DEPARTMENT OF THE INTERIOR
HUBERT WORK, Secretary

UNITED STATES GEOLOGICAL SURVEY
GEORGE OTIS SMITH, Director

Bulletin 758

BIBLIOGRAPHY

OF

NORTH AMERICAN GEOLOGY

FOR

1921-1922

BY

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WASHINGTON
GOVERNMENT PRINTING OFFICE
1924

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BIBLIOGRAPHY OF NORTH AMERICAN GEOLOGY FOR 1921-1922.

By JOHN M. NICKLES.

INTRODUCTION.

The bibliography of North American geology, including paleontology, petrology, and mineralogy, for the years 1921 and 1922 contains publications on the geology of the Continent of North America and adjacent islands and on Panama and the Hawaiian Islands. It includes textbooks and papers of general character by American authors, but not those by foreign authors, except papers that appear in American publications.

The papers, with full title and medium of publication and explanatory note if the title is not fully self-explanatory, are listed under the names of their authors, which are arranged in alphabetic order. The author list is followed by an index to the literature listed.

The bibliography of North American geology is comprised in the following bulletins of the United States Geological Survey: No. 127 (1732–1892); Nos. 188 and 189 (1892–1900); No. 301 (1901–1905); No. 372 (1906–7); No. 409 (1908); No. 444 (1909); No. 495 (1910); No. 524 (1911); No. 545 (1912); No. 584 (1913); No. 617 (1914); No. 645 (1915); No. 665 (1916); No. 684 (1917); No. 698 (1918); and No. 731 (1919–1920).

A cumulation of these bulletins down to 1918, inclusive, consisting of an author list giving titles of papers and brief citations and an index, has been recently issued under the general title "Geologic literature on North America, 1785–1918," in two parts—Part I, Bibliography (Bulletin 746), and Part II, Index (Bulletin 747).

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NOTE.—The entry in the bibliography of North American geology for 1919–1920 (U. S. Geol. Survey Bulletin 731), no. 1930, should not have been entered under Walcott, Charles D., but under Anonymous. Though based on Mr. Walcott's work the paper contains errors for which Mr. Walcott is not responsible.

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[1] The chemical analyses given in Gordon, 679, are not included in this list.

