COMMONWEALTH OF VIRGINIA

DEPARTMENT OF CONSERVATION
AND ECONOMIC DEVELOPMENT

DIVISION OF MINERAL RESOURCES

BIBLIOGRAPHY OF VIRGINIA GEOLOGY AND MINERAL RESOURCES—1941-1949

F. B. HOFFER

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James L. Calver
Commissioner of Mineral Resources and State Geologist

CHARLOTTESVILLE, VIRGINIA
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BIBLIOGRAPHY OF VIRGINIA GEOLOGY AND MINERAL RESOURCES—1941-1949

BY

F. B. HOFFER

INTRODUCTION

This bibliography lists the literature on the geology and mineral resources of Virginia released 1941 through 1949, plus some omissions from the *Annotated Bibliography of Virginia* by J. K. Roberts, published in 1942. Readers are encouraged to notify the Virginia Division of Mineral Resources of any omissions and errors in this bibliography or in Dr. Roberts' bibliography so that corrections may be included in later supplements.

Theses from colleges and universities in the United States and open-file reports which include data pertaining to the Commonwealth of Virginia are listed.

Where a report deals with more than three counties, it is entered in the index under Virginia or a subdivision of the Commonwealth such as Virginia—Southwestern, or under one of the physiographic provinces.

To Dr. James L. Calver, State Geologist and Commissioner of Mineral Resources, the writer wishes to express his thanks for the encouragement and criticisms in the preparation of this bibliography.

BIBLIOGRAPHY

AGNEW, WING G., *see also* Kline, Mitchell Henry, 1
Sand found best for stemming drill holes: Pit and Quarry, vol. 36, no. 1, p. 36, July 1943.

ALLEN, RHESA McCOY, JR.
1. Copper mineralization in eastern Amherst County, Virginia (abs.): Virginia Acad. Sci. Proc. 1948-49, p. 136, 1949.
2. Virginia; geology unlimited: Compass, vol. 26, no. 3, p. 233-251, 1949.

ALTHOUSE, HARRY W.
The Norton coals of the Big Sandy basin: Eng. and Mining Jour., vol. 77, p. 235-236, 1904.

ANDERSON, ROBERT L., *see* Young, William Harvey

ARGYLE, BEN ELDREDGE
Exploration of the Mecklenburg County, Virginia, tungsten area: U. S. Bur. Mines Rept. Inv. 3857, 5 p., 1946.

ARNOLD, CHESTER ARTHUR
Lagenospermum imparirameum sp. nov., a seedbearing fructification from the Mississippian of Pennsylvania and Virginia: Torrey Bot. Club. Bull., vol. 66, no. 5, p. 297-303, 1939.

ATWOOD, A. W.
Potomac, river of destiny: Natl. Geographic, vol. 88, p. 33-70, July 1945.

AVERITT, PAUL
The Early Grove gas field, Scott and Washington counties, Virginia: Virginia Geol. Survey Bull. 56, 50 p., 1941.

AVERY, WILLIAM M.
1. Mechanize quarry at Stephens City plant of M. J. Grove Lime Company: Pit and Quarry, vol. 38, no. 6, p. 75-76, Dec. 1945.
2. Virginia cinder block firm makes ten fold production increase to meet farm demand: Pit and Quarry, vol. 37, no. 9, p. 143-144, Mar. 1945.
3. Virginia quarry swings from highway materials to agricultural stone: Pit and Quarry: vol. 37, no. 3, p. 75, 78, Sept. 1946.

BAER, FRANCIS M.
(and Martin, W. H.) Some new finds of fossil ganoids in the Virginia Triassic: Science, vol. 110, no. 2869, p. 684-686, 1949.

BALLARD, T. J., *see* Kline, Mitchell Henry, 4.

BANKS, JOSEPH E.
The Kent fenster, Virginia: Thesis (M.S.), State Univ. of Iowa, 1937.

BARCLAY, GEORGE C.
The Miocene exposures of Tidewater Virginia: Rocks and Minerals, vol. 15, no. 10, p. 333-335, 349, 1940.

BARKER, WILLIAM
Helictites of Virginia: Compass, vol. 21, no. 4, p. 281-283, 1941.

BARLOW, WALLACE DUDLEY
Geology of the Salem area: Thesis (M.S.), Virginia Polytech. Inst., 1936; (abs.) Virginia Acad. Sci. Proc. 1934-35, p. 71, 1935.

BARNES, FARRELL FRANCIS, *see also* Brown, Carl Barrier, 1
Advance report on the sedimentation survey of Barcroft Reservoir, Alexandria, Virginia, September 17, 1937-March 8, 1938: U. S. Dept. of Agriculture, Soil Conserv. Service, Sedimentation Study 29, 1939.

BARSIGIAN, F. M., *see* Harness, C. L.

BARWICK, ARTHUR RICHARDSON
Skull of fossil *Delphinodon dividum* from banks of Potomac River at Wakefield, Virginia: Biol. Soc. Washington Proc., vol. 53, p. 91-92, 1940.

BASS, CHARLES EDWARD
1. Limestone mining in northern Virginia (abs.): Virginia Jour. Sci., vol. 3, no. 6, p. 251, 1942.
2. Commercial limestone production operations in the Shenandoah Valley, Virginia (abs.): Virginia Acad. Sci. Proc. 1945-46, p. 84-85, 1946.

BASSLER, RAY SMITH
The Paleozoic rugose coral family Paleocyclidae: Jour. Paleontology, vol. 11, no. 3, p. 189-201, 1937.

BATES, ROBERT LATIMER
New exposures of Ordovician bentonite in southwestern Virginia: Science, vol. 87, no. 2257, p. 300, 1948.

BAYLOR, J. B.
Report to the governor of Virginia, in reference to the survey of the oyster grounds: Virginia Senate Document 2, 11 p., 1893.

BENN, JAMES H.
The zeolite minerals, with emphasis on a locality near Washington, D. C.: Rocks and Minerals, vol. 19, no. 5, p. 135-141, 1944.

BERRY, EDWARD WILLIAM
Pinus and *Quercus* in the Chesapeake Miocene: Washington Acad. Sci. Jour., vol. 31, no. 12, p. 506-508, 1941.

BERRY, LEONARD G., *see* Graham, Albert R.

BERRYHILL, HENRY LEE, JR.
Stratigraphy and structure of the Wyndale quadrangle, Washington County, Virginia: Thesis (M.S.), Univ. of North Carolina, 1949.

BEVAN, ARTHUR CHARLES
1. Virginia Geological Survey work: Science, vol. 74, p. 630-631, 1931.
2. Metallic resources of Virginia (abs.): Virginia Acad. Sci. Proc., 1931-32, p. 39, 1932.
3. Development of Virginia's mineral resources: Southern Conservationist, vol. 1, no. 9, p. 6-7, 14, 16, 1937
4. General topography of Virginia; Industrial opportunities in Virginia: 1 p. of text, 2 plates. Richmond, Va., Virginia Conserv. Commission, 1938.
5. Industrial mineral resources; Industrial opportunities in Virginia: 1 p., 7 plates, Virginia Conserv. Commission, 1938.
6. Virginia's mineral industries: Commonwealth, vol. 5, no. 3, p. 7-13, 1938; Virginia Geol. Survey Reprint Ser. 2, 12 p., 1938.
7. Mineral resources of the South: Univ. Virginia News Letter, vol. 15, no. 16, p. 1, May 15, 1939.
8. Virginia's industrial limestones: Commonwealth, vol. 7, no. 2, p. 7-10, 1940; (abs.) Virginia Jour. Sci. vol. 2, no. 6, p. 212-213, 1941; reprint series, Virginia Geological Survey, no. 2, 4 p., 1942.
9. Ten year research program of the Virginia Geological Survey: Science, vol. 93, no. 2417, p. 403-404, 1941.
10. Virginia's war mineral resources: Commonwealth, vol. 9, no. 1, p. 9-12, 1942; Commonwealth, vol. 9, no. 2, p. 11-15, 1942.
11. Dolomite in Virginia (abs.): Virginia Jour. Sci., vol. 3, no. 6, p. 249, 1942.
12. Publications on the geology and mineral resources of Virginia: Virginia Geol. Survey Cir. 2, 57 p., 1942; slightly revised, Cir. 2, 58 p., 1947.
13. Virginia's geologic resources in war and peace: Univ. of Virginia Newsletter, vol. 19, no. 17, 1 p., June 1943; reprinted in Rocks and Minerals, vol. 18, no. 8, p. 227-231, Aug. 1943.

14. Virginia minerals in war: Virginia Conserv. Com. Div. Publicity and Advertising, 14 p., 1944?
15. Planning mineral resources into mineral industries: Virginia Geol. Survey Cir. 5, 11 p., 1945.
16. Note on geomorphic relations of Virginia bauxite deposits (abs.): Virginia Acad. Sci. Proc. 1943-44, p. 63-64, 1944.
17. Industrial minerals of Virginia: [12 p.], Charlottesville, Virginia Geol. Survey in coop. with Virginia Univ. Bur. Population and Economic Research, 1947.
18. The Virginia Geological Survey: Commonwealth, vol. 14, no. 10, p. 12-13, Oct. 1947.

BLOOMER, RICHARD RODIER, *see also* Bloomer, Robert Oliver, 5, 9
1. Basal Cambrian volcanics in the central Blue Ridge Mountains of Virginia: Thesis (M.S.), Univ. of Virginia, 1941.
2. Possible Unicoi tuffs in the central Blue Ridge of Virginia (abs.): Virginia Jour. Sci., vol. 2, no. 6, p. 216, 1941.

BLOOMER, ROBERT OLIVER
1. Geology of the Blue Ridge in the Buena Vista quadrangle, Virginia: Thesis (Ph.D.), Univ. of North Carolina, 1941
2. Observations on the structure of the Blue Ridge in central Virginia (abs.): North Carolina Acad. Sci. Proc., *in* Elisha Mitchell Sci. Soc. Jour., vol. 57, no. 2, p. 208-209, 1941.
3. (and DeWitt, Wallace, Jr.) Titaniferous sandstone near Buena Vista, Virginia: Econ. Geology, vol. 36, no. 7, p. 745-747, 1941.
4. Influence of the core of the Blue Ridge on the geology of the Buena Vista Virginia quadrangle (abs.): Virginia Jour. Sci., vol. 2, no. 6, p. 217, 1941.
5. (and Bloomer, Richard R.) Relations and age of the Catoctin Formation in central Virginia (abs.): Geol. Soc. America Bull., vol. 52, no. 12, pt. 2, p. 1890, 1941; Virginia Jour. Sci., vol. 3, no. 6, p. 249, 1942.
6. Sallings Mountain, central Virginia (abs.): Virginia Acad. Sci. Proc. 1943-44, p. 61-62, 1944.
7. An interpretation of lower James River, Virginia (abs.): Geol. Soc. America Bull., vol. 55, no. 12, p. 1472, 1944.
8. Petrology of the core of the Blue Ridge in central Virginia (abs.): Geol. Soc. America Bull., vol. 57, no. 12, pt. 2, p. 1278, 1946.
9. (and Bloomer, Richard R.) The Catoctin Formation in Central Virginia: Jour. Geol., vol. 55, no. 2, p. 94-106, 1947.
10. A tectonic intrusion of shale in Rockbridge County, Virginia: Jour. Geol., vol. 55, no. 1, p. 48-51, 1947.

BOARDMAN, LEONA
Geologic mapping in the United States: Geol. Soc. America Bull., vol. 60, no. 7, p. 1125-1131, 1949.

BOWIE, WILLIAM, *see also* Hayford, J. P.
Isostatic condition of the United States as indicated by groups of gravity stations: U. S. Coast and Geod. Survey Serial 366, 11 p., 1926.

BRANNOCK, KENT C.
Gallium found in Virginia beryl: Rocks and Minerals, vol. 17, no. 10, p. 351, 1942.

BRETZ, J. HARLAN
Vadose and phreatic features of limestone caverns: Jour. Geology, vol. 50, no. 6, pt. 2, p. 675-811, 1942.

BROWN, CARL BARRIER
1. (and Barnes, Farrell F.) Advance report on the sedimentation investigation of reservoirs and navigation improvements on the New River, Virginia and West Virginia, April 14-May 22, 1936: U. S. Dept. of Agriculture, Soil Conserv. Service, Sedimentation Study 29, 24 p., 1936.

2. (Seavy, Louis M., and Rittenhouse, Gordon) Advance report on an investigation of silting in the York River, Virginia, October 25-November 5, 1938: U. S. Dept. Agriculture Soil Conserv. Service Sedimentation Study 32, 11 p., 1939.

BROWN, WILLIAM RANDALL

1. Age relationships of certain metamorphic rocks in the vicinity of Lynchburg, Virginia (abs.): Virginia Jour. Sci., vol. 2, no. 6, p. 215, 1941.
2. Geology of the Lynchburg-Rustburg area, Virginia: Thesis (Ph.D.), Cornell Univ., 1942.
3. A late Precambrian landmass in eastern North America (abs.): Virginia Jour. Sci., vol. 3, no. 6, p. 248, 1942.
4. Kaolinization in Virginia pegmatities from a structural viewpoint: Virginia Acad. Sci. Proc. 1943-44, p. 61, 1944.
5. Some recent beryl finds in Virginia: Rocks and Minerals, vol. 20, no. 6, p. 264-265, 1945.

