot basalt
Tertiary: Alaska.
W. M. Cady and others, 1955, U. S. Geol. Survey Prof. Paper 268, p. 55–56.

Water Canyon formation
Lower Devonian: Utah and Idaho.
J. S. Williams, 1948, Geol. Soc. America Bull., v. 59, no. 11, p. 1138–1139.

Watering Trough shale
Upper Devonian (Conewango): Pennsylvania.
W. M. Laird, 1941, Pa. Topog. and Geol. Survey Progress Rept. 126, p. 11 (footnote).

Waterloo lava
Devonian or younger: Quebec, Canada.
H. C. Cooke, 1950, Canada Geol. Survey Mem. 257, p. 93.

Waterman gneiss
Upper Paleozoic(?): California.
O. E. Bowen, Jr., 1954, Calif. Dept. Nat. Res., Div. Mines Bull. 165, p. 16 (fig. 2), 17–23.

Waterways formation
Upper Devonian: Alberta, Canada.
P. S. Warren, 1933, Canadian Field Naturalist, v. 47, no. 8, p. 149.

Watrous formation
Jurassic: Saskatchewan, Canada (subsurface).
R. L. Milner and G. E. Thomas, 1954, Western Canada sedimentary basin: Tulsa, Okla., Am. Assoc. Petroleum Geologists, p. 255–257.

Watson Ledge quartz syenite
Carboniferous(?) (White Mountain magma series): New Hampshire.
Alonzo Quinn, 1937, Geol. Soc. America Bull., v. 48, no. 3, p. 388.

Watt Mountain formation
Devonian: Alberta, Canada (subsurface).
J. Law, 1955, Alberta Soc. Petroleum Geologists Jour., v. 3, no. 6, p. 82–83.

Wauwatosa formation
Silurian: Wisconsin.
F. B. Phleger, Jr., 1937, Harvard Coll. Mus. Comp. Zool. Bull., v. 80, no. 11, p. 420.

Wearyman dolomite member (of Minturn formation)
Pennsylvanian: Colorado.
Ogden Tweto, 1949, Colo. Sci. Soc. Proc., v. 15, no. 4, p. 152, 198–199.

Weberg formation
Middle Jurassic: Oregon.
R. L. Lupher, 1941, Geol. Soc. America Bull., v. 52, no. 2, p. 227, 248.

Weedon granite and aplite
Devonian(?): Quebec, Canada.
J. E. Hawley and others, 1945, Canadian Inst. Mining and Metallurgy Trans., v. 48, p. 372 (geol. map), 373 (table).

Weedon porphyry
Pre-Ordovician(?): Quebec, Canada.
G. V. Douglas, 1941, Quebec Dept. Mines Geol. Rept. 8, p. 17, 18.

Weir cyclothem or formation
Pennsylvanian (Des Moines): Kansas.
G. E. Abernathy, 1937, Kans. Geol. Soc. Guidebook 11th Ann. Field Conf., p. 18, 20, 22; 1938, Kans. Acad. Sci. Trans., v. 41, p. 193, 195.

Weissport member (of Tully formation)
Upper Devonian: Pennsylvania.
R. E. Stevenson and W. S. Skinner, 1949, Pa. Acad. Sci. Proc., v. 23, p. 30.

Wekuskoan group
Precambrian: Manitoba, Canada.
J. F. Wright, 1931, Canada Geol. Survey Summ. Rept. 1930, pt. C, p. 8.

Welcome formation
Eocene, upper: California.
Martin Van Couvering and H. B. Allen, 1943, Calif. Dept. Nat. Res., Div. Mines Bull., 118, pt. 3, p. 496–500.

Weldonian stage
Late Cretaceous: California.
P. P. Goudkoff, 1945, Am. Assoc. Petroleum Geologists Bull., v. 29, no. 7, p. 990–991.

Welge sandstone member (of Wilberns formation)
Upper Cambrian: Texas.
Frederick Romberg and V. E. Barnes, 1944, Geophysics, v. 9, no. 1, p. 88.
P. E. Cloud, Jr., V. E. Barnes, and Josiah Bridge 1946, Tex. Univ. Bur. Econ. Geology Pub. 4301, p. 155 [1945].

Wellmans Cove diorite
Ordovician(?): Newfoundland, Canada.
G. H. Espenshade, 1937, Newfoundland Geol. Survey Bull. 6, p. 25.

Wellsville formation
Upper Devonian: New York.
J. G. Woodruff, 1942, N. Y. State Mus. Bull. 326, p. 31–33.

Wemir agglomerate
Age not stated: Panama Canal Zone.
[T. F. Thompson], 1943, Panama Canal, Special Eng. Div., 3d Locks Proj., pt. 2, chap. 5, p. 37.

Wendover group
Pennsylvanian: Wyoming and Colorado.
G. E. Condra, E. C. Reed, and O. J. Scherer, 1940, Nebr. Geol. Survey Bull. 13, p. 2, 3–4, 22, 45.

Werner formation
Permian: Subsurface in Arkansas and Louisiana.
R. T. Hazzard, B. W. Blanpied, and W. C. Spooner, [1947], Shreveport Geol. Soc. 1945 Ref. Rept., v. 2, p. 484, 486, 487.

Wesley formation
Pennsylvanian (Bendian): Oklahoma.
B. H. Harlton, 1938, Am. Assoc. Petroleum Geologists Bull., v. 22, no. 7, p. 854, 886–893.

Wesson tongue (of Dorcheat member of Schuler formation)
Upper Jurassic: Subsurface in Arkansas, Louisiana, and Texas.
F. M. Swain, 1944, Am. Assoc. Petroleum. Geologists Bull., v. 28, no. 5, p. 608–609.