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Horton formation, Mississippian, Nova Scotia: Bell, 126.
Hotauta terrane, pre-Cambrian, Arizona: Keyes, 1029.
Hot Springs sandstone, Mississippian, Arkansas: Miser, 1326.
Hoxbar member, Pennsylvanian, Oklahoma: Goldston, 666, 667.
Hudson River formation, Cambro-Ordovician, New York: Berkey and Rice, 131.
Huethawali limestone, Arizona: Keyes, 1036.
Huethawali terrane, Carboniferous, Arizona: Keyes, 1029.
Hull formation, Ordovician, Canada: Raymond, 1540.
Humber Grit series, Carboniferous, Newfoundland: Landell-Mills *et al*, 1085.
Humbug formation, Mississippian, Utah: Olmstead, 1413.
Huntington formation, Silurian, Indiana: Cumings, 439.
Hunton limestone, Silurian, Oklahoma: Hewett, 785.
Hunton limestone, Devonian and Silurian, Oklahoma: Goldston, 666.
Iaeger (Lower) shale, Pennsylvanian, West Virginian: Reger, 1573.
Iaeger (Middle) sandstone, Pennsylvanian, West Virginia: Reger, 1573.
Iaeger, (Upper) shale, Pennsylvanian, West Virginia: Reger, 1573.
Iatan limestone, Carboniferous, Kansas: Twenhofel and Edwards, 1944.
Idaho Springs formation, pre-Cambrian, Colorado: Worcester, 2197.
Illinoian drift, Pleistocene, Iowa: Cable, 266.
Illinoian glaciation, Quaternary: Upham, 1975.
Illinoian till, Pleistocene, Illinois: Savage and Udden, 1649.
Illinois glacial stage, Pleistocene, Indiana: Malott, 1216.
Indian Creek clay bed, Permian, Texas: Plummer and Moore, 1492.
Indian Springs shale, Mississippian, Indiana: Cumings, 439.
Inwood limestone, pre-Cambrian, New York: Berkey and Rice, 131.
Iowa series, Mississippian: Weller, 2061.
Iowan drift, Pleistocene, Iowa: Cable, 266.
Iowan glaciation, Quaternary: Upham, 1975.
Irasburg conglomerate, Ordovician, Vermont: Richardson and Cabeen, 1585.
Isidro formation, Tertiary, Lower California: Heim, 762.
Ivan limestone, Pennsylvanian, Texas: Moore and Plummer, 1358.
Ivan limestone member, Pennsylvanian, Texas: Plummer and Moore, 1492.
Jacalitos formation, Pliocene, California: Clark, 336.
Jackfork sandstone, Mississippian, Arkansas and Oklahoma: Miser, 1326.
Jacksboro limestone, Pennsylvanian, Texas: Moore and Plummer, 1358.
Jacksboro limestone lentil, Pennsylvanian, Texas: Plummer and Moore, 1492.
Jacksonville formation, Miocene, Florida: Sellards, 1691.
Jagger Bend limestone, Permian, Texas: Plummer and Moore, 1492.
Jasper limestone, Ordovician, Arkansas: Dake, 450.
Jefferson dolomite, Ordovician, Missouri: Dake, 452.
Jefferson limestone, Devonian, Montana: Collier and Cathcart, 391.
Jefferson City formation, Ordovician, Missouri: Dake, 450.
Jeffersonville limestone, Devonian, Indiana: Cumings, 439.
Jennings formation, Devonian, Virginia: Stose and Miser, 1841.
Joachim dolomite, Ordovician, Missouri: Dake, 452.
Joachim dolomite, Ordovician, Missouri, Arkansas, Illinois: Dake, 450.
Joachim limestone, Ordovician, Arkansas: Miser, 1327.
John Day formation, Miocene, Oregon: Buwalda, 264.
John Day formation, Oligocene, Oregon: Thorpe, 1890.
Jordan sandstone, Cambrian, Minnesota: Keyes, 1035.
Judith River formation, Cretaceous, Montana: Clapp *et al.*, 330; Collier and Cathcart, 391; Lupton and Lee, 1177; Knowlton, 1070.
Julian formation, Ordovician, Iowa and Illinois: Keyes, 998.
Julian schist series, Triassic (?), California: Hudson, 840.
Juniata formation, Silurian, Pennsylvania: Gordon, 679.
Jupiter River formation, Silurian, Anticosti Island: Twenhofel, 1948.
Kaibab limestone, Carboniferous, Arizona: Keyes, 1040.
Kaibab limestone, Carboniferous, Utah and Arizona: Reeside and Bassler, 1568.
Kaibab limestone, Permian, Arizona: Hager, 704; Noble, 1400.
Kaibab limestone, Permian, Utah: Bassler and Reeside, 79; Moore, 1362.
Kaibab limestone, Permian, Nevada: Longwell, 1144, 1146.
Kaibab terrane, Carboniferous, Arizona: Keyes, 1029.