BUNCH, ROSELLA L.

The stratigraphy and paleontology of the Silurian System of parts of Highland County, Virginia: Thesis (M.A.), Oberlin College, 1940.

BURCHARD, ERNEST F., *see* Thoenen, John Roy.

BURNS, JAMES R., *see* Thornton, Charles P.

BUSHNELL, DAVID IVES, JR.

Trailing early man in Virginia: Smithsonian Inst. Exploration and Field Work in 1940, Pub. 3631, p. 75-78, 1941.

BUTTS, CHARLES

1. Geology of the Appalachian Valley in Virginia: Virginia Geol. Survey Bull. 52, pt. 1, 1940; pt. 2, 1941
2. (and Edmundson, Raymond S.) Geology of the southwestern end of Walker Mountain, Virginia: Geol. Soc. America Bull., vol. 54, no. 11, p. 1669-1692, 1943.

CADY, RICHARD CARLYSLE

Ground water resources of northern Virginia: Virginia Geol. Survey Bull. 50, 200 p., 1938.

CALIGA, CHARLES FARLEY

Petrography and geology of the rocks in the Ruckersville, Virginia, area: Thesis (M.A.), Univ. of Virginia, 1948.

CAMPBELL, HENRY DONALD

Significance of geological features in Jackson's Valley campaign; foreword by Marcellus Henry Stow: Virginia Jour. Sci., vol. 1, nos. 3-4, p. 40-45, 1940.

CASEY, JOHN H.

(Close, Jared A., and Smith, K. G.) Petrologic studies of Cambrian sandstones in the James River gorge, Balcony Falls, Virginia (abs.): Virginia Acad. Sci. Proc. 1946-47, p. 101, 1947.

CEDERSTROM, DAGFIN JOHN, *see also* Cushman, Joseph Augustine, 2

1. Progressive down-dip changes in composition of artesian water from the Cretaceous rocks of Virginia (abs.): Virginia Jour. Sci., vol. 2, no. 6, p. 216, 1941; Wash. Acad. Sci. Jour., vol. 32, no. 9, p. 280-281, 1942.
2. Industrial ground water at Franklin: Commonwealth, vol. 9, no. 1, p. 22, Jan. 1942.
3. Chloride in ground water in the Coastal Plain of Virginia: Virginia Geol. Survey Bull. 58, 36 p., 1943.
4. Deep wells in the Virginia Coastal Plain: Commonwealth, vol. 10, no. 4, p. 20-22, 56, 1943.
5. New stratigraphic units in eastern Virginia (abs.): Virginia Acad. Sci. Proc. 1943-44, p. 65, 1944.

6. Structural geology of southeastern Virginia: Am. Assoc. Petroleum Geologists Bull., vol. 29, no. 1, p. 71-95, 1945; Virginia Geol. Survey Reprint Ser. 9.
7. Selected well logs in the Virginia Coastal Plain north of James River: Virginia Geol. Survey Cir. 3, 82 p., 1945.
8. Geology and ground-water resources of the Coastal Plain in southeastern Virginia: Virginia Geol. Survey Bull. 63, 384 p., 1945.
9. Genesis of ground waters in the Coastal Plain of Virginia: Econ. Geol., vol. 41, no. 3, p. 218-245, 1946.
10. Chemical composition of ground water in the Coastal Plain of Virginia: Virginia Geol. Survey Bull. 68, 62 p., 1946 [1951].
11. Artificial recharge of a brackish water well: Commonwealth, vol. 14, no. 12, p. 31, 71-73, 1947.
12. Résumé of Virginia coastal stratigraphy (abs.): Virginia Acad. Sci. Proc. 1946-47, p. 96-97, 1947.

CHITTUM, HAROLD T., JR.
(McLaren, Walter J., and Oast, William) Petrologic studies of Cambrian sandstones of the Blue Ridge between Montebello and Glasgow (abs.): Virginia Acad. Sci. Proc. 1946-47, p. 112, 1947.

CLARK, AUSTIN HOBART
1. Some Pleistocene mammals from Warren County, Virginia: Science, n.s., vol. 88, no. 2273, p. 82, 1938.
2. Thomas Jefferson and science: Washington Acad. Sci. Jour., vol. 33, no. 7, p. 193-203, 1943.

CLEGG, JOHN E.
(and Goodrich, Edward A.) Mineralogical studies of the sediment of Rockfish River, Nelson County, Virginia (abs.): Virginia Acad. Sci. Proc. 1948-49, p. 138, 1949.

CLOSE, JARED A., *see also* Casey, John H.
Mineralogical studies of some Coastal Plain well samples (abs.): Virginia Acad. Sci. Proc. 1947-48, p. 110, 1948.

CLOUGH, WILLIAM ALLEN
Geology of the northern portion of the Bolar Valley anticline, Highland County, Virginia: Thesis (M.S.), Univ. of Virginia, 1948.

COLEMAN, CLARENCE S.
1. (and Porter, H. C.) Soil-rock relationships in northern Piedmont Virginia (abs.): Virginia Acad. Sci. Proc. 1947-48, p. 114-115, 1948.
2. Soil-rock relationship on Okinawa and the apparent similarity between the soils from similar parent material in southwest Virginia and on Okinawa (abs.): Virginia Acad. Sci. Proc. 1948-49, p. 140-141, 1949.

CONDON, JAMES C.
Mississippian limestones of Tazewell County, Virginia: Thesis (M.S.), State Univ. of Iowa, 1942.

CONLEY, JOHN E.
Production of lightweight concrete aggregates from clays, shales, slates, and other materials: U. S. Bur. Mines Rept. Inv. 4401, 121 p., 1948.

COOKE, CHARLES WYTHE
1. Cenozoic regular echinoids of eastern United States: Jour. Paleontology, vol. 15, no. 1, p. 1-20, 1941.
2. Two shorelines or seven?: Am. Jour. Sci., vol. 239, no. 6, p. 457-458, 1941.
3. Cenozoic irregular echinoids of eastern United States: Jour. Paleontology, vol. 16, no. 1, p. 1-16, 1942.
4. (Gardner, Julia Anna, and Woodring, Phillips Wendell) Correlation of the Cenozoic formations of the Atlantic and Gulf Coastal Plain and the Carribbean region (chart no. 12): Geol. Soc. America Bull., vol. 54, no. 11, p. 1713-1723, 1943.

COOPER, BYRON NELSON

1. Duality of the Pulaski fault in the type locality (abs.): Geol. Soc. America Proc. 1937, p. 74, 1938.
2. Athens equivalents northwest of Clinch Mountain in southwest Virginia (abs.): Geol. Soc. America Bull., vol. 52, no. 12, pt. 2, p. 1892-1893, 1941.
3. Moccasin formation in southwestern Virginia (abs.): Geol. Soc. America Bull., vol. 53, no. 12, pt. 2, p. 1799-1800, 1942.
4. (and Prouty, Chilton) Stratigraphy of the lower Middle Ordovician of Tazewell County, Virginia: Geol. Soc. America Bull., vol. 54, no. 6, p. 819-886, 1943.
5. Lower Middle Ordovician along Clinch Mountain in Virginia and Tennessee (abs.): Geol. Soc. America Bull., vol. 54, no. 12, p. 1824, 1943.
6. Geology and mineral resources of the Burkes Garden quadrangle, Virginia: Virginia Geol. Survey Bull. 60, 299 p., 1944.
7. Industrial limestones and dolomites in Virginia; New River-Roanoke River district: Virginia Geol. Survey Bull. 62, 98 p., 1944.
8. Industrial limestones in southwestern Virginia (abs.): Virginia Acad. Sci. Proc. 1943-44, p. 62, 1944.
9. Facies variations in the Middle Ordovician of the Appalachian Valley, Virginia (abs.): Geol. Soc. America Bull., vol. 55, no. 12, p. 1464, 1944.
10. Industrial limestones and dolmites in Virginia; Clinch Valley district: Virginia Geol. Survey Bull. 66, 259 p., 1945.
11. The Stones River equivalent in the Appalachian region: Jour. Geology, vol. 53, no. 4, p. 262-275, 1945
12. Standard section for the pre-Curdsville Middle Ordovician (abs.): Geol. Soc. America Bull., vol. 56, no. 12, p. 1152-1153, 1945.
13. (and Cooper, G. Arthur) Lower Middle Ordovician stratigraphy of the Shenandoah Valley: Geol. Soc. America Bull., vol. 57, no. 1, p. 35-114, 1946.
14. Metamorphism along the "Pulaski" fault in the Appalachian Valley of Virginia: Am. Jour. Sci., vol. 244, no. 2, p. 95-104, 1946.
15. Limestone facies in the Appalachian Valley of Virginia (abs.): Virginia Acad. Sci. Proc. 1945-46, p. 87, 1946.
16. Middle Ordovician trilobites from Virginia (abs.): Virginia Acad. Sci. Proc. 1946-47, p. 98-99, 1947.
17. Status of Mississippian stratigraphy in the central and northern Appalachian region, *in* Weller, J. R., ed., Symposium on problems of Mississippian stratigraphy and correlation: Jour. Geol., vol. 56, no. 4, p. 255-263, 1948.
18. Facies variations in the Middle Ordovician of western Virginia (abs.): Virginia Acad. Sci. Proc. 1947-48, p. 115, 1948.
19. (and McGill, W. M.) Notes on the geology field trip of the 1948 meeting (Catawba Valley?) (abs.): Virginia Acad. Sci. Proc. 1947-48, p. 118, 1948.
20. The search for oil and gas in Virginia: Commonwealth, vol. 16, no. 12, p. 28-30, 73-76, 1949.

COOPER, GUSTAVE ARTHUR, *see also* Cooper, Byron Nelson, 13

1. Collecting Ordovician fossils in the southern Appalachians: Smithsonian Inst. Exploration and Field Work in 1939, Pub. 3586, p. 17-20, 1940.
2. Silicified fossils [Permian, Texas, Ordovician, Virginia] (abs.): Virginia Acad. Sci. Proc. 1945-46, p. 87, 1946.
3. A new genus of Brachiopoda (*Stichotrophia*) from the Longview of Virginia: Harvard College Mus. Comp. Zoology Bull., vol. 100, no. 6, p. 473-474, 1948.

COSMINSKY, PHILLIP R.

An occurrence of psilomelane, variety lithiopherite, in Falls Church, Virginia: Rocks and Minerals, vol. 23, no. 3, p. 204, 1948.

CRARY, A. P., *see* Ewing, William Maurice, 1

CROSS, H. C.
Titanium, the metal with a future: Eng. and Mining Jour., vol. 150, no. 7, p. 119-123, 1949.

CULLISON, JAMES SHELLY
(and Prouty, Charles E.) A new and earlier occurrence of the edrioasteroid genus *Hemicystites:* Jour. Paleontology, vol. 13, no. 5, p. 524-525, 1939; (abs.) Geol. Soc. America Bull., vol. 49, no. 12, pt. 2, p. 1912, 1938

CUSHMAN, JOSEPH AUGUSTINE
1. Foraminifera from the Aquia Formation of Virginia: Cushman Lab. Foram. Research Contr., vol. 20, no. 1, p. 17-28, 1944.
2. (and Cederstrom, Dagfin John) An upper Eocene foraminiferal fauna from deep wells in York County, Virginia: Virginia Geol. Survey Bull. 67, 58 p., 1945.

DARTON, NELSON HORATIO
1. Sedimentary formations of Washington, D. C. and vicinity. Geologic map without text; one sheet, scale 1:31, 680, U. S. Geol. Survey, 1947.
2. The Marlboro clay: Econ. Geology, vol. 43, no. 2, p. 154-155, 1948.

DAVENPORT, CHARLES BENEDICT
Growth lines in fossil pectens as indicators of past climates: Jour. Paleontology, vol. 12, no. 5, p. 514-515, 1938.

DAVIDSON, DONALD MINER
1. Diamond-drill sludge sampling and appraisal of a weathered ilmenite ore body, Piney River, Virginia: A. I. M. E. Trans., vol. 178, p. 505-509, 1948; (abs.), Econ. Geology, v. 40, no. 1, p. 82, 1945.
2. (Grout, F. F., and Schwartz, George Melvin) Notes on the ilmenite deposit at Piney River, Virginia: Econ. Geology, vol. 41, no. 7, p. 738-748, 1946.

DAVIES, WILLIAM E.
River terraces of the Piedmont section of the Potomac (abs.): Virginia Acad. Sci. Proc. 1948-49, p. 136, 1949.

DAVIS, C. W., *see* Dean, R. S.

DAVIS, FREDERICK AUGUSTUS WILLIAM, *see* Rankin, Hiram S.

DAVIS, J. D., *see also* Holmes, C. R.; Reynolds, D. A., 1
(and others) Carbonizing properties of lower Banner coal from no. 56 mine, Dante, Russell County, Virginia: U. S. Bur. Mines Tech. Paper 720, 45 p., 1949.