West Bay formation
Pennsylvanian: Nova Scotia, Canada.
G. W. H. Norman, 1935, Canada Geol. Survey Mem. 177, p. 45.

West Beach formation
Mississippian and/or Pennsylvanian: New Brunswick, Canada.
F. J. Alcock [1938], Canada Geol. Survey Mem. 216, p. 33–35.

Westendspids pelitic group
Precambrian: Northeast Greenland.
G. P. Leedal, 1952, Meddel. om Grønland, bind 142, nr. 6, p. 11, 18, pl. 2.

Western Arm basalts or group
Lower Ordovician: Newfoundland, Canada.
H. J. MacLean *in* G. V. Douglas and others, 1940, Newfoundland Geol. Survey Bull. 20, p. 69.
H. J. MacLean, 1947, Newfoundland Geol. Survey Bull. 22, p. 17.

Western Brook Pond group
Lower Ordovician: Newfoundland, Canada.
Frederick Betz, Jr., 1939, Newfoundland Geol. Survey Bull. 16, p. 24 (table 3).
Helgi Johnson, 1941, N. Y. Acad. Sci. Trans., ser. 2, v. 3, no. 6, p. 143.

Western Cascade volcanic series
Eocene, upper, to Miocene, upper: Oregon.
Howel Williams, 1942, Carnegie Inst. Washington Pub. 540, p. 13–15.

West Fairview member (of Martinsburg shale)
Ordovician: Pennsylvania.
Bradford Willard and A. B. Cleaves, 1938, Pa. Geol. Survey, ser. 4, Bull. G 8, p. 5, 6.

Westford schist
Precambrian: Vermont.
E. C. Jacobs, [1939], Vt. State Geologist 21st Rept., p. 33–35.

West Gull jasper facies (of Ogishke conglomerate)
Precambrian (Knife Lake): Minnesota.
J. T. Stark and V. G. Sleight, 1939, Geol. Soc. America Bull., v. 50, no. 7, p. 1032 (table 2), 1034–1035.

West Molokai volcanic series
Pliocene: Hawaiian Islands (Molokai).
H. T. Stearns, 1946, Hawaii Div. Hydrography Bull. 8, p. 69, 71.

Westmore formation
Silurian or Lower Devonian: Vermont and Quebec, Canada.
C. G. Doll, 1951, Vt. Geol. Survey Bull. 3, p. 15, 33–37.

Westmoreland member (of Clinton formation)
Middle Silurian (Niagaran): New York.
Tracy Gillette, 1947, N. Y. State Mus. Bull. 341, p. 90, 93–94.
Philip Donnerstag, 1950, N. Y. State Mus. Circ. 28, p. 7.

Westmoreland shale
Lower Mississippian: Tennessee.
Guy Campbell, 1946, Geol. Soc. America Bull., v. 57, no. 9, p. 885.

Westphalia schists
Pre-Mesozoic: Jamaica, British West Indies.
C. A. Matley, 1929, Geol. Soc. London Quart. Jour., v. 85, pt. 4, p. 455.

Westpuntbaai conglomerate
Recent (Holocene): Curaçao, Netherlands West Indies.
G. J. H. Molengraaff, 1929, Geologie en geohydrologie van het Eiland Curaçao: Delft, J. Waltman, Jr., p. 30, 92, strat. table.

West Ridge group
Age unknown: California.
K. J. Hsu, 1955, Calif. Univ. Dept. Geol. Sci. Bull., v. 30, no. 4, p. 275, map 1.

West Spring formation
Pliocene, lower to middle: Utah.
Neal Smith, 1953, Intermountain Assoc. Petroleum Geologists 4th Ann. Field Conf., p. 73, 75.

West Union gravel
Pleistocene: Minnesota.
Kirk Bryan, Henry Retzek, and F. T. McCann, 1938, Tex. Archeol. Paleont. Soc. Bull. 10, p. 125.

Weybridge member (of Beldens formation)
Middle Ordovician (Chazyan): Vermont.
W. M. Cady, 1945, Geol. Soc. America Bull., v. 56, no. 5, p. 524, 550–552.

Wheatland formation
Pleistocene, upper: New Mexico.
Sheldon Judson, 1950, Geol. Soc. America Bull., v. 61, no. 3, p. 263; 1953, Smithsonian Misc. Coll., v. 121, no. 1, p. 22–23, 30.

Wheatland formation
Eocene, upper: California.
B. L. Clark and C. A. Anderson, 1937. (abs.) Geol. Soc. America Proc. 1936, p. 326–327.

Wheeler sandstone member (of Juncal formation)
Eocene, middle: California.
T. L. Bailey, 1947, Am. Assoc. Petroleum Geologists Bull., v. 31, no. 11, p. 1920 (fig. 3).
W. R. Merrill, 1952, *in* AAPG, SEPM, SEG, Joint Ann. Meeting Guidebook, p. 77.

Wheelerian stage
Pliocene: California.
Manley Natland, 1953, Pacific Petroleum Geologist, v. 7, no. 2, p. 2.

Wheelock marl member (of Crockett formation)
Eocene, middle (Claiborne): Texas.
H. B. Stenzel, 1938, Tex. Univ. Bur. Econ. Geol. Pub. 3818, p. 20, 125–134 [1939].

Whetstone Creek shale member (of Breathitt formation)
Pennsylvanian: Kentucky.
H. R. Wanless, 1946, Geol. Soc. America Mem. 13, p. 64, 65, 76, 153.

Whetstone Hill member (of Moretown formation)
Cambro-Ordovician: Vermont.
W. F. Brace, 1953, Vt. Geol. Survey Bull. 6, p. 51.