Lance formation, Tertiary (?), Wyoming: Collier 390.
Lance series, Tertiary, Montana: Keyes, 981.
La Plata formation, Jurassic, Colorado: Coffin, 377.
La Plata group, Jurassic, New Mexico: Darton, 467.
Laramie formation, Cretaceous, Colorado: Coffin, 377.
Laramie formation, Cretaceous, Wyoming and Colorado: Knowlton, 1070.
"Laramie" sandstone, Cretaceous, Utah: Moore, 1362.
Larke dolomite, Cambrian, Pennsylvania: Gordon, 679.
Las Cahobas formation, Miocene, Haiti: Woodring, 2189.
Las Matas formation, Pliocene, Dominician Republic: Vaughan *et al.*, 1985.
Laurel formation, Silurian, Indiana: Cumings, 439.
Laurel limestone, Silurian, Tennessee: Miser, 1325.
Laurentian, pre-Cambrian, Ontario: Burrows, 250.
Lawrence shale member, Carboniferous, Kansas: Twenhofel and Edwards, 1944.
Lebanon formation, Ordovician, Tennessee: Coryell, 417.
Lebanon granite, New Hampshire: Merritt, 1288.
Lebo shale member, Eocene, Montana: Clapp *et al.*, 330.
Ledger dolomite, Cambrian, Pennsylvania: Stose and Jonas, 1840.
Lee formation, Pennsylvania, Virginia: Giles, 638; Wentworth, 2070.
Lego limestone, Silurian, Tennessee: Miser, 1325.
Leipers limestone, Ordovician, Tennessee: Miser, 1325.
Leitchfield formation, Mississippian, Kentucky: Glenn, 653.
Leithsville or Tomstown formation, Cambrian: Pennslyvania: Gordon, 679.
Leona formation, Pleistocene and Recent, Texas: Liddle, 1128.
Leray beds, Ordovician, Ontario: Wilson, 2145.
Le Roux limestones, Arizona: Keyes, 1036.
Le Roux terrane, Triassic, Arizona: Keyes, 1029.
Lewis shale, Cretaceous, New Mexico: Bauer and Reeside, 94; Darton, 467.
Lewis shale, Cretaceous, Utah: Moore, 1362.
Liberty formation, Ordovician, Indiana: Cumings, 439.
Lincoln horizon, Oligocene, Washington: Clark, 336.
Lion sandstone, Tertiary, California: Vaughan,1979.
Lisman formation, Pennsylvanian, Kentucky, Glenn, 653.
Livingston formation, Cretaceous, Montana: Clapp *et al.*, 330.
Lobelville limsetone member, Silurian, Tennessee: Miser, 1325.
Lobo formation, Triassic (?), New Mexico: Darton, 467.
Lockatong formation, Triassic, Pennsylvania: Gordon, 679.
Lodgepole limestone, Mississippian, Montana; Collier and Cathcart, 391.
Logan formation, Mississippian, Kentucky: Butts, 262.
Logan formation, Mississippian, Ohio: Conrey, 403; Hyde, 859.
Loganian, pre-Cambrian, Canada: Miller, 1308.
Lohali sandstones, Arizona: Keyes, 1036.
Lohali terrane, Cretaceous, Arizona: Keyes, 1029.
Lone Mountain dolomite, Silurian, Mackenzie: Kindle, 1043.
Longfellow terrane, Ordovician, Arizona: Keyes, 1029.
Lonsdale or Rock Creek limestone, Pennsylvanian, Illinois: Cady, 269.
Lookout formation, Carboniferous, Georgia: McCallie, 1184.
Lorrain quartzite, pre-Cambrian, Ontario: Quirke, 1527, 1528.
Losee gneiss, pre-Cambrian, New Jersey: Ries and Bowen, 1596.
Losee gneiss, pre-Cambrian, Pennsylvania: Gordon, 679.
Lost Creek shale bed, Permian, Texas: Plummer and Moore, 1492.
Louisville limestone, Silurian, Indiana: Cumings, 439.
Lowellville (Poverty Run) limestone, Pennsylvanian, Ohio: Morningstar, 1371.
Lowerre quartzite, pre-Cambrian, New York: Berkey and Rice, 131.
Lowville formation, Ordovician, Vermont: Gordon, 673.
Lowville limestone, Ordovician, Pennsylvania: Gordon, 679.
Ludlow lignitic member, Cretaceous: Schuchert, 1677.
Lukachukai terrane, Triassic, Arizona: Keyes, 1029.
Lukashukai sandstones, Arizona: Keyes, 1036.
Luta limestone, Permian, Kansas: Elledge, 552.
Lynn volcanics, Devonian (?) and Carboniferous, Massachusetts: Clapp, 329.
Lynx formation, Cambrian, British Columbia: Burling, 243.
McAlester shale, Pennsylvanian, Arkansas and Oklahoma: Miser, 1326.
McArthur member, Pennsylvanian, Ohio: Morningstar, 1371.
McBean formation, Eocene, Georgia: McCallie, 1184; Teas, 1863.
McClesky sand, Texas: Reeves, 1570.
McElmo formation, Cretaceous (?), New Mexico: Darton, 467.
McElmo formation, Cretaceous (?), Utah: Moore, 1362.
McElmo formation, Jurassic or Cretaceous, Colorado: Coffin, 377.
McKenzie limestone, Silurian, Pennsylvania: Gordon, 679.
McKittrick formation, Miocene and later, California: English, 562.
McKittrick group, Pliocene, California: Vander Leck, 1976.
McLeansboro formation, Pennsylvanian, Illinois: Cady, 269; Currier, 440; Savage, 1650; Savage and Udden, 1649; Shaw, 1719.
McNairy sand member, Cretaceous, Illinois: Parmelee and Schroyer, 1467.
Madame Joie formation, Miocene, Haiti: Woodring, 2189.
Maderan series, New Mexico: Keyes, 1027.
Madison group, Mississippian, Montana: Collier and Cathcart, 391.