DEAN, R. S.
(and Davis, C. W.) Magnetic separation of ores: U. S. Bur. Mines Bull. 425, 417 p., 1941.

DECKER, CHARLES ELIJAH
1. Cambrian graptolites of Virginia (abs.): Geol. Soc. America Bull., vol. 56, no. 12, pt. 2, p. 1154, 1945.
2. A new species of hydrozoa from the Athens shale of Virginia: Jour. Paleontology, vol. 22, no. 4, p. 528-529, 1948.
3. Five new varieties of graptolites from Tennessee and Virginia: Jour. Paleontology, vol. 23, no. 2, p. 214-217, 1949.

DeWITT, WALLACE, JR., *see* Bloomer, Robert Oliver, 3

DONNAY, JOSEPH DESERE HUBERT
Morphologie cristalline de la microlite [Virginia]: Royal Soc. Canada Trans., 3d ser., vol. 35, sec. 4, p. 51-56, May 1941.

DRYDEN, ABRAHAM LINCOLN, JR.
(and Dryden, Clarissa) Comparative rates of weathering of some common heavy minerals: Jour. Sed. Petrology, vol. 16, no. 3, p. 91-96, 1946.

DRYDEN, CLARISSA, *see* Dryden, Abraham Lincoln, Jr.

DUERKSEN, JACOB A.
Pendulum gravity data in the United States: U. S. Coast and Geod. Survey Spec. Pub. 244, 218 p., 1945.

DUNBAR, CARL OWEN
Correlation charts prepared by the Committee on Stratigraphy of the National Research Council: Geol. Soc. America Bull., vol. 53, no. 3, p. 429-433, 1942.

DUNKLE, DAVID H., *see* Parrott, William T., 5

EDMUNDSON, RAYMOND SMITH, *see also* Butts, Charles, 2
1. Structure of a part of Walker Mountain, Virginia (abs.): Geol. Soc. America Bull., vol. 52, no. 12, pt. 2, p. 1899, 1941; with title: Geology of the southwestern part of Walker Mountain in Smyth and Washington counties, Virginia (abs.): Virginia Jour. Sci., vol. 3, no. 6, p. 251.
2. Some stratigraphic variations in northern Virginia (abs.): Virginia Jour. Sci., vol. 2, no. 6, p. 211, 1941
3. High-calcium limestone in the Covington-Staunton-Buchanan district, Virginia (abs.): Virginia Acad. Sci. Proc. 1943-44, p. 62, 1944.
4. Industrial limestones and dolomites in Virginia, northern and central parts of Shenandoah Valley: Virginia Geol. Survey Bull. 65, 195 p., 1945.
5. High-magnesium dolomite near Cootes Store in Rockingham and Shenandoah counties, Virginia (abs.): Virginia Acad. Sci. Proc., 1945-46, p. 89, 1946.
6. Pulaski and Staunton faults in Augusta and Rockbridge counties, Virginia (abs.): Virginia Acad. Sci. Proc. 1946-47, p. 98, 1947.

EDWARDS, RICHARD ARCHER
Yorktown and Duplin ostracoda of North Carolina and Virginia: Thesis (Ph.D.), Univ. North Carolina, 1938.

EILERSTEN, D. E.
(and Feiss, J. W.) Open pit mining for manganese: Mining Congress Jour., vol. 32, no. 9, 1946.

ELKINS, THOMAS ANTHONY
Test of a quantitative mountain building theory by Appalachian structural dimensions: Geophysics, vol. 7, no. 1, p. 45-60, 1942; (abs.): Oil and Gas Jour., vol. 39, no. 47, p. 64, April 3, 1941.

EMERY, ALDEN HAYES
Geology of the Pearisburg, Virginia region: Thesis (M.A.), Ohio State Univ., 1923.

ENGINEERING NEWS RECORD
Sand to six inch stone, all from same quarry; aggregates for Buggs Island Dam: Eng. News Record, vol. 143, p. 30-31, Oct. 6, 1949.

ESPENSHADE, GILBERT HOWRY
Tungsten deposits of Vance County, North Carolina and Mecklenburg County, Virginia: U. S. Geol. Survey Bull. 948-A, 17 p., 1947.

EVITT, WILLIAM ROBERT, II, *see also* Secrist, Mark H.
Silicified trilobites from the lower Lincolnshire Formation in northern Virginia: Geol. Soc. America Bull., vol. 58, no. 12, pt. 2, p. 1178, 1947.

EWING, WILLIAM MAURICE
1. (Crary, A. P., and Rutherford, H. M.) Geophysical investigations in the emerged and submerged Atlantic Costal Plain; part 1, methods and results: Geol. Soc. America Bull. vol. 48, no. 6, p. 753-801, 1937.
2. Present position of the former topographic surface of Appalachia from seismic evidence, *in* Symposium-the surface and subsurface exploration of continental borders: Am. Geophys. Union Trans., 21st. Ann. Mtg., pt. 3-A, p. 796-801, 1940.
3. Geophysical investigations of continental borders [Atlantic Coast, U.S.] (abs.): Tulsa Geol. Soc. Digest., vol. 15, p. 77, 1947.

EWOLDT, HAROLD B.
(and Sanford, Robert S.) Investigation of Sweet Springs manganese deposits, Monroe County, West Virginia and Craig County, Virginia: U. S. Bur. Mines Rept. Inv. 4433, 5 p., 1949.

FEISS, J. W., *see* Eilersten, D. E.

FIELDNER, ARNO CARL
1. (and others) Carbonizing properties and petrographic composition of upper Banner bed coal from Clinchfield No. 9, Dickenson County, Va., and of Indiana No. 4 bed coal from Saxton No. 1 mine, Vigo County, Ind., and the effect of blending these coals with Beckley bed coal: U.S. Bur. Mines Tech. Paper 584, 81 p., 1938.
2. (and others) Carbonizing properties and petrographic composition of lower Banner-bed coal from Keen Mountain mine, Buchanan County, Va., and effect of blending this coal with Pittsburgh-bed (Warden mine) coal: U. S. Bur. Mines Tech. Paper 616, 47 p., 1940.
3. Typical analyses of coals of the United States: U. S. Bur. Mines Bull. 446, 45 p., 1942.
4. (Fisher, P. L., and Pollock, Marjorie B.) Bibliography of Bureau of Mines investigations of coal and its products 1940-1945: U. S. Bur. Mines Tech. Paper 698, 53 p., 1947.

FISCHER, ALFRED GEORGE
1. Notes on the Athens fauna [Roanoke area, Virginia] (abs.): Virginia Jour. Sci., vol. 3, no. 6, p. 246, 1942.
2. A carapace of the Ordovician trilobite *Telephus:* Jour. Paleontology, vol. 20. no. 6, p. 566-569, 1946.

FISH, F. H.
(and others) Municipal water supplies of Virginia: Virginia Polytech. Inst. Bull., vol. 25, no. 2, 51 p., 1932.

FISHER, P. L., *see* Fieldner, Arno Carl, 4

FLEISCHER, MICHAEL
(and Richmond, Wallace E.) The manganese oxide minerals: a preliminary report: Econ. Geology, vol. 38, no. 4, p. 269-286, 1943.

FLINT, RICHARD FOSTER
Atlantic coastal "terraces": Washington Acad. Sci. Jour., vol. 32, no. 8, p. 235-237, 1942.

FLOWER, ROUSSEAU HAYNER
1. Studies of Paleozoic nautiloidea; part 3, a gonioceras from Virginia: Bull. Am. Paleontology, vol. 28, no. 109, p. 21-29, 1943.
2. New names for three Paleozoic fossil homonyms: Jour. Paleontology, vol. 19, no. 1, p. 76-77, 1945.

FLYNN, GEORGE J.
Average heating values of American coals by rank and states: U. S. Bur. Mines Inf. Cir. 7538, 11 p., 1949.

FOERSTE, AUGUST F., *see* Ulrich, Edward Oscar, 2

FOSTER, MARGARET DOROTHY
1. Chemical character of the hot springs of Arkansas and Virginia: Indus. and Eng. Chemistry: vol. 22, p. 632-633, 1930.
2. Base-exchange and sulphate reduction in salty ground waters along Atlantic and Gulf coasts: Am. Assoc. Petroleum Geologists Bull., vol. 26, no. 5, p. 838-844, 1942.

FOX, PORTLAND PORTER
(and Grant, Leland F.) Ordovician bentonites in Tennessee and adjacent states: Jour. Geology, vol. 52, no. 5, p. 319-332, 1948.

FREY, D. G.
Oyster bars of the Potomac River: U. S. Fish and Wildlife Service Spec. Rept. 32, 93 p., 1946.

FULLER, GLEN LOREN
Soil conservation in Virginia and the Carolinas (abs.): Geol. Soc. America Bull., vol. 49, no. 12, pt. 2, p. 1967-1968, 1938.

FULLER, JAMES OSBORN, *see* Miller, Ralph LeRoy, 3

FUNKHOUSER, JOHN W.
A descriptive comparison of Tolley's and Cave Springs caves, Rockbridge County, Virginia (abs.): Virginia Acad. Sci. Proc. 1947-48, p. 117, 1948.

FURCRON, AURELIUS SYDNEY
1. The theory of lakes and mountain barriers in early American geology: Ohio Jour. Sci., vol. 36, no. 6, p. 307-314, 1936.
2. Age of Catoctin volcanic rocks in Virginia (abs.): Geol. Soc. America Bull., vol. 58, no. 12, pt. 2, p. 1182, 1947.

GARDNER, JULIA ANNA, *see also* Cooke, Charles Wythe, 4
1. Mollusca from the Miocene and lower Pliocene of Virginia and North Carolina; part 1, Pelecypoda. With a summary of the stratigraphy by W. C. Mansfield: U. S. Geol. Survey Prof. Paper 199-A, p. 1-178, 1943.
2. Mollusca from the Miocene and lower Pliocene of Virginia and North Carolina; part 2, Scaphopoda and Gastropoda: U. S. Geol. Survey Prof. Paper 199-B, p. 179-310, 1948.

GILDERSLEEVE, BENJAMIN
1. Eocene of Virginia: Virginia Geol. Survey Bull. 57, 43 p., 1942.
2. Minerals and structural materials of southwest Virginia: Tennessee Valley Authority, Regional Products Research Div., Rept. A, 35 p., 1946.

GILES, ALBERT WILLIAM
Structure of the Little North Mountain of the north-central Appalachians: Jour. Geology, vol. 50, no. 8, p. 961-980, 1942.

GILMAN, WARREN FANNING
Tectonics of the northwest portion of the Lovingston area, Virginia: Thesis (M.A.), Univ. Toronto, 1948.

GINN, GEORGE W.
Insoluble residues from Ordovician limestones near Collinstown P. O., Rockbridge County, Virginia (abs.): Virginia Acad. Sci. Proc. 1948-49, p. 138, 1949.

GLADSTONE, IRWIN
(Nelson, V. E., and Kent, D. F.) The Arcadia zinc area, Scott County, Virginia: U. S. Geol. Survey Prelim. Rept., 2 p., 1945.

GLASS, JEWELL JEANETTE, *see* Koschman, Albert Herbert

GOLDSTONE, SELMA L.
A mechanical analysis of the Oriskany of northwest Virginia: Thesis (A.M.), Oberlin College, 1938.

GOOCH, EDWIN OCTAVIUS
Geology of the Woodstock area, Shenandoah County, Virginia: Thesis (M.A.), Univ. of Virginia, 1949.

GOODMAN, CLARK D., *see* Hurley, Patrick Mason

GOODRICH, EDWARD A., *see* Clegg, John E.

GORDON, SAMUEL G.
Mineralogical notes-4, jarosite from Midvale, Virginia: Acad. Nat. Sci. Philadelphia Proc., vol. 77, p. 8-9, 1925

GOTTLEIB, SIDNEY, *see* Klinefelter, Theron A.

GOTTSCHALK, LOUIS C.
Effects of soil erosion on navigation in upper Chesapeake Bay: Geog. Rev., vol. 35, no. 2, p. 219-238, 1945.

GRACE, JEAN CAMPBELL
[Review of] Preliminary report on the gold deposits of the Virginia Piedmont by Charles Frederick Park, 1936: Jour. Geology, vol. 45, no. 6, p. 688, 1937.

GRAHAM, ALBERT R.
(and Berry, Leonard G.) *Chalcosiderite* [Cornwall] and *turquoise* [Virginia] (abs.): Geol. Soc. America Bull., vol. 57, no. 12, pt. 2, p. 1198, 1946; Am. Mineralogist, vol. 32, no. 3-4, p. 201, 1947.

GRANT, LELAND F., *see* Fox, Portland Porter

GREEN, FLETCHER MELVIN
Gold mining in ante-bellum Virginia: Virginia Mag. of History and Biography, vol. 45, no. 3, p. 227-235, 1937.

GRIFFITTS, WALLACE RUSH
(and others) Occurrence of mica-bearing pegmatites in the southeastern states (abs.): Geol. Soc. America Bull., vol. 56, no. 12, pt. 2, p. 1162, 1945; Econ. Geology, vol. 40, no. 8, p. 592, 1945; Am. Mineralogist, vol. 31, no. 3-4, p. 194-195, 1946.