Whetstonian series
Paleozoic (Mid-Cambric): Arizona and New Mexico.
Charles Keyes, 1940, Pan-Am. Geologist, v. 74, no. 2, p. 107, 120.

Whim Hill breccia
Cretaceous: New Mexico.
P. F. Kerr and others, 1950, Geol. Soc. America Bull., v. 61, no. 4, p. 289–291, fig. 3, pl. 1.

Whipple member (of Berkshire schist)
Middle Ordovician: Vermont and Massachusetts.
Phillip Fowler, 1950, Vt. Geol. Survey Bull. 2, p. 13, 32–34.

Whiskey Canyon limestone
Pennsylvanian (Des Moines): New Mexico.
M. L. Thompson, 1942, N. Mex. State Bur. Mines Min. Res. Bull. 17, p. 27, 50.

Whiskey Creek Pass limestone member (of Madera formation)
Pennsylvanian (Desmoinesian): Colorado and New Mexico.
K. G. Brill, Jr., 1952, Geol. Soc. America Bull., v. 63, no. 8, p. 819, 828, pl. 1.

Whiskey Mountain granodiorite
Mesozoic: Washington.
A. C. Waters and Konrad Krauskopf, 1941, Geol. Soc. America Bull., v. 52, no. 9, pl. 1.

Whistle Creek limestone
Middle Ordovician: Virginia.
B. N. Cooper and G. A. Cooper, 1946, Geol. Soc. America Bull., v. 57, no. 1, p. 74.

Whistler Mountain alaskite
Post-Mississippian: Nevada.
C. W. Merriam, 1940, Geol. Soc. America Special Paper 25, p. 29, 44, fig. 2.

Whitby group
Ordovician: Ontario, Canada (subsurface).
B. A. Liberty, 1955, Geol. Assoc. Canada Proc., v. 7, pt. 1, p. 145.

White Bay group
Age unknown: Newfoundland, Canada.
Frederick Betz, Jr., 1948, Newfoundland Geol. Survey Bull. 24, p. 7–8.

Whitefield gneiss
Middle or Upper Devonian(?) (Oliverian plutonic series): New Hampshire.
M. P. Billings, 1955, Geologic map of New Hampshire (1 : 250,000): U. S. Geol. Survey.

Whitefish Bay member (of Alpena limestone stage)
Middle Devonian: Michigan.
W. A. Kelly, 1940, Mich. Acad. Sci. Arts and Letters Sec. Geology and Mineralogy [Guide Book] 10th Ann. Field Excursion, [p. 13, columnar sec.]
Charles Schuchert, [1943], Stratigraphy of the eastern and central United States: New York, John Wiley & Sons, p. 606 (chart 48), 613.

Whitehall formation
Lower Ordovician: New York and Vermont.
John Rodgers, 1937, Geol. Soc. America Bull., v. 48, no. 11, p. 1576–1577, 1578.

Whitehorse member (of Spray River formation)
Middle Triassic: British Columbia.
P. S. Warren, 1945, Am. Jour. Sci., v. 243, no. 9, p. 482–483.

White Lake formation
Tertiary: British Columbia, Canada.
H. S. Bostock, 1941, Canada Geol. Survey Map 627A.

White Lake granite
Precambrian: Saskatchewan, Canada.
W. E. Hale, 1953, Canadian Mining Jour., v. 74, no. 10, p. 106; 1954, Canada Geol. Survey Paper 53–15, p. 3 (table), 8–9, geol. map.

White Lake syenite
Precambrian: Ontario, Canada.
W. D. Harding, 1951, Ontario Dept. Mines Ann. Rept., v. 56, pt. 6, p. 29–30.

White Limestone basement
Eocene, middle or upper: Jamaica, British West Indies.
C. A. Matley, 1940, Geol. Soc. London Abs. Proc. 1373, p. 101; 1951, Geology and physiography of the Kingston district, Jamaica: Inst. of Jamaica, p. 35–36, geol. map.

White Limestone formation
Eocene, middle, to Miocene, lower: Jamaica, British West Indies.
H. T. De la Beche, 1827, Geol. Soc. London Trans., 2d ser., v. 2, pt. 2, p. 169.
C. A. Matley, 1951, Geology and Physiography of the Kingston district, Jamaica: Inst. of Jamaica, p. 36–39, 57–59, geol. map.

Whitemans Creek granite
Cretaceous or Tertiary: British Columbia, Canada.
1948, Canada Geol. Survey Map 932A.

White Quail limestone member (of Minturn formation)
Pennsylvanian and Permian (?): Colorado.
S. F. Emmons, 1898, U. S. Geol. Survey Geol. Atlas, Folio 48, p. 4.
Ogden Tweto, 1949, Colo. Sci. Soc. Proc., v. 15, no. 4, p. 203–204.

White Ridge quartzite
Precambrian: New Mexico.
J. T. Stark and E. C. Dapples, 1941, (abs) Geol. Soc. America Bull., v. 52, no. 12, pt. 2, p. 1936; 1946, v. 57, no. 12, pt. 1, p. 1133–1134.

Whites Creek beds member (of Shoal River formation)
Miocene, middle: Florida.
R. H. Smith, 1941, Am. Assoc. Petroleum Geologists Bull., v. 25, no. 2, p. 275.

Whites Crossing coquina member (of Chappel formation)
Mississippian: Texas.
F. B. Plummer, 1950, Tex. Univ. Bur. Econ. Geology Pub. 4329, p. 28.

Whitesville formation
Upper Devonian: New York.
J. G. Woodruff, 1942, N. Y. State Mus. Bull. 326, p. 37–42.

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White Tank monzonite
Jurassic(?): California.
W. J. Miller, 1938, Geol. Soc. America Bull., v. 49, no. 3, p. 419, 438–443.