Menefee formation, Cretaceous, New Mexico: Bauer and Reeside, 94.
Meramee group, Mississippian: Weller, 2061.
Merced formation, Pliocene, California: Clark, 336. Vander Leck, 1976.
Merced group, Pliocene, California: Dickerson, 497.
Merced series, Pliocene, California: Clark, 336.
Mercer (Lower) limestone, Pennsylvanian, Ohio: Conrey, 403;
Mercer (Upper) limestone, Pennsylvanian, Ohio: Conrey, 403.
Mercer (Upper) member, Pennsylvanian, Ohio: Morningstar, 1371.
Merchantville clay, Cretaceous, New Jersey: Mansfield, 1223.
Merom sandstone, Pennsylvanian, Indiana: Cumings, 439.
Merrimack quartzite, Carboniferous, Massachusetts: Clapp, 329.
Merriman limestone member, Carboniferous, Texas: Reeves, 1570.
Mesa sandstone, Tertiary, Lower California: Darton, 466.
Mesaverde formation, Cretaceous, Colorado: Coffin, 377.
Mesaverde group, Cretaceous, New Mexico: Bauer and Reeside, 94; Darton, 467.
Mesaverde sandstone, Cretaceous, Utah: Moore, 1362.
Midway formation, Eocene, Arkansas: Rubey, 1622; U. S. Geological Survey, 1971.
Midway formation, Eocene, Georgia: McCallie, 1184; Teas, 1863.
Midway formation, Eocene, Illinois: Parmelee and Schroyer, 1467.
Midway formation, Eocene, Louisiana: Hammill, 709.
Midway formation, Eocene, Texas: Powers and Hopkins, 1504.
Midway group, Eocene, Texas: Liddle, 1128.
Midway limestone, Eocene, Texas: Thompson, 1885.
Miller limestone, Mississippian, Nova Scotia: Bell, 126.
Millerton formation, Pleistocene, California: Dickerson, 497.
Millsap formation, Pennsylvanian, Texas: Moore and Plummer, 1358; Plummer and Moore, 1492.
Mimbrasian series, Arizona: Keyes, 1036.
Mimbresian series, Ordovician, Arizona: Keyes, 1029.
Mineral Wells formation, Pennsylvanian, Texas: Moore and Plummer, 1358; Plummer and Moore, 1492.
Mines dolomite, Cambrian, Pennsylvania: Gordon, 679.
Mingus shale, Pennsylvanian, Texas: Moore and Plummer, 1358; Plummer and Moore, 1492.
Minnekahto limestone, Permian (?), Wyoming: Collier, 390.
Minnelusa sandstone, Pennsylvanian, Wyoming: Collier, 390.
Minneola limestone, Devonian, Missouri: Branson, 193.
Minooka deposits, Pleistocene, Illinois: Culver, 438.
Mint Spring calcareous marl member of Marianna limestone, Oligocene, Mississippi: Cushman, 446.
Mispec group, Devonian, New Brunswick: Matthew, 1244.
Missi (Lower) series, pre-Cambrian, Manitoba: Alcock and Bruce, 11.
Missi (Upper) series, pre-Cambrian, Manitoba: Alcock and Bruce, 11.
Mission Canyon limestone, Mississippian, Montana: Collier and Cathcart, 391.
Missisquoi group, Cambrian, Vermont: Richardson and Cabeen, 1585.
Mississagi formation, pre-Cambrian, Ontario: Quirke, 1527, 1528.
Mississippian series: Keyes, 1037.
Mississippian series, Carboniferous: Williams, 2135.
Missouri Mountain slate, Silurian, Arkansas and Oklahoma: Miser, 1326.
Mitchell limestone, Mississippian, Indiana: Stockdale, 1819.
Moccasin limestone, Ordovician, Virginia: Stose and Miser, 1841.
Moenkopi formation, Triassic, Arizona: Noble, 1400.
Moenkopi formation, Triassic, Nevada: Longwell, 1144.
Moenkopi formation, Triassic, New Mexico: Darton, 467.
Moenkopi formation, Triassic, Utah: Bassler and Reeside, 79; Longwell *et al.*, 1147; Moore, 1362.
Moenkopi formation, Triassic, Utah and Arizona; Reeside and Bassler, 1568.
Moenkopian series, Carboniferous, Arizona: Keyes, 1029.
Moenkopian formation, Permian, Arizona: Hager, 704.
Monitor sandstone, Pennsylvanian, West Virginia: Reger, 1573.
Monongahela formation, Pennsylvanian, Pennsylvania: Gordon, 679.
Monroe Creek beds, Miocene, Nebraska: Schramm and Cook, 1672.
Montana group, Cretaceous, Montana: Clapp *et al.* 330; Kemp and Billingsley, 961.
Monterey beds, Miocene, Lower California: Darton, 466.
Monterey formation, Tertiary, Lower California: Heim, 762.
Monterey group, Miocene, California: Dickerson, 497.
Monterey series, Miocene, California: Clark, 335, 336; Vander Leck, 1976.
Montesano formation, Miocene, Washington: Clark, 335, 336.
Montoya limestone, Ordovician, New Mexico: Darton, 467.
Monument Creek group, Tertiary, Colorado: Knowlton, 1070.
Moorefield shale, Carboniferous, Arkansas: Miser, 1327.
Mooretown, member, Mississippian, Indiana: Cumings, 439.
Moran formation, Pennsylvanian, Texas: Moore and Plummer, 1358; Plummer and Moore, 1492.
Morenci limestones, Devonian, Arizona: Keyes, 1036.
Morenci terrane, Devonian, Arizona: Keyes, 1029.
Morris Mountain shaly member, Mississippian, Kentucky: Butts, 262.