GROSH, WESLEY A.
1. Investigation of the Sutherland copper prospect, Floyd County, Virginia: U. S. Bur. Mines Rept. Inv. 4357, 2 p., 1948.
2. Investigation of the Toncrae-Howard copper deposits, Floyd County, Virginia: U. S. Bur. Mines Rept. Inv. 4362, 4 p., 1948.
3. Investigation of the Valzinco lead-zinc mine, Spotsylvania County, Virginia: U. S. Bur. Mines Rept. Inv. 4403, 7 p., 1949.
4. Investigation of the Vest nickel prospect, Floyd County, Virginia: U. S. Bur. Mines Rept. Inv. 4491, 4 p., 1949.
5. Investigations of the Allah-Cooper lead-zinc mine, Louisa County, Virginia: U. S. Bur. Mines Rept. Inv. 4604, 3 p., 1949.

GUNN, ROSS
A quantitative study of the lithosphere and gravity anomalies along the Atlantic Coast: Franklin Inst. Jour., vol. 237, p. 139-154, 1944.

HAMAKER, JOHN IRWIN
The composition of beach sand with special reference to its organic component: Randolph-Macon Woman's College Bull., vol. 16, no. 4, p. 1-15, 1930.

HAMMER, SIGMUND IMMANUEL
(and Heck, E. T.) A gravity profile across the central Appalachians, Buckhannon, West Virginia to Swift Run Gap, Virginia: Am. Geophys. Union Trans., 22d Ann. Mtg., pt. 2, p. 353-362, 1941.

HARBECK, GUY EARL
Reservoirs in the United States: U. S. Geol. Survey, Cir. 23, 72 p., 1948.

HARLAN, EDWIN H.
(and Haynes, R. A.) Heavy mineral sediments of the Tye River valley, Nelson County, Virginia (abs.): Virginia Acad. Sci. Proc. 1947-48, p. 111, 1948.

HARNESS, C. L.
(and Barsigian, F. M.) Mining and marketing of barite: U. S. Bur. Mines Inf. Cir. 7345, 78 p., 1946.

HARRIS, STANLEY EDWARDS
Geology of Mud Fork area, Tazewell County, Virginia: Thesis (M.S.), State Univ. of Iowa, 1942.

HAWKINS, ALFRED CARY
1. Fold structure in the Precambrian complex of the Blue Ridge in Carroll and

Grayson counties, Virginia (abs.): Virginia Jour. Sci., vol. 3, no. 6, p. 247, 1942.
2. Minerals of Riverton, Virginia: Rocks and Minerals, vol. 17, no. 11, p. 375, 1942.

HAY, OLIVER PERRY
On the geological age of the Walker Hotel swamp deposit in Washington, D. C., and on the origin and age of the Coastal Plain terraces in general: Washington Acad. Sci. Jour., vol. 14, p. 255-264, 1924.

HAYFORD, J. F.
(and Bowie, William) The effect of topography and isostatic compensation upon the intensity of gravity: U. S. Coast and Geod. Survey Spec. Pub. 10, 132 p., 1912.

HAYNES, R. A., *see* Harlan, Edwin H.

HEADLEE, A. J. W., *see* Price, Paul Holland, 1

HECK, E. T., *see* Hammer, Sigmund Immanuel

HENDERSON, EDWARD PORTER
Some unusual formations in Skyline Caverns, Virginia: Natl. Speleol. Soc. Bull., vol. 11, no. 31, p. 31-34, Nov. 1949.

HENRY, ELWIN F.
Soils-geology relationships in Prince Edward County, Virginia (abs.): Virginia Acad. Sci. Proc. 1948-49, p. 140, 1949.

HICKMAN, ROBERT CARNES
1. Bush-Hutchins ilmenite, Roanoke County: U. S. Bur. Mines Rept. Inv. 4112, 5 p., 1947.
2. Pyrites, Mineral, Louisa County, Virginia: U. S. Bur. Mines Rept. Inv. 4116, 3 p., 1947.
3. Virginia marl deposits, New Kent County, Virginia: U. S. Bur. Mines Rept. Inv. 4114, 4 p., 1947.

HIDDEN, WILLIAM EARL
Mineralogical notes—four new localities of fergusonite: Am. Jour. Sci., 3d, vol. 41, p. 440, 1891.

HOFFMAN, RICHARD L.
Local drainage changes in the vicinity of Clifton Forge, Virginia (abs.): Virginia Acad. Sci. Proc. 1945-46, p. 89-90, 1946.

HOLDEN, ROY JAY
1. Three items of Virginia geology (abs.): Virginia Jour. Sci., vol. 2, no. 6, p. 213-214, 1941.
2. Geological field trip in the Roanoke-Salem area, Virginia (abs.): Virginia Jour. Sci., vol. 3, no. 6, p. 252, 1942.
3. Weathering of spessartite (abs.): Virginia Jour. Sci., vol. 3, no. 6, p. 246, 1942.
4. The "Punch" Jones and other Appalachian diamonds: Virginia Polytech. Inst., Eng. Expt. Sta. Ser., Bull. 56, 32 p., 1944; (abs.) Virginia Acad. Sci. Proc. 1943-44, p. 64, 1944. Reprinted in Compass, vol. 26, no. 3, p. 197-224, 1949.
5. Wavellite in the Rorer mine, Virginia: Rocks and Minerals, vol. 20, no. 1, p. 6, 1945.

HOLMES, C. R.
(Wilson, J. E., and Davis, J. D.) Comparative yields of light oil, tar, and constituents from carbonization tests at 800, 900, and 1000 degrees: U. S. Bur. Mines Rept. Inv. 3695, 12 p., 1943.

HORN, EGMONT
(and Woods, Henry H.) Source of the sediments of Tuscarora sandstone in Massanutten Mountain, Virginia: Virginia Jour. Sci., vol. 2, no. 7-8, p. 270-271, 1941; (abs.) Virginia Jour. Sci., vol. 2, no. 6, p. 211-212, 1941.

HORTON, ROGER GOLDSMITH
A study of the geologic history of the Potomac River and its environs: Thesis (M.A.), Catholic University of America, 1931.

HOWELL, BENJAMIN FRANKLIN, *see* Resser, Charles E., 2

HOWELL, JESSE V.
(and Levorsen, Arville I.) Directory of geological material in North America: Am. Assoc. Petroleum Geologists, vol. 30, no. 8, pt. 2, p. 1321-1432, 1946.

HUFFMAN, GEORGE GARRETT
Middle Ordovician limestone from Lee County, Virginia to central Kentucky: Jour. Geology, vol. 53, no. 3, p. 145-174, 1945; (abs.) Geol. Soc. America Bull., vol. 53, no. 12, pt. 2, p. 1830-1831, 1942; Thesis (Ph.D.), Columbia Univ., 1945.

HURLEY, PATRICK MASON
(and Goodman, Clark D.) Helium age measurements; I. Preliminary magnetite index: Geol. Soc. America Bull., vol. 54, no. 3, p. 305-323, 1943.

HUSTED, JOHN EDWIN
An unreported rock type from the Burkeville-Crewe area, Virginia (abs.): Virginia Jour. Sci., vol. 3, no. 6, p. 250-251, 1942.

ISACHEN, YNGVAR W.
Petrology of the Catoctin Formation in the Lovingston quadrangle, central Virginia: Thesis (A.M.), Washington Univ. (St. Louis), 1949.

JANSSEN, RAYMOND ELLSWORTH
Nature's bridges: Sci. Monthly, vol. 57, no. 3, p. 210-219, 1943.

JENKINS, PHILIP
1. Current drilling invokes interest in Virginia's only producing oil field (Rose Hill, Lee County): Oil and Gas Jour., vol. 47, no. 16, p. 72-74, 1948.
2. [Petroleum] developments in Virginia in 1947: Am. Assoc. Petroleum Geologists Bull., vol. 32, no. 6, p. 912, 1948.

JENSON, NAN C.
Marketing kyanite and allied minerals: U. S. Bur. Mines Inf. Cir. 7234, 20 p., 1943.

JILLSON, WILLARD ROUSE
1. The Rose Hill oil pool: Frankfort, Kentucky, 34 p., 1947.
2. Thrust-shatter theory of oil accumulation: World Oil, vol. 126, no. 10, p. 40-42, 1947

JOHNSON, JAMES HOWE
A study of the heavy minerals in the Paleozoic rocks of the Blacksburg area: Thesis (M.S.), Virginia Polytech. Institute, 1938.

JONES, WALDO H.
Rare minerals in old Virginia: Mineralogist, vol. 17, no. 2, p. 62-63, 1949.

JULIHN, C. E.
(and Moon, L. B.) Summary of mines exploration projects on deposits of raw material resources for steel production: U. S. Bur. Mines Rept. Inv. 3801, 35 p., 1945.

KAY, GEORGE MARSHALL
1. Taconic allochthone and the Martic thrust: Science, vol. 94, no. 2429, p. 73, 1941.
2. Development of the northern Alleghany synclinorium and adjoining regions: Geol. Soc. America Bull., vol. 53, no. 11, p. 1601-1657, 1942; (abs.) vol. 52, no. 12, pt. 2, p. 1912, 1941.
3. Middle Ordovician limestones in western anticlines in West Virginia and central Virginia (abs.): Geol. Soc. America Bull., vol. 53, no. 12, pt. 2, p. 1831, 1942

4. Middle Ordovician limestones in southeastern West Virginia and adjacent Virginia(abs.): Geol. Soc. America Bull., vol. 57, no. 12, pt. 2, p. 1210, 1946.
5. Bolarian series of the Ordovician, [Virginia] (abs.): Geol. Soc. America Bull., vol. 58, no. 12, pt. 2, p. 1198-1199, 1947.
6. Summary of Middle Ordovician bordering Alleghany synclinorium: Am. Assoc. Petroleum Geologists Bull., vol. 32, no. 8, p. 1397-1416, 1948.

KEARNEY, THOMAS H.
Report on a botanical survey of the Dismal Swamp region: U. S. Dept. Agriculture, Div. of Botany, Contr. from the U. S. Natl. Herbarium, vol. 5, no. 6, 1901.

KEEVIL, NORMAN BELL
(and others) Causes of variations in radioactivity data: Am. Jour. Sci., vol. 241, no. 6, p. 345-365, 1943; (abs.) Mines Magazine, vol. 34, no. 9, p. 518, 1944.

KENT, D. F., *see* Gladstone, Irwin

KESLER, THOMAS LINGLE
Geology of the Catawba Mountain (Virginia) area: Thesis (M.S.), Univ. of North Carolina, 1930.

KING, PHILIP BURKE
1. Manganese deposits of the Elkton area, Virginia: U. S. Geol. Survey Bull. 940-B, p. 15-55, 1943.
2. The floor of the Shenandoah Valley: Am. Jour. Sci., vol. 247, no. 2, p. 73-93, 1949.
3. The base of the Cambrian in the southern Appalachians: Pt. 1, Am. Jour. Sci., vol. 247, no. 8, p. 513-530, 1949; pt. 2. Am. Jour. Sci., vol. 247, no. 9, p. 622-645, 1949.

KLINE, MITCHELL HENRY
1. (and Agnew, Wing G.) Yancey-Crawford manganese deposits, Rockingham County, Virginia: U. S. Bur. Mines Rept. Inv. 4231, 5 p., 1948.
2. Watson manganese deposit, Page County, Virginia: U. S. Bur. Mines Rept. Inv. 4232, 10 p., 1948.
3. (and Robertson, A. F.) Investigation of Round Mountain manganese properties, Bland County, Virginia: U. S. Bur. Mines Rept. Inv. 4342, 9 p., 1948.
4. (and Ballard, T. J.) Investigation of the Great Gossan Lead, Carroll County, Virginia: U. S. Bur. Mines Rept. Inv. 4532, 39 p., 1949.

KLINEFELTER, THERON ALBERT
(Speil, Sidney, and Gottleib, Sidney) A survey of domestic talcs for high frequency insulators: U. S. Bur. Mines Rept. Inv. 3804, 48 p., 1945.

KNECHTEL, MAXWELL M., *see also* Milton, Charles
Manganese deposits of the Lyndhurst-Vesuvius district, Augusta and Rockbridge counties, Virginia: U. S. Geol. Survey Bull. 940-F, p. 163-198, 1943.

KOSCHMAN, ALBERT HERBERT
(Glass, Jewell Jeanette, and Vhay, John Stewart) Tin deposits of Irish Creek: U. S. Geol. Survey Bull. 936-K, p. 271-296, 1942.

KRINITZSKY, ELLIS LOUIS
A fault-plane cavern: Jour. Geology, vol. 55, no. 2, p. 107-119, 1947.

LADD, HARRY S.
1. (and Stead, Frank W.) Manganese deposits of the Flat Top and Round Mountain districts, Bland and Giles counties, Virginia: U. S. Geol. Survey Bull. 940-H, p. 219-245, 1943.
2. Manganese deposits of the Sweet Springs district, West Virginia and Virginia: U. S. Geol. Survey Bull. 940-G, p. 199-217, 1944.