White Wall formation
Pleistocene, upper(?): St. Eustatius, Netherlands West Indies.
G. A. F. Molengraaf, 1931, Leidsche Geol. Meded., Deel 5, p. 719 (fig. 3), 726, 728.

Whitewater limestone
Triassic: British Columbia, Canada.
M. S. Hedley, 1947, British Columbia Dept. Mines Bull. 22, p. 9.

Whiteway formation
Precambrian (Upper Proterozoic): Newfoundland, Canada.
R. D. Hutchinson, 1954, Canada Geol. Survey Mem. 275, p. 17–18.

Whitney member (of Brule formation)
Oligocene: Nebraska.
C. B. Schultz and T. M. Stout, 1938 (abs.) Geol. Soc. America Bull., v. 49, no. 12, pt. 2, p. 1921; 1955, Nebr. Univ. State Mus. Bull., v. 4, no. 2, p. 44–46.

Whitneyan age
Oligocene: North America.
H. E. Wood, 2d, and others, 1941, Geol. Soc. America Bull., v. 52, no. 1, p. 11, 12, pl. 1.

Whitt group
Pennsylvanian (Canyon): Texas.
M. G. Cheney, 1940, Am. Assoc. Petroleum Geologists Bull., v. 24, no. 1, p. 66, 88.

Wiarton member (of Gasport formation)
Middle Silurian (Niagaran): Ontario, Canada.
E. W. Shaw, 1937, Royal Canadian Inst. Trans., v. 21, pt. 2, p. 320.

Wiggins formation
Oligocene: Wyoming.
J. D. Love, 1939, Geol. Soc. America Special Paper 20, p. 79–85.

Wilcox formation
Precambrian: Vermont.
W. F. Brace, 1953, Vt. Geol. Survey Bull. 6, p. 21–22, 29.

Wild Bight volcanics
Middle Ordovician(?): Newfoundland, Canada.
G. H. Espenshade, 1937, Newfoundland Geol. Survey Bull. 6, p. 7.

Wildcat Creek shale member (of Admiral formation)
Permian (Wolfcamp age): Texas.
R. C. Moore *in* A. K. Miller and Walter Youngquist, 1947, Kans. Univ. Paleont. Contr. 2, Mollusca, art. 1, p. 1 (footnote).
A. K. Miller and Walter Youngquist, 1949, Geol. Soc. America Mem. 41, p. 4, 5, 6, 22.

Wildhorse Mountain formation
Pennsylvanian (Bendian): Oklahoma.
B. H. Harlton, 1938, Am. Assoc. Petroleum Geologists Bull., v. 22, no. 7, p. 854, 878–880.

Wileman member (of Mount Head formation)
Carboniferous: Alberta, Canada.
R. J. W. Douglas, 1953, Alberta Soc. Petroleum Geologists 3d Ann. Field Conf. and Symposium, p. 68.

Wilkinson anorthosite
Precambrian: Ontario, Canada.
J. M. Harrison, 1944, Geol. Soc. America Bull., v. 55, no. 12, p. 1409.

Willamette silt
Pleistocene: Oregon.
R. C. Treasher, 1942, Geologic map of the Portland area, Oregon (1:96,000): Oreg. State Dept. Geology and Mineral Res.
I. S. Allison, 1953, Oreg. Dept. Geology and Mineral Industries Bull. 37, p. 12–13.

Willapa clays
Pleistocene: Washington.
S. L. Glover, 1941, Wash. Dept. Conserv. Devel., Div. Geology Bull. 24, p. 52–53.

William Henry Bay marble
Lower Paleozoic: Alaska.
E. C. Robertson, 1955, Geol. Soc. America Bull., v. 66, no. 10, p. 1309.

William Island formation
Upper Devonian: Ontario, Canada.
D. C. McLaren, 1946, Canadian Mining Jour., v. 67, p. 1017.

Williams formation
Upper Cretaceous: California.
W. P. Popenoe, 1937, Jour. Paleontology, v. 11, no. 5, p. 380.

Williams member (of Deese formation)
Pennsylvanian (Des Moines): Oklahoma.
C. W. Tomlinson, 1937, Ardmore Geol. Soc. [Guidebook] Field Trip, March 13, p. 1.

Williamson Creek member (of Fleming formation)
Miocene: Louisiana.
H. N. Fisk, 1940, La. Dept. Conserv. Geol. Bull. 18, p. 118, 161–164.

Williana formation
Pleistocene: Louisiana.
H. N. Fisk, 1938, La. Dept. Conserv. Geol. Bull. 10, p. 78, 155–157.

Williston member (of Moodys Branch formation)
Eocene (Jackson): Florida.
R. O. Vernon, 1951, Fla. Geol. Survey Bull. 33, p. 141–152.

Willow Creek facies (of Flagstaff formation)
Paleocene, upper: Utah.
W. N. Gilliland, 1951, Nebr. Univ. Studies, new ser., no. 8, p. 29–30.

Willow Tank formation
Upper Cretaceous: Nevada.
C. R. Longwell, 1949, Geol. Soc. America Bull., v. 60, no. 5, p. 929, 931–932.

Willowvale shale
Middle Silurian (Niagaran): New York.
Tracy Gillette, 1940, N. Y. State Mus. Bull. 320, p. 22 (fig. 6); 1947, Bull. 341, p. 94–96, 99.

Willwood formation
Eocene: Wyoming.
H. E. Wood, 2d, and others, 1941, Geol. Soc. America Bull., v. 52, no. 1, p. 15, 37.
F. B. Van Houten, 1944, Geol. Soc. America Bull., v. 55, no. 2, p. 178–191.