Niagaran limestone, Silurian, Illinois: Savage and Udden, 1649.
Niobrara formation, Cretaceous, Kansas: Lupton *et al.*, 1178.
Niobrara formation, Cretaceous, Texas: Baker, 59.
Niobrara limestone, Cretaceous, Montana: Kemp and Billingsley, 961.
Niobrara limestone, Cretaceous, Nebraska: Schramm and Cook, 1672.
Niobrara shale, Cretaceous, Montana: Thom, 1875.
Niobrara shale, Cretaceous, Wyoming: Collier, 390; Heald, 747.
Nipissing diabase, pre-Cambrian, Ontario: Burrows, 250.
Nisky or Lehigh limestone, Ordovician, Pennsylvania: Gordon, 679.
Nittany dolomite, Ordovician, Pennsylvania: Gordon, 679.
Noblesville formation, Silurian, Indiana: Cumings, 439.
Noix limestone, Silurian, Missouri: Keyes, 990.
Nolichucky shale, Cambrian, Virginia: Stose and Miser, 1841.
Normanskill shale, Ordovician, New York: Ruedemann, 1624.
North Leon limestone member, Carboniferous, Texas: Reeves, 1570.
Northumberland formation, Cretaceous, British Columbia: MacKenzie, 1203.
Norton formation, Pennsylvanian, Virginia: Giles, 638; Wentworth, 2070.
Nottely quartzite, Cambrian, Georgia: McCallie, 1184.
Nugget sandstone, Jurassic, Idaho: Kirkham, 1053.
Nussbaum formation, Eocene, Colorado: Coffin, 377.
Nussbaum formation, Pliocene (?), Colorado: Tieje, 1906.
Nuttall (Lower) sandstone, Pennsylvanian, West Virginia: Reger, 1573.
Nuttall (Upper) sandstone, Pennsylvanian, West Virginia: Reger, 1573.
Ocala formation, Eocene, Florida: Sellards, 1691.
Ocala limestone, Eocene, Georgia: McCallie, 1184; Teas, 1863.
Ocoee group, Cambrian to Pennsylvanian, Alabama: Prouty, 1521.
Octoraro schist, Ordovician, Pennsylvania: Gordon, 679.
Oddie rhyolite, Tertiary, Nevada: Knopf, 1061.
Ohara limestone member, Mississippian, Kentucky: Butts, 262.
Ohara (Lower) limestone member, Mississippian, Kentucky: Weller, 2061.
Ohio shale, Devonian, Ohio: Hyde, 859.
Ohio shale, Devonian or Mississippian, Kentucky: Butts, 262.
Ohio River formation, Indiana: Malott, 1216.
Ojo Alamo sandstone, Cretaceous, New Mexcio: Bauer and Reeside, 94; Darton, 467; Reeside, 1567.
Okaw formation, Mississippian, Illinois: Shaw, 1719.
Okefenokee formation, Pleistocene, Georgia: McCallie, 1184; Teas, 1863.
Olive Hill formation, Devonian, Tennessee: Miser, 1325.