LAFFERTY, ROBERT CARROLL
Central basin of Appalachian geosyncline: Am. Assoc. Petroleum Geologists

Bull., vol. 25, no. 5, p. 781-825, 1941; reprinted, Appalachian Geol. Soc. Bull., vol. 1, p. 202-238, 1949.

LAMAR, WILLIAM L.
(and Whetstone, G. W.) Chemical character of surface waters in Virginia, 1945-46: Virginia Div. Water Resources and Power Bull. 8, 46 p., 1947.

LANDES, KENNETH KNIGHT
Age and distribution of pegmatites: Am. Mineralogist, vol. 20, no. 2, p. 81-105, 1935.

LANG, A. G., *see* Newcombe, C. L., 1

LAURENCE, ROBERT ABRAHAM, *see* Rankin, Hiram S.

LAUTERBACH, RICHARD E.
A new chemical analysis of the Staunton, Virginia, siderite: Soc. Research Meteorites Contr., fasc. 2, 1936, p. 11-12, 1937.

LERICHE, MAURICE
Contribution of l'etude des ichtyogiques marines des terrains tertiares de le plaine cotière Atlantique et du centre des Etats-Unis; le synchronisme des formations tertiares des deux cotês de l'Atlantique: Paris, Société Geologique de France Memoire 45, vol. 20, p. 2-4, 1942.

LEVORSEN, ARVILLE I., *see* Howell, Jesse I.

LINTER, E. J.
Piney River kaolin deposit, Nelson County, Virginia: U. S. Bur. Mines, Open-file report, 8 p., 1942.

LOCKWOOD, CHARLES WESLEY, JR.
1. Yorktown (Miocene) invertebrate fauna hitherto undescribed in the student series: Thesis (M.A.), Univ of Virginia, 1949.
2. Certain invertebrate fossils of the Yorktown Formation, Virginia (abs.): Virginia Acad. Sci. Proc. 1948-49, p. 135-136, 1949.

LOMBARD, AUGUSTIN E.
Appalachian and Alpine structures—a comparative study: Am. Assoc. Petroleum Geologists Bull., vol. 32, no. 5, p. 709-744, 1948.

LOVE, SAMUEL KENNETH
Soil loss in Potomac flood: Eng. News-Rec., vol. 118, p. 935, 1937.

LOVELL, A. P. R., *see* Parrott, William T., 3

LUCE, R. H.
Survey of the oyster bars of the lower Potomac River: Maryland Conserv. Dept., Ann. Rept. 6, p. 127-149, 1929.

McCORMICK, JOHN T.
(and Sears, Charles E., Jr.) Industrial mineral problems of Virginia (abs.): Virginia Jour. Sci., vol. 3, no. 6, p. 248, 1942.

McDANIEL, ALLEN B.
An underground dam impounds water for Harrisonburg, Virginia: Am. City, vol. 50, no. 7, p. 61-62, 1935.

McGAUHEY, P. H.
1. Hydrology of Virginia; part 1, annual rainfall and stream flow studies to statistical methods of analysis: Virginia Polytech. Inst., Eng. Expt. Sta., Ser. no. 33, 113 p., 1938.
2. Hydrology of Virginia, part 2, flood studies, storms that have caused great floods, great rainfalls: Virginia Polytech. Inst., Eng., Expt. Sta., Ser. no. 44, 87 p., 1940.

McGAVOCK, CECIL BILLUPS
New pelecypods from the Yorktown Formation of Virginia: Notulae Naturae, 139, 3 p., 1944.

McGILL, WILLIAM MAHONE, *see also* Cooper, Byron Nelson, 19

1. Gold deposits of Virginia: Mines Mag., vol. 24, no. 2, p. 23-24, 1934.
2. The occurrence of ground water along the Fall Zone in Virginia (abs.): Virginia Jour. Sci., vol. 2, no. 6, p. 216-217, 1941.
3. Ground water work of the Virginia Geological Survey (abs.): Virginia Jour. Sci., vol. 3, no. 6, p. 245, 1942.
4. Ground water supplies and studies in Virginia: Virginia Municipal Rev., vol. 21, no. 5, p. 87-88, 1944.
5. Recent sinks near Waynesboro, Virginia (abs.): Virginia Acad. Sci. Proc. 1943-44, p. 63-64, 1944.
6. Exploration for oil and gas in Virginia: Am. Assoc. State Geologists Jcur., vol. 16, no. 1, p. 16-20, 1945.
7. Notes on undeveloped caves of Virginia: Natl. Speleol. Soc. Bull., vol. 8, p. 1-7, 1946.
8. Test-drilling for ground water near Waynesboro, Virginia (abs.): Virginia Acad. Sci. Proc. 1945-46, p. 85-86, 1946.
9. Field trip, Richmond area: Virginia Acad. Sci. Proc. 1945-46, p. 90, 1946.
10. Explorations for natural gas and petroleum in Virginia, *in* A.I.M.E., Statistics of oil and gas development and production, 1947: p. 377-379, 1948.
11. Red Oak granite near Buggs Island Dam site, Mecklenburg County, Virginia (abs.): Virginia Acad. Sci. Proc. 1946-47, p. 99, 1947.
12. Some recent and present investigations of the State Geological Survey (abs.): Virginia Acad. Sci. Proc. 1947-48, p. 112, 1948.
13. Some plans, projects, and problems of the State Geological Survey (abs.): Virginia Acad. Sci. Proc. 1948-49, p. 134, 1949.
14. Field trip, Chesterfield and Amelia counties (abs.): Virginia Acad. Sci. Proc. 1948-49, p. 141, 1949.

McINTOSH, FRANK K.

Investigation of the Hamme tungsten district, Vance County, North Carolina and Mecklenburg County, Virginia: U. S. Bur. Mines Rept. Inv. 4380, 6 p., 1948.

McLAREN, WALTER J., *see* Chittum, Harold T.

McLEAN, JAMES DOUGLAS, JR.

A summary of foraminiferal guide fossils for the Atlantic Coastal Plain between New Jersey and Georgia: 3 sheets published by the author, Alexandria, Va., 1949.

McVAY, T. N., *see* Smith, D. I.

MANSFIELD, WENDELL CLAY

Stratigraphy of the Miocene of Virginia and the Miocene and Pliocene of North Carolina, *in* Gardner, Julia, Mollusca from the Miocene and Lower Pliocene of Virginia and North Carolina: U. S. Geol. Survey Prof. Paper 199-A, p. 1-19, 1943.

MARDEN, D. W., *see* Wilpolt, Ralph Henry

MARTENS, JAMES HART CURRY

1. Deep well in Russell County, Virginia: Am. Assoc. Petroleum Geologists Bull., vol. 27, no. 11, p. 1543-1548, 1943.
2. Well sample records: West Virginia Geol. Survey Rept., vol. 17, p. 862-866, 1945.

MARTIN, W. H., *see* Baer, Francis M.

MATHEWS, ASA A. LEE

1. (and Ussery, H. D.) Gallium content of some Virginia rocks (abs.): Virginia Jour. Sci., vol. 2, no. 6, p. 212, 1941.
2. Complex structures of the New River basin (abs.): Geol. Soc. America Bull., vol. 52, no. 12, pt. 2, p. 2036, 1941.

MEADOR, JOHN PLEASANT

1. The geology and petrography of eastern Lunenburg County, Virginia: Thesis (M.A.), Univ. of Virginia, 1949.
2. The petrography of the Flat Rock granite and associated rocks in eastern Lunenburg County, Virginia (abs.): Virginia Acad. Sci. Proc. 1948-49, p. 137, 1949.

MEINZER, OSCAR E., *see* Waring, Gerald A.

MELVILLE, PHILLIP L.

1. An airphoto study of the Triassic area in Albemarle County, Virginia: Natl. Research Council, Highway Research Board Bull., vol. 13, p. 30-47, 1948.
2. Weathering study of some aggregates: Highway Research Board Proc., vol. 28, p. 238-248, 1948; reprinted by The Virginia Council of Highway Inv. and Research, Reprint no. 2, 1949.
3. Typical geological formations as seen from the air (abs.): Virginia Acad. Sci. Proc. 1947-48, p. 116, 1948.
4. Remarks on the geology of concrete aggregates (abs.): Virginia Acad. Sci. Proc. 1948-49, p. 139, 1949.

MERRILL, POMEROY C.

Iron ore possibilities—Oriskany mine and vicinity, Virginia: Lukens Steel Company, 32 p., 1942.

MILLER, ARTHUR K., *see* Ulrich, Edward Oscar, 2

MILLER, BENJAMIN LEROY

Geophysical investigations in the emerged and submerged Atlantic Coastal Plain, part 2, geological significance of geophysical data: Geol. Soc. America Bull., vol. 48, no. 6, p. 803-812, 1937

MILLER, RALPH LeROY

1. Relation of overthrust faults in southwest Virginia (abs.): Geol. Soc. America Bull., vol. 56, no. 12, pt. 2, p. 1182-1183, 1945.
2. Occurrence of oil in Lee County, Virginia (abs.): Virginia Acad. Sci. Proc. 1945-46, p. 88, 1946.
3. (and Fuller, James Osborn) Geology of the Rose Hill oil field, Lee County, Virginia: U. S. Geol. Survey Oil and Gas Inv., Prelim. Map 20, 1945. Revised with title: Geologic and structure maps of the Rose Hill oil field, Lee County, Virginia: Map 76, 1947.
4. Rose Hill—first production in Virginia—first east of Appalachian Plateau: Oil and Gas Jour., vol. 46, no. 27, p. 78-81, Nov. 8, 1947.
5. Structure of the Cumberland overthrust block in southwest Virginia (abs.): Washington Acad. Sci. Jour., vol. 37, no. 10, p. 374, 1947.
6. Rose Hill oil field, Lee County, Virginia, *in* Howell, J. V., ed., Structure of typical American oil fields: Am. Assoc. Petroleum Geologists, vol. 3, p. 452-479, 1948.
7. Recent developments in the exploration for oil and gas in southwest Virginia (abs.): Virginia Acad. Sci. Proc. 1947-48, p. 115-116, 1948.

MILNER, CARLOS EDGAR

1. The geology and ground water in Northumberland County, Virginia: Thesis (M.A.), Univ. of Virginia, 1948.
2. Miocene subsurface stratigraphy in Northumberland County, Virginia (abs.): Virginia Acad. Sci. Proc. 1947-48, p. 11, 1949.

MILTON, CHARLES

(Murata, K. J., and Knechtel, M. M.) Weinschenkite, yittrium phosphate from Virginia: Am. Mineralogist, vol. 29, pts. 3-4, p. 92-107, 1944.

MONROE, WATSON H.

Manganese deposits of Cedar Creek valley, Frederick and Shenandoah counties, Virginia: U. S. Geol. Survey Bull. 936-E, p. 111-141, 1942.

MONTGOMERY, W. BRUCE
Investigation of the Columbia manganese deposit, Campbell County, Virginia: U. S. Bur. Mines Rept. Inv. 4602, 7 p., 1949.

MOOMAW, BENJAMIN FRANKLIN, JR.
The manganese deposits of the Buckhorn survey of Giles and Bland counties, Virginia: Thesis (M.S.), Virginia Polytech. Inst., 1932.

MOON, L. B., *see* Julihn, C. E.

MOORE, H. F.
Conditions and extent of the oyster beds of James River, Virginia: U. S. Bur. Fisheries Doc. 729, 83 p., 1910.

MORGAN, CECIL GIBSON, *see also* Obenshain, Samuel Shockley, 1
Genesis and morphology of three southwest Virginia soils which were developed from material weathered from limestone: Thesis (M.S.), Virginia Polytech. Inst., 1941.

MORGAN, ROBERT EDWARD
Caves in world history (with an index and bibliography): Natl. Speleol. Soc. Bull. no. 5, p. 1-16, 1943; additions to Index of all known caves of the world, no. 6, p. 28-33, 1944.

MORTON, ROBERT BRADING
Geology of the Round Mountain district, Nelson County, Virginia: Thesis (M.S.), Univ. of Illinois, 1943.

MOSHEIM, LEOPOLD P.
Silicified trilobites from Virginia: Geol. Rev. Geol. Soc. City Coll., N.Y., N.Y.C., vol. 2, no. 1, p. 2-3, 1941.

MOSS, RYCROFT G.
Buried Precambrian surface in the United States: Geol. Soc. America Bull., vol. 47, no. 6, p. 935-966, 1936.

MURATA, K. J., *see* Milton, Charles

NELSON, V. E., *see* Gladstone, Irwin

NELSON, WILBUR ARMISTEAD
1. Pleistocene faulting in Albemarle County, Virginia (abs.): Virginia Acad. Sci. Proc. 1947-48, p. 112, 1948.
2. Structure and stratigraphy of the Blue Ridge in Albemarle and Augusta counties, Virginia (abs.): Virginia Acad. Sci. Proc. 1948-49, p. 139, 1949.