Wilrich member (of Spirit River formation)
Lower Cretaceous: Alberta, Canada (subsurface).
P. C. Badgley, 1952, Canada Geol. Survey Paper 52–11, p. 9.

Wilson granite
Precambrian (post-Keewatin): Quebec, Canada.
W. W. Longley, 1946, Quebec Dept. Mines Geol. Rept. 24, p. 11.

Wilson Island phase (of Point Lake-Wilson Island group)
Precambrian (Archean?): Northwest Territories (Mackenzie), Canada.
C. H. Stockwell, 1936, Canada Geol. Survey Map 377A.

Wimer School limestone member (of Labette shale)
Pennsylvanian (Desmoinesian): Oklahoma.
C. M. Cade, 3d, 1953, Tulsa Geol. Soc. Digest, v. 21, p. 138–139, fig. 2.

Wimsattville formation
Tertiary, lower: New Mexico.
R. M. Hernon, W. R. Jones, and S. L. Moore, 1953, N. Mex. Geol. Soc. Guidebook 4th Field Conf., p. 118 (map), 120.

Windermere series
Precambrian: British Columbia, Canada.
J. F. Walker, 1926, Canada Geol. Survey Mem. 148, p. 13–20.

Wineglass welded tuff
Quaternary: Oregon.
Howel Williams, 1942, Carnegie Inst. Washington Pub. 540, p. 60–63.

Wingfield formation
Silurian: Ontario, Canada.
M. Y. Williams, 1936, Canada Geol. Survey Paper (Prelim. Map) 36–21; 1937, Paper 37–25, p. 16–17.

Winnemucca formation
Upper Triassic: Nevada.
S. W. Muller, H. G. Ferguson, and R. J. Roberts, 1951, Geology of the Mount Tobin quadrangle, Nevada: U. S. Geol. Survey Geol. Quadrangle Map [GQ 7].

Winslow granite
Devonian or younger: Quebec, Canada.
T. H. Clark *in* H. C. Cooke and T. H. Clark, 1937, Canada Geol. Survey Mem. 211, p. 75.

Winslow member (of Moenkopi formation)
Lower Triassic: Arizona.
E. D. McKee, 1951, N. Mex. Geol. Soc. Guidebook 2d Field Conf., p. 86, 87 (fig. 1).

Winsor formation
Upper Jurassic: Utah.
H. E. Gregory, 1948, Geol. Soc. America Bull., v. 59, no. 3, p. 235; 1950, U. S. Geol. Survey Prof. Paper 220, p. 96–98.

Winterburn formation
Devonian: Alberta, Canada (subsurface).
D. B. Layer, chm., 1950, Am. Assoc. Petroleum Geologists Bull., v. 34, no. 9, p. 1814–1816.

Winterport granite type
Age unknown: Maine.
J. M. Trefethen, 1941, (abs.) Geol. Soc. America Bull., v. 52, no. 12, pt. 2, p. 2020.

Winthrop phyllite
Silurian: Maine.
L. W. Fisher, 1941, Geol. Soc. America Bull., v. 52, no. 1, p. 130, table 1.

Wiota gravels
Pleistocene(?): Montana.
R. B. Colton, 1955, U. S. Geol. Survey Geol. Quadrangle Map GQ 67.

Wise Lake formation
Middle Ordovician: Illinois.
J. S. Templeton and H. B. Willman, 1952, Tri-State Geol. Soc. Guidebook 16th Ann. Field Conf., p. 6, fig. 3.

Wisenor formation
Lower Cretaceous: California.
L. I. Briggs, Jr., 1953, Calif. Dept. Nat. Res., Div. Mines Bull. 167, p. 12 (fig. 2), 20–22, pl. 1.

Wishart quartzite
Precambrian (Proterozoic): Quebec and Newfoundland (Labrador), Canada.
H. R. Rice, 1949, Canadian Mining Jour., v. 70, no. 9, p. 71–72.
J. M. Harrison, 1952, Canada Geol. Survey Paper 52–20, p. 9–10.

Wishbone formation
Paleocene(?) or lower Eocene(?): Alaska.
T. G. Payne, 1955, U. S. Geol. Survey Misc. Geol. Inv. Map I–84.

Wiskanian series
Cretaceous (Cretacic): Colorado and Kansas.
[C. R.] Keyes, 1941, Pan-Am. Geologist, v. 75, no. 5, p. 369–371.

Witten limestone
Middle Ordovician: Virginia.
B. N. Cooper and C. E. Prouty, 1943, Geol. Soc. America Bull., v. 54, no. 6, p. 877–879.

Wolf Creek formation
Triassic(?): British Columbia, Canada.
Victor Dolmage, 1934, Canada Geol. Survey Mem. 171, p. 10–11.

Wolf Hollow limestone member (of Tribes Hill formation)
Lower Ordovician (lower Canadian): New York.
D. W. Fisher, 1954, Geol. Soc. America Bull., v. 65, no. 1, p. 76 (fig. 2), 87–88.

Wolfskill formation
Pliocene: California.
C. E. Weaver, 1949, Geol. Soc. America Mem. 35, p. 16 (table 3), 94–97.

Wolstenholme quartzite
Precambrian (upper Algonkian): North Greenland.
V. E. Kurtz and D. B. Wales, 1950, Okla. Acad. Sci. Proc., v. 31, p. 83, 85.

Wolverine complex
Precambrian(?) and younger: British Columbia, Canada.
J. E. Armstrong and J. B. Thurber, 1945, Canada Geol. Survey Paper 45–9, p. 5–6.

Wolverine Canyon limestone member (of Preuss sandstone)
Upper Jurassic: Idaho.
R. W. Imlay, 1952, Am. Assoc. Petroleum Geologists Bull., v. 36, no. 9, p. 1741–1743.