Oneonta formation, Cambrian, Minnesota: Keyes, 1035.
Oneonta formation, Ordovician, Illinois: Culver, 438.
Oneota dolomite, Ordovician, Iowa, Minnesota, Wisconsin; Dake, 450.
Onondago formation, Devonian, Pennsylvania: Gordon, 679.
Opeche formation, Permian (?), Wyoming: Collier, 390.
Opex formation, Cambrian, Utah: Olmstead, 1413.
Ophir formation, Cambrian, Utah: Olmstead, 1413.
Orabai sandstones, Arizona: Keyes, 1036.
Orabai terrane, Cretaceous, Arizona: Keyes, 1029.
Oran sandstone, Pennsylvanian, Texas: Plummer and Moore, 1492.
Oregonia division, Ordovician, Indiana: Cumings, 430.
Orindan group, Pliocene, California: Clark, 336.
Oriskany formation, Devonian, Pennsylvania: Gordon, 679.
Oriskany formation, Devonian, Virginia: Stose and Miser, 1841.
Osgood formation, Silurian, Indiana: Cumings, 439.
Osgood limestone, Silurian, Tennessee: Miser, 1325.
"Oswego" lime, Oklahoma: White and Greene, 2102.
Oswego sandstone, Silurian, Pennsylvania: Gordon, 679.
Otter shales, Carboniferous, Montana: Freeman, 610.
Otterville limestone, Carboniferous, Oklahoma: Goldston, 666.
Otterville limestone member, Pennsylvanian, Oklahoma: Goldston, 667.
Overton fanglomerate, Miocene (?), Nevada: Noble, 1399.
Overton fanglomerate, Tertiary, Nevada: Longwell, 1144, 1146,
Owen substage. Devonian, Iowa: Fenton, 579a.
Ozark group, Mississippian, Missouri: Williams, 2135.
Pahasapa limestone, Mississippian, Wyoming, Collier, 390.
Paint Creek formation, Mississippian, Illinois: Shaw, 1719.
Paint Creek formation, Mississippian, Kentucky: Weller, 2061.
Paint Creek limestone, Mississippian, Kentucky: Jillson, 890.
Palestine sandstone, Mississippian, Kentucky: Jillson, 890; Weller, 2061.
Palomas gravel, Pleistocene, New Mexico: Darton, 467.
Palo Pinto limestone, Carboniferous, Texas: Dobbin, 506.
Palo Pinto limestone, Pennsylvanian, Texas: Moore and Plummer, 1358; Plummer and Moore, 1492.
Paluxy formation, Cretaceous, Texas: Winton and Scott, 2166.
Panaca beds, Tertiary, Nevada: Stock, 1816.
Panther Creek limestone, Pennsylvanian, Oklahoma: Roundy *et al.*, 1620.
Paoli member, Mississippian, Indiana; Cumings, 439.
Parian (Newer) group, Tertiary, Trinidad: Milner, 1322.
Parian (Older) group, Cretaceous, Trinidad: Milner, 1322.