NEWBERRY, A. W.
Investigation of the Virgilina copper district, Virginia and North Carolina: U. S. Bur. Mines Rept. Inv. 4384, 14 p., 1948.

NEWCOMBE, C. L.
1. (and Lang, A. G.) The distribution of phosphates in the Chesapeake Bay: Am. Philos. Soc. Proc., vol. 81, no. 3, p. 393-420, 1939.
2. A physical, chemical and biological investigation of the layer of low oxygen content of the deeper waters of the Chesapeake Bay: Am. Philos. Soc. Year Book, 1940, p. 225-227.

NORFOLK AND WESTERN RAILWAY
Mineral resources along the line of the N & W Railway: 56 p., 1946.

OAST, WILLIAM, *see* Chittum, Harold T., Jr.

OBENSHAIN, SAMUEL SHOCKLEY, *see also* Petro, James Hollis
1. Soil classification in Virginia (abs.): Virginia Aacd. Sci. Proc. 1934-35, p. 71, 1935.
2. A key to the soils of Halifax County, Virginia (abs.): Virginia Acad. Sci. Proc. 1935-36, p. 70, 1936.
3. (and Morgan, Cecil Gibson) A profile study of three soils from material weathered from limestone (abs.): Virginia Jour. Sci., vol. 3, no. 6, p. 246-247, 1942.

OIL AND GAS JOURNAL
Virginia wells respond to acid-increase interest: Oil and Gas Jour., vol. 47, no. 8, p. 341, June 24, 1948.

OKULITCH, VLADIMIR JOSEPH, *see* Raymond, Percy E.

O'MEARA, R. G., *see* Smith, D. I.

OVERSTREET, WILLIAM COURTNEY, *see also* Pegau, Arthur August, 1
1. Diabase minerals of the Virginia Triassic by kodachrome (abs.): Virginia Jour. Sci., vol. 2, no. 6, p. 214, 1941.
2. Methods in the determination of graphite: Thesis (M.A.), Univ. of Virginia, 1942.
3. The occurrence of rhodonite in Piedmont, Virginia (abs.): Virginia Jour. Sci., vol. 3, no. 6, p. 250, 1942.

PARDEE, JOSEPH THOMAS
(and Park, C. F.) Gold deposits of the southern Piedmont: U. S. Geol. Survey Prof. Paper 213, 156 p., 1948.

PARK, CHARLES FREDERICK, JR., *see* Pardee, Joseph Thomas

PARROTT, EMORY WADE
1. Geology of the northern portion of the Hightown anticline, Monterey quadrangle, Highland County, Virginia: Thesis (M.A.), Univ. of Virginia, 1948.
2. Igneous rocks in northwestern part of Highland County, Virginia (abs.): Virginia Acad. Sci. Proc. 1947-48, p. 113, 1948.

PARROTT, WILLIAM T.
1. Notes on the abrasive qualities of some Virginia aggregates (abs.): Virginia Acad. Sci. Proc. 1946-47, p. 99-100, 1947.
2. (and Pegau, Arthur August) An occurrence of marble in Carroll County, Virginia (abs.): Virginia Acad. Sci. Proc. 1947-48, p. 112, 1948.
3. (and Lovell, A. P. R.) Geologic construction materials in Alleghany County, Virginia (abs.): Virginia Dept. Highways [1st rept.], 13 p., [1949].
4. An occurrence of natural asphalt in Prince William County, Virginia (abs.): Virginia Acad. Sci. Proc. 1948-49, p. 134-135, 1949.
5. (and Dunkle, David H.) A new occurrence of vertebrate fossils in the Triassic of Virginia (abs.): Virginia Acad. Sci. Proc. 1948-49, p. 135, 1949.
6. State operated quarries (Reports 1-69 inclusive): Virginia Dept. Highways, Div. Tests Geol. Yearbook, vol. 1, unpaged [1947]; Commercial quarries (Reports 70-151 inclusive), vol. 2, unpaged [1947]; Reports 152-216 inclusive, vol. 3, unpaged, [1948]; Reports 217-265 inclusive, vol. 4, unpaged, [1949].

PATTERSON, C. P.
Investigation of the oyster beds in Tangier and Pocomoke sounds and parts of the Chesapeake Bay conducted during portions of years 1878 and 1879, parts 1 and 2: Maryland Comm. Fisheries Rept., p. 106-219, 1878.

PEARSE, BEN H.
Virginia field confirms fenster production: World Oil, vol. 127, no. 2, p. 50-52, 1947.

PEERY, GEORGE GOSE
Recent fossil discoveries in Burkes Garden, Virginia: Virginia Jour. Sci., vol. 2, no. 5, p. 120-121, 1941; (abs.) Virginia Jour. Sci., vol. 2, no. 6, p. 185-186, 1941.

PEGAU, ARTHUR AUGUST, *see also* Parrott, William T., 2
1. (and Overstreet, William C.) Occurrence of martite in micaceous hematite near Esmont, Virginia: Am. Mineralogist, vol. 26, no. 8, p. 512, 1941.
2. A review of the literature on granodiorite in Virginia (abs.): Virginia Jour. Sci., vol. 3, no. 6, p. 250, 1942.
3. Recent notes on Virginia pegmatites (abs.): Virginia Acad. Sci. Proc. 1943-44, p. 60-61, 1944.
4. Martite from Virginia, is it a pseudomorph of magnetite or a dimorph of hematite? (abs.): Virginia Acad. Sci. Proc. 1945-46, p. 88-89, 1946.

5. Notes on the geology field trip of the Charlottesville meeting, 1947 (abs.): Virginia Acad. Sci. Proc. 1946-47, p. 102, 1947.
6. The geology of Chesterfield County, Virginia (abs.): Virginia Acad. Sci. Proc. 1948-49, p. 136-137, 1949.

PETRO, JAMES HOLLIS
(and Obenshain, Samuel Shockley) Geology-soils relationship in Fauquier County, Virginia (abs.): Virginia Acad. Sci. Proc. 1943-44, p. 65-66, 1944.

PICKLE, R. W.
Discovery of folsom-like arrowpoint and artifacts of mastodon bone in southwest Virginia: Tenn. Archaeologist, vol. 3, no. 1, p. 3-6, 1946.

PIT AND QUARRY
Virginia Highway Department to conduct soil survey: Pit and Quarry, vol. 41, no. 9, p. 92, 1949.

POLLOCK, MARJORIE, B. J., *see* Fieldner, Arno Carl, 4

POND, ADELA MORSE
The geology of the Clendening Creek area, Giles County, Virginia: Thesis (M.A.), Smith College, 1926.

POOLE, SIDMAN PARMELEE
Relation of topography to the Valley campaign of "Stonewall" Jackson (abs.): Virginia Acad. Sci. Proc. 1946-47, p. 101, 1947.

PORTER, HOBART CLARKE, *see* Coleman, Clarence S., 1

POSTLEY, OLIVE CLARA
Oil and gas possibilities in Atlantic Coastal Plain from New Jersey to Florida: Am. Assoc. Petroleum Geologists Bull., vol. 22, no. 7, p. 799-815, 1938; (abs.) Oil and Gas Jour., vol. 36, no. 44, p. 65, 1938; (abs.) World Petroleum, vol. 9, no. 10, p. 70, 1938.

PRATT, JOSEPH HYDE
Gold mining in the southern Appalachians: Eng. Mining Jour., vol. 74, p. 241-242, 1902.

PRICE, PAUL HOLLAND
1. (and Headlee, A. J. W.) Geochemistry of natural gas in Appalachian province: Am. Assoc. Petroleum Geologists Bull., vol. 26, no. 1, p. 19-35, 1942.
2. Discovery of gas in Rockingham County, Virginia: Am. Assoc. Petroleum Geologists Bull., vol. 26, no. 2, p. 275, 1942.

PROUTY, CHILTON EATON, *see also* Cooper, Byron Nelson, 4; Cullison, James Shelly.
1. Middle Ordovician limestones of the median and northwest belts of Virginia and Tennessee (abs.): Geol. Soc. America Bull., vol. 52, no. 12, pt. 2, p. 1973-1974, 1941.
2. Lower Middle Ordovician of southwest Virginia and northeast Tennessee: Am. Assoc. Petroleum Geologists Bull., vol. 30, no. 7, p. 1140-1191, 1946.
3. Relationship of Cambro-Ordovician dolomites to facies barriers in Tennessee and Virginia (abs.): Geol. Soc. America Bull., vol. 58, no. 12, pt. 2, p. 1218, 1947
4. Trenton and sub-Trenton stratigraphy of northwest belts of Virginia and Tennessee: Am. Assoc. Petroleum Geologists Bull., vol. 32, no. 8, p. 1596-1626, 1948.

PROUTY, WILLIAM FREDERICK
Two peneplains under the Coastal Plain: Elisha Mitchell Sci. Soc. Jour., vol. 62, no. 2, p. 139-140, 1946.

RAMAN, N. D., *see* Wright, R. J.

RANKIN, HIRAM S.
(Laurence, Robert Abraham, and Davis, Frederick Augustus William) Manga-

nese resources of the Tennessee Valley region: Tennessee Valley Authority Geol. Bull. 7, p. 7, 1938.

RAYMOND, PERCY E.

(and Okulitch, Vladimir Joseph) Some Chazyan sponges: Harvard College Mus. Comp. Zool., vol. 86, no. 5, p. 197-214, 1940.

REHN, EDGAR ERNEST

Onondaga group of parts of West Virginia and Virginia: Thesis (M.S.), Ohio State Univ., 1942; (abs.) Am. Assoc. Petroleum Geologists Bull., vol. 26, no. 5, p. 902-903, 1942.

RESSER, CHARLES ELMER

1. Cambrian System (restricted) of the southern Appalachians: Geol. Soc. America Spec. Paper 15, 140 p., 1938; (abs.) Proc. 1936, p. 96, 1937.
2. (Howell, Benjamin Franklin) Lower Cambrian *Olenellus* zone of the Appalachians: Geol. Soc. America Bull., vol. 49, no. 2, p. 195-248, 1938.
3. Faunal content of the Marysville Formation: Smithsonian Misc. Colln., vol. 101, no. 10, 8 p., 1942. [Pub. 3676]; (abs.) Geol. Soc. America Bull., vol. 52, no. 12, pt. 2, p. 1974, 1941.

REYNOLDS, D. A.

1. (and Davis, J. D.) Coal carbonization: carbonizing properties of medium volatile coals of different types: U. S. Bur. Mines Rept. Inv. 3749, 8 p., 1944.
2. (and Wolfson, D. E.) Coal carbonization: ammonium sulfate yields from coals of various regions of the United States: U. S. Bur. Mines Rept. Inv. 4526, 15 p., 1949.
3. Coal carbonization: effects of blending Pocahontas no. 3 with high-volatile coals: U. S. Bur. Mines Rept. Inv. 4552, 8 p., 1949.

RICHARDS, HORACE GARDINER

1. The subsurface stratigraphy of the Atlantic Coastal Plain between New Jersey and Georgia: Am. Assoc. Petroleum Geologists Bull., vol. 29, no. 7, p. 885-995, 1945; (abs.) Virginia Acad. Sci. Proc. 1946-47, p. 97-98, 1947.
2. Correlation of Atlantic Coastal Plain Cenozoic formations; a discussion: Geol. Soc. America Bull., vol. 56, no. 4, p. 401-407, 1945.
3. Invertebrate fossils from deep wells along the Atlantic Coastal Plain: Jour. Paleontology, vol. 21, no. 1, p. 23-37, 1947.
4. The Atlantic Coastal Plain, the geology and oil possibilities: World Oil, vol. 127, no. 3, p. 50-58, 1947
5. Studies on the subsurface geology and paleontology of the Atlantic Coastal Plain: Acad. Nat. Sci. Philadelphia Proc., vol. 100, p. 39-76, 1948.
6. The occurrence of Triassic rocks in the subsurface of the Atlantic Coastal Plain: Pennsylvania Acad. Sci. Proc., vol. 23, p. 45-48, 1949.
7. [Petroleum] developments in Atlantic coastal states between New Jersey and North Carolina in 1948: Am. Assoc. Petroleum Geologists Bull., vol. 33, no. 6, p. 1011, 1949.

RICHMOND, WALLACE E., *see* Fleischer, Michael

RICKARD, HILTON LLOYD

A petrographic study of some typical igneous and metamorphic rocks of the Virginia Piedmont and Blue Ridge: Thesis (M.S.), Univ. of Virginia, 1937.

RIES, HEINRICH

(and others) Report of committee on geological surveys: Am. Ceramic Soc. Bull., vol. 24, no. 7, p. 234-245, 1945; (Chairman) vol. 28, no. 12, p. 1498-1510, 1949

RIORDAN, OWEN

The upper Potomac coal field: The Virginias, vol. 3, p. 94, 1882.