Woodbend formation

Devonian: Alberta, Canada (subsurface).

D. B. Layer, chm., 1950, Am. Assoc. Petroleum Geologists Bull., v. 34, no. 9, p. 1816–1823.

Woodbury cyclothem (including Woodbury limestone)

Pennsylvanian: Illinois.

W. A. Newton and J. M. Weller, 1937, Ill. State Geol. Survey Rept. Inv. 45, p. 28–30.

Woodford limestone member (of Wagwater group)

Eocene, lower: Jamaica, British West Indies.

L. J. Chubb, 1953, Colonial Geology and Min. Res., v. 3, no. 2, p. 128, 129.

Woodglen limestone

Permian: Pennsylvania.

W. O. Hickok, IV, and F. T. Moyer, 1940, Pa. Geol. Survey, ser. 4, Bull. C 26, p. 147–148.

Woodhill member (of Franconia formation)

Upper Cambrian: Wisconsin and Minnesota.

R. R. Berg, 1951, Minn. Geologist, v. 8, no. 4, p. [1].

Woodland gneiss

Precambrian: Georgia.

D. F. Hewett and G. W. Crickmay, 1937, U. S. Geol. Survey Water-Supply Paper 819, p. 29–30.

Wood Siding formation

Pennsylvanian (Virgil series): Nebraska and Kansas.

G. E. Condra and E. C. Reed, 1943, Nebr. Geol. Survey Bull. 14, p. 41, 42, 43, 44.

Woodson granodiorite

See **Woodson Mountain grandiorite.**

Woodson Mountain granodiorite

Cretaceous: California.

F. S. Miller, 1937, Geol. Soc. America Bull., v. 48, no. 10, p. 1399.
E. S. Larsen, Jr., 1948, Geol. Soc. America Mem. 29, p. 76–82.

Woodway limestone

Middle Ordovician: Virginia.

R. L. Miller and W. P. Brosgé, 1950, U. S. Geol. Survey Oil and Gas Inv. Prelim. Map 104.

Woody Cove member (of Logy formation)

Precambrian: Newfoundland, Canada.

J. O. Fuller, 1941, Newfoundland Geol. Survey Bull. 15, p. 13.

Woody Cove shale

Mississippian: Newfoundland, Canada.

A. O. Hayes and Helgi Johnson, 1938, Newfoundland Geol. Survey Bull. 12, p. 14.

Woody Head beds

Mississippian: Newfoundland, Canada.

W. A. Bell, 1948, Canada Geol. Survey Bull. 10, p. 19–20.

Woody Point sandstone

Mississippian: Newfoundland, Canada.

A. O. Hayes and Helgi Johnson, 1938, Newfoundland Geol. Survey Bull. 12, p. 15.

Woolsey member (of Bloyd shale)
Pennsylvanian: Arkansas.
L. G. Henbest, 1953, Am. Assoc. Petroleum Geologists Bull., v. 37, no. 8, p. 1943–1944.

Woonasquatucket formation
Precambrian(?): Rhode Island.
G. M. Richmond *in* G. M. Richmond and W. B. Allen, 1951, R. I. Port and Indus. Devel. Comm. Geol. Bull. 4, p. 10, 12.

Wordie Creek formation
Eotriassic: North Greenland.
Lauge Koch, 1929, Meddel. om Grønland, bind 73, afd. 2, nr. 2, p. 249.

Workman Hill conglomerate
Miocene and Pliocene: California.
G. J. Bellemin, 1940, Am. Assoc. Petroleum Geologists Bull., v. 24, no. 4, p. 652 (fig. 2), 653–655.

Wray channel beds (in Ash Hollow formation)
Pliocene (Ogallala): Colorado.
M. K. Elias, 1942, Geol. Soc. America Special Paper 41, p. 143.

Wright Bay formation
Middle Ordovician (Trenton): North Greenland.
Curt Teichert, 1937, Meddel. om Grønland, bind 119, nr. 1, p. 11–26.

Wulff River formation
Lower Cambrian: North Greenland.
Christian Poulsen, 1927, Meddel. om Grønland, bind 70, nr. 2, p. 239–240, 338.

Wupatki member (of Moenkopi formation)
Lower Triassic: Arizona.
E. D. McKee, 1951, N. Mex. Geol. Soc. Guidebook 2d Field Conf., p. 86, 87 (fig. 1).

Wynn limestone member (of Palo Pinto formation)
Pennsylavnian (Canyon): Texas.
M. G. Cheney, 1940, Am. Assoc. Petroleum Geologists Bull., v. 24, no. 1, p. 66, 88.

Wyopo formation
Triassic: Wyoming.
E. B. Branson and C. C. Branson, 1941, Am. Asssoc. Petroleum Geologists Bull., v. 25, no. 1, p. 136.

Wyota member (of Dunleith formation)
Middle Ordovician: Illinois.
J. S. Templeton and H. B. Willman, 1952, Tri-State Geol. Soc. Guidebook 16th Ann. Field Conf., p. 24, figs. 3, 12.

XI member (of Rexroad formation)
Pliocene: Kansas.
C. W. Hibbard, 1949, Mich. Univ. Mus. Paleontology Contr., v. 7, no. 5, p. 91, 93, 96.

Xilitla beds
Cretaceous (Turonian): San Luis Potosi, Mexico.
Arnold Heim, 1926, Eclogae Geologicae Helvetiae, v. 20, no. 1, p. 87; 1940, v. 33, no. 2, p. 322.

Yager formation
Upper Jurassic to Cretaceous: California.
B. A. Ogle, 1953, Calif. Dept. Nat. Res., Div. Mines Bull. 164, p. 13 (fig. 3), 16–22, pl. 1.