Reservoir granite, pre-Cambrian, New York: Berkey and Rice, 131.
Revard sandstone, Pennsylvanian, Oklahoma: Roundy *et al.*, 1620.
Rexmount porphyry, Tertiary, British Columbia: McCann, 1187.
Rice Lake series, pre-Cambrian, Manitoba: Cooke, 415.
Rice Lake series, pre-Cambrian, Ontario: Burwash, 257.
Richmond beds, Ordovician, Kentucky: Foyles, 607.
Richmond group, Ordovician, Indiana: Cumings, 439.
Ridgetop shale, Mississippian, Tennessee: Miser, 1325.
Ridley limestone, Ordovician, Tennessee: Coryell, 417.
Rift shale, Pennsylvanian, West Virginia: Reger, 1573.
Ripley formation, Cretaceous, Georgia: McCallie, 1184; Teas, 1863.
Ripley formation, Cretaceous, Illinois: Parmelee and Schroyer, 1467.
Rittman conglomerate lentil, Mississippian, Ohio: Conrey, 403.
Riverside (or Holtsclaw) formation, Mississippian, Indiana: Cumings, 439.
Roan gneiss, Archean, Georgia: McCallie, 1184.
Robson formation, Ordovician, British Columbia: Burling, 243.
Rochelle conglomerate, Pennsylvanian, Texas: Moore and Plummer, 1358; Plummer and Moore, 1492.
Rochester biotite granite, Devonian (?), New Hampshire: Wandke, 2026.
Rock Canyon conglomeratic member, Triassic, Arizona and Utah: Reeside and Bassler, 1568.
Rock Canyon conglomeratic member, Triassic, Utah: Bassler and Reeside, 79.
Rockford formation, Mississippian, Indiana: Cumings, 439.
Rockland beds, Ordovician, Ontario: Wilson, 2145.
Rockland formation, Ordovician, Canada: Raymond, 1540.
Rockwood formation, Silurian, Georgia: McCallie, 1184.
Rodman limestone, Ordovician, Pennsylvania: Gordon, 679.
Rogers Spring formation, Mississippian, Nevada: Longwell, 1144, 1146.
Rome formation, Cambrian, Georgia: McCallie, 1184.
Romney formation, Devonian, Virginia: Stose and Miser, 1841.
Roosville formation, pre-Cambrian, British Columbia: Schofield, 1667.
Rosewood shale, Mississippian, Indiana: Cumings, 439.
Rosewood shale, Mississippian, Kentucky: Butts, 262.
Rosiclare sandstone member, Mississippian, Kentucky: Weller, 2061.
Ross limestone, Devonian, Tennessee: Miser, 1325.
Roubidoux formation, Ordovician, Missouri: Dake, 450.
Roubidoux sandstone, Ordovician, Missouri: Dake, 452.
Royal shale, Pennsylvanian, West Virginia: Reger, 1573.
Rye gneiss, New Hampshire and Maine; Wandke, 2026.
Saddle Creek limestone member, Pennsylvanian, Texas: Plummer and Moore, 1492.
Saddle Creek member, Pennsylvanian, Texas: Moore and Plummer, 1358.
Sage Hen limestone, Cretaceous, Montana: Lupton and Lee, 1177.
St. Alban beds, Devonian, Quebec: Alcock, 12.
St. Clair limestone, Silurian, Arkansas: Miser, 1327.
St. Clair marble, Silurian, Oklahoma: Aurin *et al.*, 55.
Ste. Genevieve formation, Mississippian, Kentucky: Foyles, 607.
Ste. Genevieve group, Mississippian, Missouri: Williams, 2135.
Ste. Genevieve limestone, Mississippian, Indiana: Cumings, 439.
Ste. Genevieve limestone, Mississippian, Kentucky: Butts, 262; Jillson, 890; Weller, 2061.
St. Joe limestone, Mississippian, Oklahoma: Aurin *et al.*, 55.
St. John formation, Cretaceous, Alberta: Allan, 19.
St. John formation, Cretaceous, British Columbia: Spieker, 1784.
St. Lawrence dolomite, Cambrian, Minnesota: Keyes, 1035.
St. Louis formation, Mississippian, Illinois: Currier, 440.
St. Louis formation, Mississippian, Kentucky: Foyles, 607.
St. Louis limestone, Mississippian, Illinois: Savage and Nebel, 1651.
St. Louis limestone, Mississippian, Indiana: Cumings, 439.
St. Louis limestone, Mississippian, Kentucky: Butts, 262; Jillson, 890.
St. Louis limestone, Mississippian, Kentucky: Weller, 2061.
St. Louis limestone, Mississippian, Tennessee: Miser, 1325.
St. Maurice formation, Eocene, Arkansas: Rubey, 1622; U. S. Geological Survey, 1971.
St. Maurice formation, Eocene, Louisiana: Glenk, 649.
St. Peter formation, Ordovician, Missouri, Arkansas, Iowa, Illinois, Minnesota, Wisconsin: Dake, 450.
St. Peter group, Ordovician, Missouri: Dake, 450.
St. Peter sandstone, Ordovician: Keyes, 996.
St. Peter sandstone, Ordovician, Arkansas: Miser, 1327.
St. Peter sandstone, Ordovician, Illinois: Culver, 438; Savage and Udden, 1649.
St. Peter sandstone, Ordovician, Mississippi Valley: Dake, 450.
St. Peter sandstone, Ordovician, Missouri: Dake, 452.
Salada formation, Tertiary, Lower California: Heim, 762.
Salem formation, Mississippian, Illinois: Currier, 440; Savage and Nebel, 1651.