RITTENHOUSE, GORDON, *see* Brown, Carl Barrier, 2

ROBERTS, JOSEPH KENT
1. Field trip in the Richmond area (abs.): Virginia Jour. Sci., vol. 2, no. 6, p. 215, 1941.
2. Annotated geological bibliography of Virginia: Charlottesville, Va., Alderman Library, 726 p., 1942.
3. History of the development of geology of the James River basin, Virginia (abs.): Virginia Jour. Sci., vol. 3, no. 6, p. 245-246, 1942.
4. Rise and development of geological thought in Virginia, *in* Roberts, J. K., Annotated bibliography of Virginia; Charlottesville, Va., Alderman Library, p. 1-27, 1942; (abs.) Virginia Acad. Sci. Proc. 1942-43, p. 51-52, 1942.
5. Outline of the geology and mineral resources of Smyth County, Virginia: Virginia Division of Mineral Resources, Open-file report, 109 p., 1946?; (abs.) Virginia Jour. Sci., vol. 2, no. 6, p. 212, 1941.

ROBERTSON, A. F., *see* Kline, Mitchell H., 3

ROBERTSON, JAMES T.
Notes on Gibson's Hole cave, Augusta County, Virginia (abs.): Virginia Acad. Sci. Proc. 1946-47, p. 100-101, 1947.

ROBESON, JOHN MARSHALL, JR.
A study of fossil pollen as found in peat from the Dismal Swamp area of Virginia and North Carolina: Thesis (M.S.), Univ. of Virginia, 1928.

ROBINSON, C. H.
Turquoise crystal locality [Virginia]: Mineralogist, vol. 10, no. 2, p. 43-44, 1942.

RODGERS, JOHN
1. Evolution of thought on structure of middle and southern Appalachians: Am. Assoc. Petroleum Geologists Bull., vol. 33, no. 10, p. 1643-1654, 1949; (abs.) Oil and Gas Jour., vol. 47, no. 24, p. 90, 1948.
2. How deep is the folding in the Appalachian Valley? (abs.): Virginia Acad. Sci. Proc. 1948-49, p. 140, 1949.

ROOT, ROBERT W., *see* Sartor, Charles Lane

ROSS, CLARENCE SAMUEL
1. The origin of the rutile deposits of the Amherst-Nelson county district (abs.): Virginia Acad. Sci. Proc. 1933-34, p. 54-55, 1934.
2. Occurrence and origin of the titanium deposits of Nelson and Amherst counties, Virginia: U. S. Geol. Survey Prof. Paper 198, 59 p., 1941.
3. The titanium district of Roseland, Virginia, *in* Newhouse, W. H., ed., Ore deposits as related to structural features: Princeton Univ. Press, p. 137, 1942.
4. Geologic occurrence of rutile (abs.): Econ. Geology, vol. 39, no. 1, p. 103, 1944.
5. Virginia titanium deposits; discussion: Econ. Geology, vol. 42, no. 2, p. 194-198, 1947.

ROVE, OLAF V.
Some physical characteristics of certain favorable and unfavorable ore horizons: Econ. Geol., vol. 42, no. 1, p. 57-77, 1947.

ROWLAND, RICHARD A.
A petrotectonic analysis of cleavage in otherwise unmetamorphosed sediments: Jour. Geology, vol. 47, p. 449-471, 1939.

RUTHERFORD, H. M., *see* Ewing, William Maurice, 1

SANDEFUR, BENNETT TOY
The amygdaloidal basalts of Damascus, Virginia: Thesis (M.S.), Univ. of Kentucky, 1930.

SANFORD, ROBERT S., *see* Ewoldt, Harold B.

SARTOR, CHARLES LANE
(and Root, Robert W.) Mineralogy of sands from tributaries of Shenandoah

River, Virginia: Virginia Jour. Sci., vol. 2, nos. 7-8, p. 261-262, 1941; (abs.) Virginia Jour. Sci., vol. 2, no. 6, p. 211, 1941.

SAUNDERS, W. M.
Report of chairman of Joint Committee on Molding Sand Research: Am. Foundrymen's Assoc. Trans., vol. 32, pt. 2, p. 222-358, 1925.

SAWYER, J. P.
(and Whittemore, John Weed) Characteristics of a Virginia kyanite: Am. Ceramic Soc. Bull., vol. 19, no. 12, p. 459-461, 1940.

SCHMIDT, RUTH ANN MARIE
Ostracoda from the Upper Cretaceous and lower Eocene of Maryland, Delaware, and Virginia: Jour. Paleontology, vol. 22, no. 4, p. 389-431, 1948; thesis (Ph.D.) Columbia Univ., 1948.

SCHOONOVER, LOIS MARGARET
1. A stratigraphic study of the mollusks of the Calvert and Choptank formations of southern Maryland: Bull. Am. Paleontology, vol. 25, no. 94-B, 132 p., 1941; thesis (Ph.D.), Bryn Mawr, 1940; (abs.) Geol. Soc. America Bull., vol. 51, no. 12, pt. 2, p. 2006, 1940.
2. A Miocene echinoid colony from Maryland: Jour. Paleontology, vol. 15, no. 1, p. 92-93, 1941.

SCHUBERT, ELMER AUGUSTUS
The mineral resources of Virginia: Am. Mining Cong., 11th Ann. Sess., Proc., 1908, p. 124-145, 1909.

SEARS, CHARLES EDWARD, JR., *see also* McCormick, John T.
Possible late Paleozoic intrusives in Montgomery and Floyd counties, Virginia (abs.): Virginia Acad. Sci. Proc. 1948-49, p. 138-139, 1949.

SEAVY, LOUIS M., *see* Brown, Carl Barrier, 2

SECRIST, MARK H.
(and Evitt, William Robert, II) The paleontology and stratigraphy of the upper Martinsburg Formation of Massanutten Mountain, Virginia: Washington Acad. Sci. Jour., vol. 33, no. 12, p. 358-368, 1943.

SELVIG, WALTER ALFRED
Analyses of ash from coals of the United States: U. S. Bur. Mines Tech. Paper 679, 20 p., 1945.

SHAFFER, PAUL RAYMOND
Correlation of the erosion surfaces of the southern Appalachians: Jour. Geology, vol. 55, no. 4, p. 343-352, 1947.

SHAININ, VINCENT EVERETT
New application of en echelon tension fractures to geological stress-strain analysis (abs.): Geol. Soc. America Bull., vol. 54, no. 12, p. 1826-27, 1943.

SHAUB, BENJAMIN M.
Replacement in filled fissure veins: Am. Mineralogist, vol. 29, no. 12, p. 875-880, 1935.

SHIFFLETT, FRANCES ELAINE
1. Foraminifera of the Aquia Formation at the type locality, Virginia and southern Maryland: Thesis (Ph.D.), Johns Hopkins Univ., 1948.
2. Eocene stratigraphy and foraminifera of the Aquia Formation: Maryland Dept. Geology, Mines, and Water Resources Bull. 3, 93 p., 1948.

SHULER, ELLIS W.
Intermittent siphon in nature; a curious spring in Virginia: Sci. American, vol. 119, p. 131, 1918.

SINNOTT, ALLEN
(and Whetstone, George W.) Preliminary data on fluoride ground water in the Coastal Plain of Virginia (abs.): Virginia Acad. Sci. Proc. 1948-49, p. 141, 1949.

SMITH, D. I.
(O'Meara, R. G., and McVay, T. N.) Concentration of feldspathic waste from a titanium mine near Roseland, Virginia: Am. Ceramic Soc. Jour., vol. 23, no. 11, p. 339-341, 1940.

SMITH, K. G., *see* Casey, John H.

SNIFFEN, W. S.
An occurrence of amethyst in Prince Edward County, Virginia (abs.): Virginia Jour. Sci., vol. 2, no. 6, p. 215, 1941.

SNOBBLE, JAMES B., *see* Wilbur, Robert O.

SOLKOLOFF, VLADIMIR PETROVICH
Engineering map units in Fairfax quadrangle, Virginia (abs.): Washington Acad. Sci. Jour., vol. 39, no. 3, p. 109-110, 1949.

SPEIL, SIDNEY, *see* Klinefelter, Theron A.

SPRUNK, GEORGE CARL
(and others) Splint coals of the Appalachian region; their occurrence, petrography, and comparison of chemical and physical properties with associated bright coals: U. S. Bur. Mines Tech. Paper 615, 59 p., 1940.

STANTON, CRAMON
Oil and gas developments in western and southwestern Virginia: Appalachian Geol. Soc. Bull., vol. 1, p. 429-431, 1949.

STEAD, FRANK WALTER, *see also* Ladd, Harry Stephen, 1
(and Stose, George Willis) Manganese and quartzite in the Lick Mountain district, Wythe County, Virginia: Virginia Geol. Survey Bull., 59 16 p. 1943.

STEIDTMANN, EDWARD
1. A limestone cobble on the Blue Ridge east of Irish Creek, Virginia (abs.): Virginia Jour. Sci., vol. 3, no. 6, p. 250, 1942.
2. Commercial granites and other crystalline rocks of Virginia: Virginia Geol. Survey Bull. 64, 152 p., 1945.
3. A peridotite intrusion near Lexington, Virginia (abs.): Virginia Acad. Sci. Proc. 1947-48, p. 113, 1948.

STEPHENSON, LLOYD W.
(and others) Correlation of the outcropping Cretaceous formations of the Atlantic and Gulf Coastal Plain and Trans-Pecos Texas: Geol. Soc. America Bull., vol. 53, no. 3, p. 435-448, 1942.

STETSON, HENRY CROSBY
The sediments and stratigraphy of the east coast continental margin: Georges Bank to Norfolk Canyon: Mass. Inst. Paper, vol. 11, no. 2, 60 p., 1949.

STOSE, ANNA ISABEL JONAS, *see also* Stose, George Willis, 2, 6
1. Intrusive rocks in the Blue Ridge plateau, Virginia (abs.): Am. Geophys. Union Trans., 23d. Mtg., pt. 2, p. 342, 1942.
2. Manganese-bearing veins in southwestern Virginia: Econ. Geology, vol. 37, no. 5, p. 408-423, 1942; Virginia Geol. Survey Reprint Ser. No. 5, 1942.
3. (and Stose, George Willis) Geology of Carroll and Frederick counties [Maryland], *in* The physical features of Carroll and Frederick counties: Maryland Dept. Geology, Mines, and Water Resources, p. 11-131, 1946.

STOSE, GEORGE WILLIS, *see also* Stead, Frank Walter; Stose, Anna Isabel Jonas, 3
1. Source beds of manganese ore in the Appalachian Valley: Econ. Geology, vol. 37, no. 3, p. 163-172, 1942.
2. (and Stose, Anna Isabel Jonas) The Chilhowee group, and Ocoee series of the southern Appalachians: Part 1, Am. Jour. Sci., vol. 242, no. 7, p. 367-390, 1944: pt. 2, Am. Jour. Sci., vol. 242, no. 8, p. 401-416, 1944.
3. Structure of Lick Mountain, Virginia: Am. Jour. Sci., vol. 244, no. 3, p. 185-199, 1946.

4. The Taconic sequence in Pennsylvania: Am. Jour. Sci., vol. 244, no. 10, p. 665-696, 1946.
5. (and Stose, Anna Isabel Jonas) Stratigraphy of the Arvonia slate, Virginia: Am. Jour. Sci., vol. 246, no. 7, p. 393-412, 1948.
6. (and Stose, Anna Isabel Jonas) Ocoee series of the southern Appalachians: Geol. Soc. America Bull., vol. 60, no. 2, p. 267-320, 1949; (abs.) Geol. Soc. America Bull., vol. 57, no. 12, pt. 2, p. 1233, 1946.

STOW, MARCELLUS HENRY
Reflection of provenance in heavy minerals of James River, Virginia: Jour. Sed. Petrology, vol. 9, no. 2, p. 86-91, 1939; (abs.) Geol. Soc. America Bull., vol. 49, no. 12, pt. 2, p. 1962, 1939.

STRAHLER, ARTHUR NEWELL
Elongate intrenched menders of Conodoguinet Creek, Pennsylvania: Am. Jour. Sci., vol. 244, no. 1, p. 31-40, 1946.

STRALEY, HARRY W., III
1. Is Appalachian deformation shallow? (abs.): Virginia Acad. Sci. Proc. 1947-48, p. 113, 1948.
2. How deep-seated are Appalachian anticlines?: West Virginia Acad. Sci. Proc., vol. 20, p. 103-105, 1949.

SUNDERMAN, HARVEY COFER
Relationship of the minor structures in the Lynchburg area, Virginia: Thesis (M.S.), Univ. of Kentucky, 1947.

SWANSON, HERBERT E.
Install plant quarry; M. J. Grove Lime Co., Stephens City, Virginia, increases capacity with new hauling, crushing, and screening equipment: Rock Products, vol. 48, no. 9, p. 64-65, 1945.

SWICK, CLARENCE HERBERT
Gravitational determination of deep-seated crustal structure of continental borders (observations and methods): Am. Geophys. Union Trans., 21st Ann. Mtg., pt. 3-A, p. 801-808, 1940.

TARLETON, WILLIAM ADDISON
The geology of the southern portion of the Hightown Valley anticline, Monterey quadrangle, Highland County, Virginia: Thesis (M.A.), Univ. of Virginia, 1948.

THOENEN, JOHN ROY
(and Burchard, Ernest F.) Bauxite resources in the United States: U. S. Bur. Mines Rept. Inv. 3598, 41 p., 1941.