Yamhill formation

Eocene: Oregon.

E. M. Baldwin and others, 1955, U. S. Geol. Survey Oil and Gas Inv. Map OM 155.

Yanhuitlan beds

Tertiary(?): Oaxaca, Mexico.

G. P. Salas, 1949, Asociación Mexicana Geólogos Petroleros Bol., v. 1, no. 2, p. 122–124.

Yankee Belle formation

Precambrian and/or Cambrian: British Columbia, Canada.

S. S. Holland, 1954, British Columbia Dept. Mines Bull. 34, p. 17–18.

Yanks Peak quartzite

Precambrian and/or Cambrian: British Columbia, Canada.

S. S .Holland, 1954, British Columbia Dept. Mines Bull. 34, p. 18–19.

Yanktonian series

Cretaceous (Cretacic): Iowa.

[C. R.] Keyes, 1936, Pan-Am. Geologist, v. 66, no. 2, p. 154–166.

Yap formation

Pre-Tertiary(?): Caroline Islands (Yap).

Risaburo Tayama, 1935, Topography, geology, and coral reefs of the Yap Islands: Tohoku Univ., Inst. Geology and Paleontology Contr. in Japanese Language, no. 19, p. 36–38 [English translation in library of U. S. Geol. Survey, p. 32–33]; 1952, Coral reefs in the South Seas: Japan Hydrog. Office Bull., v. 11, p. 60–61, table 4 [English translation in library of U. S. Geol. Survey, p. 71–72].

Yaquian series

Cambrian (Mid-Cambric): Arizona.

[C. R.] Keyes, 1940, Pan-Am. Geologist, v. 74, no. 2, p. 154–156.

Yates formation (in Carlsbad group, subsurface and surface of New Mexico)
Yates sandstone (in Whitehorse group, subsurface of Texas)

Permian: Texas and New Mexico.

G. C. Gester and H. J. Hawley, 1929, Structure of typical American oil fields: Tulsa, Okla., Am. Assoc. Petroleum Geologists, v. 2, p. 487–488.

R. K. DeFord, G. D. Riggs, and N. H. Wills, 1938 (abs.) Am. Assoc. Petroleum Geologists Bull., v. 22, no. 12, p. 1706.

Yeager greenstone

Precambrian: Arizona.

E. D. Wilson, 1937 (abs.) Geol. Soc. America Proc. 1936, p. 112; 1939, Geol. Soc. America Bull., v. 50, no. 7, p. 1120.

Yellorex flow

Precambrian: Northwest Territories (Mackenzie), Canada.

J. F. Henderson and I. C. Brown, 1950, Canadian Inst. Mining and Metallurgy Trans., v. 53, p. 418.

Yellowknife group

Precambrian: Northwest Territories (Mackenzie), Canada.

J. F. Henderson, 1938, Canada Geol. Survey Paper 38–1, p. 3–8.

Yellow Limestone formation

Eocene, middle (Lutetian): Jamaica, British West Indies.

J. G. Sawkins, 1869, Reports on the geology of Jamaica: [Great Britain] Geol. Survey Mem., p. 24.

C. T. Trechmann, 1923, Geol. Mag., v. 60, no. 8, p. 337–347.

Yepomera formation
Pliocene, upper: Chihuahua, Mexico.
L. C. Pray, 1953, *in* Geological sciences at the California Institute of Technology: Calif. Inst. Technology, p. 32.

Ygol member (of Logy formation)
Precambrian: Newfoundland, Canada.
J. O. Fuller, 1941, Newfoundland Geol. Survey Bull. 15, p. 13.

Ymer formation
Middle Cambrian: Northeast Greenland.
A. B. Cleaves and E. F. Fox, 1935, Geol. Soc. America Bull., v. 46, no. 3, p. 474, pl. 43.

Ymir group
Triassic and older (?): British Columbia, Canada.
H. W. Little, 1950, Canada Geol. Survey Paper 50–19, p. 24–25.

Ynezian stage
Paleocene: California.
V. S. Mallory, 1953 (abs.) Jour. Paleontology, v. 27, no. 6, p. 903.

Yoakum dolomite member (of Queen formation)
Permian: Texas (subsurface).
W. C. Fritz and James Fitzgerald, Jr., 1940, Am. Assoc. Petroleum Geologists Bull., v. 24, no. 1, p. 24–25.

Yogana series
Pre-Cretaceous: Oaxaca, Mexico.
Tomás Barrera, 1946, Guía geológica de Oaxaca: Mexico Univ. Nac., Inst. Geología, p. 82.

Yoho shale lentil (of Mount Whyte formation)
Middle Cambrian: British Columbia, Canada.
Franco Rasetti, 1951, Smithsonian Misc. Coll., v. 116, no. 5, p. 63–64.

Yokohl amphibolite
Triassic(?): California.
Cordell Durrell, 1940, Calif. Univ. Dept. Geol. Sci. Bull., v. 25, no. 1, p. 13–14, 116.

Yokut sandstone
Eocene: California.
R. T. White, 1940, Am. Assoc. Petroleum Geologists Bull., v. 24, no. 10, p. 1722, 1745–1747.

Yolo formation
Upper Cretaceous: California.
J. M. Kirby, 1943, Am. Assoc. Petroleum Geologists Bull., v. 27, no. 3, p. 282, 285–287.

Yonakina group
Jurassic(?): British Columbia, Canada.
F. A. Kerr, 1945, Canada Geol. Survey Paper (Prelim. Map) 45–30; 1948, Mem. 248, p. 20 (table), 35–36, geol. map.

Yorba member (of Puente formation)
Miocene, upper: California.
J. E. Schoellhamer and others, 1954, U. S. Geol. Survey Oil and Gas Inv. Map OM 154.