Salem formation, Mississippian, Indiana: Cumings, 439.
Salem gabbro-diorite, Devonian (?), Massachusetts: Clapp, 329.
Salem limestone, Mississippian, Indiana: Stockdale, 1819.
Salesville shale, Pennsylvanian, Texas: Moore and Plummer, 1358; Plummer and Moore, 1492.
Salmon River formation, Jurassic, British Columbia: Schofield, 1666; Schofield and Hanson, 1662.
Saltsburg sandstone, Pennsylvanian, West Virginia: Reger, 1573.
Saluda formation, Ordovician, Indiana: Cumings, 439.
Sample sandstone, Mississippian, Indiana: Cumings, 439.
Sample sandstone member, Mississippian, Kentucky: Butts, 262.
San Andreas limestone, New Mexico: Keyes, 1027.
San Andreas limestone, Permian, New Mexico: Ellis, 555; Rich, 1583.
San Angelo formation, Permian, Texas: Beede and Bentley, 118.
Sandia formation, New Mexico: Keyes, 1027.
Sandia formation, Pennsylvanian, New Mexico: Ellis, 555.
Sandy Huff shale, Pennsylvanian, West Virginia: Reger, 1573.
San Felipe formation, Cretaceous, Mexico: Stanton, 1794; Stephenson, 1803.
San Fernando sandstone series, Tertiary, Trinidad: Milner, 1322.
Sangamon interglacial epoch, Pleistocene, Iowa: Cable, 266.
Sangamon interglacial stage, Quaternary: Upham, 1975.
Sangamon soil zone, Pleistocene, Illinois: Savage and Udden, 1649.
San Lorenzo formation, Oligocene, California: Clark, 335; Vander Leck, 1976.
San Lorenzo series, Oligocene, California: Clark, 336.
San Pablo series, Miocene, California: Clark, 335, 336.
San Ramon formation, Oligocene, California: Clark, 336.
Santa Ana sandstone, California: Vaughan, 1979.
Santa Anna shale, Pennsylvanian, Texas: Moore and Plummer, 1358.
Santa Anna Branch shale, Pennsylvanian, Texas: Moore and Plummer, 1358.
Santa Anna Branch beds, Pennsylvanian, Texas: Plummer and Moore, 1492.
Santa Clara beds, Pliocene, California: Clark, 336.
Santa Fe formation, Tertiary, New Mexico: Darton, 467.
Santa Margarita formation, Miocene, California: Vander Leck, 1976.
Santa Margarita group, Miocene, California: Clark, 336.
Santa Ritan series, Silurian, Arizona: Keyes, 1029, 1036.
Santa Rosa sandstone, Triassic, New Mexico: Darton, 467; Rich, 1583.
San Timoteo beds, Pliocene, California: Frick, 613.
Saragossa quartzite, Silurian or Devonian, California: Vaughan, 1979.
Sarten sandstone, Cretaceous, New Mexico: Darton, 467.
Satilla formation, Pleistocene, Georgia: McCallie 1184; Teas, 1863.
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