THOM, W. T.
Post-Triassic evolution of a part of the Atlantic coastal region (abs.): Oil and Gas Jour., vol. 44, no. 48, p. 88, 1946; Am. Assoc. Petroleum Geologists Bull., vol. 30, no. 5, p. 742-743, 1946.

THOMPSON, HENRY DEWEY
Topographic analysis of the Monterey, Staunton, and Harrisonburg quadrangles: Jour. Geology, vol. 49, no. 5, p. 521-549, 1941.

THORNTON, CHARLES P.
(and Burns, James R.) Sulphide mines near Mineral, Virginia (abs.): Virginia Acad. Sci. Proc. 1948-49, p. 137, 1949.

TIFFANY, J. E.
Virginia anthracite field; a region showing coal formations, the value of which have not yet been thoroughly proved by prospecting: Mines and Minerals, vol. 26, p. 349-350, 1906.

TOMLINSON, W. HAROLD
Notes on the derivatives of the Triassic diabase of Pennsylvania: Econ. Geology, vol. 40, p. 526-536, 1945.

TRAINER, FRANK WILSON
1. Eocene foraminifera from Virginia: Thesis (M.A.), Univ. of Virginia, 1948.
2. Notes on the flora and fauna of the Falling Springs travertine, Alleghany County, Virginia (abs.): Virginia Acad. Sci. Proc. 1947-48, p. 117-118, 1948.

TRAINER, JOHN N.
Eight recent garnet finds: Rocks and Minerals, vol. 22, no. 5, p. 811-818, 1947.

TRAUFFER, WALTER E.
1. Piney River plant processes Virginia aplite; mineral used in glass making: Pit and Quarry, vol. 34, no. 3, p. 44-45, 1941.
2. Virginia operator's 3-dredge set-up produces gravel for vital war jobs: Pit and Quarry, vol. 36, no. 5, p. 57-59, 1943.
3. Operator's whirlwind 1,000 mile trip speeds equipment delivery: Pit and Quarry, vol. 40, no. 3, p. 118-119, 1947.
4. National Gypsum's new lime plant at Kimballton is soundly designed and fully instrumented: Pit and Quarry, vol. 40, no. 6, p. 66-70, 1947.

TUCKER, REITZ COURTNEY
1. Deep well records: West Virginia Geol. Survey [Repts.], vol. 7, p. 276, 1936.
2. Summarized records of deep wells: West Virginia Geol. Survey [Repts.], vol. 16, p. 855-856, 1943.

ULKE, TITUS
1. Notes on a new gold mine and flotation mill near Washington, D. C.: Rocks and Minerals, vol. 12, no. 12, p. 371, 1937.
2. On the occurrence of native sulphur at Langley, Virginia: Rocks and Minerals, vol. 23, no. 7, p. 601, 1948.

ULRICH, EDWARD OSCAR
1. (and others) Ozarkian and Canadian cephalopods; part 1, nautilicones: Geol. Soc. America Spec. Paper 37, 157 p., 1942.
2. (Foerste, August F., and Miller, Arthur K.) Ozarkian and Canadian cephalopods; part 2, brevicones: Geol. Soc. America Spec. Paper 49, 240 p., 1943.
3. (and others) Ozarkian and Canadian cephalopods; part 3, longicones and summary: Geol. Soc. America Spec. Paper 58, 157 p., 1944.

U. S. BUREAU OF MINES
1. Analysis of Virginia coals: U. S. Bur. Mines Tech. Paper 656, 159 p., 1944.
2. Minerals yearbook: U. S. Bur. Mines, 1941-49, 9 vols.

U. S. DEPARTMENT OF AGRICULTURE
1902-1949, soil reports accompanied by soil maps.
Bureau of Soils
1902 Bedford area (3rd report)
1902 Prince Edward area (3rd report)
1903 Albemarle area (4th report)
1904 Leesburg area (5th report)
1904 Norfolk area (5th report)
1905 Appomattox County (6th report)
1906 Hanover County (7th report)
1906 Louisa County (7th report)
1906 Yorktown area (7th report)
1907 Chesterfield County (8th report)
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1911 Campbell County (11th report)
1914 Henrico County (15th report)
1916 Frederick County (16th report)
1917 Fairfax and Alexandria cos. (17th report)
1920 Accomack and Northampton cos. (19th report)
1922 Pittsylvania County (20th report)

Bureau of Chemistry and Soils
1930 Orange County
1934 Rockbridge County
1934 Grayson County
1936 Nansemond County
1937 Augusta County
1937 Southampton County
1938 Halifax County
1939 Grayson County
Bureau of Plant Industry . . .
1940 Albemarle County
1941 Isle of Wight County
1945 Princess Anne County
1945 Russell County
1945 Washington County
1948 Smyth County
1948 Tazewell County

U. S. DEPARTMENT OF THE INTERIOR
Artesian water resources of Southampton, Sussex, and Isle of Wight counties, Virginia: U. S. Dept. Interior Press Memo 23837, 2 p., 1938.

U. S. GEOLOGICAL SURVEY
1. Quality of surface waters of the United States: U. S. Geol. Survey Water Supply Papers (Dates represent years concerned, not years published) 1030 (1945), 1050 (1946), 1102 (1947), 1132 (1948), 1162 (1949).
2. Surface water supply of the United States: U. S. Geol. Survey Water Supply Papers (Dates represent the years concerned, not the years published) 921, 922 (1942); 971, 972 (1943); 1001, 1002 (1944); 1031, 1032 (1945); 1051, 1052 (1946); 1081, 1082 (1947); 1111, 1112 (1948); 1141, 1142 (1949).
3. Water levels and artesian pressures in observation wells in the United States: U. S. Geol. Survey Water Supply Papers (Dates represent years concerned, not years published) 937 (1941), 945 (1942), 987 (1943), 1017 (1944), 1024 (1945), 1072 (1946), 1097 (1947), 1127 (1948), 1157 (1949).

USSERY, H. D., *see* Mathews, Asa A. Lee, 1

VAN ENGEL, W. A.
Reference bearing on the hydrography of Chesapeake Bay and its tributaries: Virginia Fisheries Lab. Spec. Rept. 2, 12 p., 1948.

VHAY, JOHN STEWART, *see* Koschman, Albert Herbert

VIRGINIA DIVISION OF WATER RESOURCES AND POWER
Surface water supply of Virginia . . . 1927-1942: Virginia Div. Water Resources and Power Bulls. 4-7, 1944.

WAESCHE, HUGH HENRY
The areal geology of the Blacksburg area: Thesis (M.S.), Virginia Polytech. Inst., 1934.

WANLESS, HAROLD ROLLIN
Pennsylvanian geology of a part of the southern Appalachian coal field: Geol. Soc. America Mem. 13, 162 p., 1946.

WARING, GERALD A.
(and Meinzer, Oscar E.) Bibliography and index of publications relating to ground water . . . : U. S. Geol. Survey Water Supply Paper 992, 1947.

WARMKESSEL, CARL ANDREW
Geology of Brown Ridge near Craigsville, Virginia: Thesis (M.S.), Lehigh Univ., 1942.

WEITZ, JOHN HILLS
High grade dolomite deposits in the United States: U. S. Bur. Mines Inf. Cir. 7226, 1942.

WELD, C. M.
The Oriskany iron ores of Virginia: Econ. Geology, vol. 10, p. 399-421, 1915.

WELLS, ROGER C.
Analyses of rocks and minerals from the laboratory of the United States Geological Survey, 1914-1936: U. S. Geol. Survey Bull. 878, 134 p., 1937.

WERNER, HARRY JAY
A preliminary investigation of the Lovingston gneiss and its related phases in the Lovingston quadrangle of central Virginia: Thesis (A.M.), Washington Univ. (St. Louis), 1949.

WHETSTONE, GEORGE W., *see* Lamar, William L.; Sinnott, Allen

WHITE, CHARLES DAVID
Lower Pennsylvanian species of *Mariopteris, Eremopteris, Diplothmema,* and *Aneimites* from the Appalachian region, a posthumous work, assembled and edited by Charles B. Read: U. S. Geol. Survey Prof. Paper 197-C, p. 85-140, 1943.

WHITE, WILLIAM ALEXANDER
Systematic drainage changes in the Piedmont [North Carolina and Virginia] (abs.): Geol. Soc. America Bull., vol. 59, no. 12, p. 1361-1362, 1948.

WHITTEMORE, JOHN WEED, *see* Sawyer, J. P.

WHITTINGTON, HARRY BLACKMORE
1. Silicified Trenton trilobites: Jour. Paleontology, vol. 15, no. 5, p. 492-522, 1941.
2. Silicified Ordovician trilobites (abs.): Geol. Soc. America Bull., vol. 58, no. 12, pt. 2, p. 1239, 1947.
3. *Dolichoharpes* and the origin of the harpid fringe: Am. Jour. Sci., vol. 247, no. 4, p. 276-285, 1949.

WICKES, C. T.
Geological section on Fork Run, Low Moor Iron Company's lands, Alleghany County, Virginia: The Virginias, vol. 1, p. 9, 1880.

WILBUR, ROBERT O.
(and Snobble, James B.) Sedimentary petrology of some Atlantic and Gulf Coast beach sands: Virginia Jour. Sci., vol. 3, no. 2-3, p. 48-49, 1942; (abs.) Virginia Jour. Sci., vol. 2, no. 6, p. 211, 1941.

WILPOLT, RALPH HENRY
(and Marden, D.W.) Upper Mississippian rocks of southwestern Virginia, southern West Virginia, and eastern Virginia: U. S. Geol. Survey Oil and Gas Inv., Prelim. Chart No. 38, 3 sheets with text, 1949.

WILSON, HEWITT
Iron oxide mineral pigments of the United States: U. S. Bur. Mines Bull. 370, 198 p., 1933.

WILSON, J. E., *see* Holmes, C. R.

WILSON, JAMES LEE
Stratigraphy and faunal relationships of the Upper Cambrian in the central Appalachians (abs.): Geol. Soc. America Bull., vol. 60, no. 12, pt. 2, p. 1929, 1949.

WINDES, STEPHEN LOCKHART
Physical properties of mine rocks: U. S. Bur. Mines Rept. Inv. 4459, 79 p., 1949.

WINSLOW, F.
Report on the oyster beds of the James River, and of Tangier and Pocomoke sounds, Maryland and Virginia: U. S. Coast and Geod. Survey Rept. for 1881, 87 p., 1882.

WOLFSON, D. E., *see* Reynolds, D. A., 2

WOODRING, PHILLIPS WENDELL, *see* Cooke, Charles Wythe, 4

WOODS, HENRY H., *see* Horn, Egmont

WOODWARD, HERBERT PRESTON

1. A reconnaissance of the geology of Craig County, Virginia: Virginia Division of Mineral Resources open-file report, 34 p., 1935.
2. Oriskany brown ores of west-central Virginia: Virginia Division of Mineral Resources open-file report, 37 p., 1935.
3. Geology and mineral resources of the Natural Bridge region, Virginia: Virginia Division of Mineral Resources open-file report, 1936.
4. Outline of the geology and mineral resources of Scott County, Virginia: Virginia Divison of Mineral Resources open-file report, 1937.
5. Silurian System of West Virginia: West Virginia Geol. Survey [Rept.], vol. 14, 326 p., 1941.
6. Devonian System of West Virginia: West Virginia Geol. Survey [Rept.], vol. 15, 665 p., 1943.
7. Cambrian System of West Virginia: West Virginia Geol. Survey [Rept.], vol. 20, 317 p., 1949.

WOOLLARD, GEORGE PRIOR

1. A comparison of magnetic, seismic, and gravitational profiles across the Atlantic Coastal Plain: Am. Geophys. Union Trans., 21st Ann. Mtg., pt. 1, p. 301-309, 1940; (abs.) Geol. Soc. America Bull., vol. 51, no. 12, pt. 2, p. 2013, 1940.
2. Geophysical investigations in Virginia (abs.): Virginia Jour. Sci., vol. 2, no. 6, p. 214, 1941.
3. Recent regional gravity surveys: Am. Geophys. Union Trans., vol. 29, no. 5, p. 727-738, 1948.
4. Gravity anomalies and the nature of the earth's crust, *in* Symposium on the earth's crust: Am. Geophys. Union Trans., vol. 30, no. 2, p. 189-201, 1949.
5. Regional gravity study of the Appalachian Mountain system (abs.): Geol. Soc. America Bull., vol. 60, no. 12, pt. 2, p. 1932, 1949.

WRIGHT, FRANK JAMES

Erosional history of the southern Appalachians: Jour. Geomorphology, vol. 5, no. 2, p. 151-161, 1942.

WRIGHT, R. J.

(and Raman, N. D.) The Gossan Lead, Carroll County, Virginia: U. S. Geol. Survey open-file report, unpaged, 1948.

YOUNG, WILLIAM HARVEY

(and Anderson, Robert L.) Thickness of bituminous coal and lignite seams mined in the United States in 1945: U. S. Bur. Mines. Inf. Cir. No. 7442, 17 p., 1947.

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Caves
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