York Lake series
Lower(?) Devonian: Quebec, Canada.
I. W. Jones, 1936, Quebec Dept. Mines Ann. Rept. 1935, pt. D, p. 15–19.

Yorktownian substage
Miocene, upper: Central Atlantic Coastal Plain.
D. S. Malkin, 1953, Jour. Paleontology, v. 27, no. 6, p. 767–768.

Youghall formation
Pennsylvanian: Colorado and Utah.
M. L. Thompson, 1945, Kans. State Geol. Survey Bull. 60, pt. 2, p. 34–39.

Youghiogheny sandstone
Upper Devonian (Conewango): Pennsylvania.
W. M. Laird, 1941, Pa. Topog. and Geol. Survey Progress Rept. 126, p. 9 (footnote).

Younger Angaur limestone
See Angaur (Older and Younger) limestone.

Younghall formation
See Youghall formation.

Youngman formation
Middle Ordovician (Chazyan): Vermont and Quebec, Canada.
Marshall Kay, 1945, (abs.) Geol. Soc. America Bull., v. 56, no. 12, pt. 2, p. 1172.

Youngs Cove group
Cambrian: Newfoundland, Canada.
W. H. Twenhofel, 1947, Am. Jour. Sci., v. 245, no. 2, p. 92.
R. E. Van Alstine, 1948, Newfoundland Geol. Survey Bull. 23, p. 12.

Young Sound facies
Lower Cretaceous (middle Valanginian): Northeast Greenland.
Wolf Maync, 1949, Meddel, om Grønland, bind 133, nr. 3, p. 86, 185–192, 281.

Yucatán limestones
Upper Cretaceous (Campanian): Cuba.
J. F. de Albear, 1947, Am. Assoc. Petroleum Geologists Bull., v. 31, no. 1, p. 78.

Zabriskie quartzite member (of Wood Canyon formation)
Lower Cambrian: California.
J. C. Hazzard, 1937, Calif. Jour. Mines and Geology, v. 33, no. 4, p. 278 (fig. 3d), 309–310.

Zadoc member (of McNairy formation)
Cretaceous (Gulf series): Missouri.
M. M. Leighton, J. M. Weller, and H. S. McQueen, 1939, *in* Kansas Geol. Soc. Guidebook 13th Ann. Field Conf. p. 70 (fig. 25).

Zagaya limestone member (of Toco formation)
Lower Cretaceous: Trinidad, British West Indies.
H. G. Kugler, 1953, Vereinigung Schweizer Petroleum Geologen u. Ingenieure Bull., v. 20, no. 59, p. 33.

Zarah subgroup
Pennsylvanian (Missourian): Kansas, Iowa, Missouri, Nebraska, and Oklahoma.
R. C. Moore, 1948, Am. Assoc. Petroleum Geologists Bull., v. 32, no. 11, p. 2033, 2035.

Zargazal formation
Miocene, middle: Tabasco and Chiapas, Mexico.
J. B. Gibson, 1936, Soc. Geol. Mexicana Bol., tomo 9, no. 5, correlation chart.
G. P. Salas and Ernesto Lopez Ramos, 1951, Asociación Mexicana Geólogos Petroleros Bol., v. 3, nos. 1–2, p. 38–39.

Zealand sediments
Precambrian (Keewatin): Ontario, Canada.
Jack Satterly, 1943, Ontario Dept. Mines Ann. Rept., v. 50, pt. 2, p. 30–31.

Zebra slate
Precambrian: Newfoundland (Labrador), Canada.
G. V. Douglas, 1953, Canada Geol. Survey Paper 53–1, p. 56.

Zell limestone member (of Macy formation)
Middle Ordovician: Missouri.
E. R. Larson, 1951, Am. Assoc. Petroleum Geologists Bull., v. 35, no. 9, p. 2061–2064.

Zenoria lentil (of Verda member of Yazoo clay)
Eocene, upper: Louisiana.
H. N. Fisk, 1938, La. Dept. Conserv. Geol. Bull. 10, p. 78, 104–105.

†Zesch formation
Upper(?) Devonian: Texas.
V. E. Barnes, P. E. Cloud, Jr., and L. E. Warren, 1947, Geol. Soc. America Bull., v. 58, no. 2, p. 138–139.

Zeta Lake granite porphyry facies (of Ogishke conglomerate)
Precambrian (Knife Lake): Minnesota.
J. T. Stark and V. G. Sleight, 1939, Geol. Soc. America Bull., v. 50, no. 7, p. 1032 (table 2), 1034–1035.

Zeto Point basalt porphyry
Tertiary: Alaska (Aleutian Islands).
R. R. Coats, 1947, U. S. Geol. Survey Alaskan Volcano Inv. Rept. 2, pt. 5, p. 77.

Zilpha clay
Eocene, middle (Claiborne group): Mississippi.
1940, Miss. Geol. Soc. [Guidebook 2] Field Trip, March 9–10, p. 3, 11–12.
E. P. Thomas, 1942, Miss. State Geol. Survey Bull. 48, p. 33–40.

Zincton member (of Slocan series)
Triassic: British Columbia, Canada.
M. S. Hedley, 1947, British Columbia Dept. Mines Bull. 22, p. 7.

Zoroaster granite
Precambrian (Archean): Arizona.
Ian Campbell and J. H. Maxson, 1936, Carnegie Inst. Washington Year Book 35, p. 329–331.

Zuloaga limestone
Upper Jurassic: Zacatecas and Coahuila, Mexico.
R. W. Imlay, 1938, Geol. Soc. America Bull., v. 49, no. 11, p. 1657–1659.

Zumpimito formation
Tertiary: Michoacan, Mexico.
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