ANNOTATED BIBLIOGRAPHY
OF GEORGIA GEOLOGY
1965 through 1970

by

Howard Ross Cramer

STATE OF GEORGIA
DEPARTMENT OF NATURAL RESOURCES
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ATLANTA
1976
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This bibliography is a continuation of, and a supplement to, the Annotated Bibliography of Georgia Geology through 1959 and the Annotated Bibliography of Georgia Geology, supplement from 1960 through 1964. These were published as Bulletins 79 and 84 of the Georgia Geological Survey. This bibliography contains annotations of not only those articles published during 1965 through 1970 inclusively, but also those published at earlier dates which were not included in Bulletins 79 and 84.

The annotations and index pattern of this supplement are similar to those established for Bulletins 79 and 84 which in turn have been modelled after those established by the U.S. Geological Survey and used in the preparation of the Bibliography of North American Geology.

Each article was read, annotated, and indexed by county, subject, and geological age where applicable. In those cases where the geographic area of the subject was greater than a county, subdivisions of the state, based upon physiographic provinces, were employed. These subdivisions are outlined in Figure 1.

Theses from colleges and universities in the United States and elsewhere are included if they contain information about Georgia. They are indexed, but not annotated. Abstracts of papers are not included if the paper has appeared in full except for theses; abstracts are not annotated, however. Biographies of authors of Georgia articles are included but not annotated.

There is no way in which proper credit can be given to a host of persons who assisted in the preparation of this bibliography, but special mention must be made of the members of the Reference Department of the Woodruff Library of Emory University in Atlanta, Georgia. Geologists should be forever grateful for these and others who have assisted in the gathering and dissemination of information. May their tribe increase.

Users are encouraged to notify the Director of the Georgia Geologic and Water Resources Division of any omissions in this bibliography so that they may be included in later supplements.
Figure 1. Subdivisions of Georgia used in this Bibliography
Following are the completed citations for the abbreviations used in the bibliography.

ACTA GEOL. TAIWANICA. Acta Geologica Taiwanica. Published by the National Taiwan University from Taipei, Formosa.

AGUA SUBTERRANEA. Agua Subterranea. Published by the Associacao dos Geologicos de Pernambuco from Recife, Brazil.

ALABAMA ACAD. SCI. JOUR. Journal of the Alabama Academy of Science. Published by the Academy from Birmingham, Alabama.

AM. ALPINE JOUR. American Alpine Journal. Published by the American Alpine Club from New York City, New York.

AM. ASSOC. PETROLEUM GEOLOGISTS BULL.,....MEM. Bulletin and Memoirs of the American Association of Petroleum Geologists. Published by the Association from Tulsa, Oklahoma.

AM. GEOPHYSICAL UNION MON.;...TRANS. Monographs and Transactions of the American Geophysical Union. Published by the National Research Council for the Union from Washington, D.C.

AM. INST. MINING ENGINEERS BULL.,...TRANS. Bulletin and Transactions of the American Institute of Mining, Metallurgical, and Petroleum Engineers. Published by the Institute from New York City, New York.

AM. JOUR. SCI. American Journal of Science. Published by Yale University, New Haven, Connecticut.

AM. MINERALOGIST. American Mineralogist. Published by the Mineralogical Society of America from Lancaster, Pennsylvania.

AM. NATURALIST. American Naturalist. Published by the American Society of Naturalists from diverse places.


ASSOC. AM. GEOGRAPHERS ANNALS. Annals of the Association of American Geographers. Published by the Association from diverse places.

ASSOC. ENGINEERING GEOLOGISTS BULL. Association of Engineering Geologists Bulletin. Published by the Association from Florissant, Missouri.

BOT. REV. Botanical Review. Published commercially from Lancaster, Pennsylvania.

BULL. CANADIAN PETROLEUM GEOLOGY. Bulletin of Canadian Petroleum Geology. Published by Riley's Datashare from Calgary, Alberta, Canada.

BULLS. AM. PALEONTOLOGY.Bulletins of American Paleontology. Published by the Paleontological Research Institute from Ithaca, New York.

CARNegie INST. WASHINGTON YEARBOOK. Yearbook of the Carnegie Institute of Washington. Published by the Institute from Washington, D.C.

CINCINNATI SOC. NAT. HIST. JOUR. Journal of the Cincinnati Society of Natural History, Published by the Society from Cincinnati, Ohio.


COASTAL RESEARCH NOTES. Coastal Research Notes. Published by Florida State University from Tallahassee, Florida.

CONTRIBS. MINERALOGY AND PETROLOGY. Contributions to Mineralogy and Petrology. Published commercially by Springer Verlag from Heidelberg, West Germany.


EOS. EOS. Published by the American Geophysical Union from Washington, D.C.

ECOLOGY. Ecology. Published by the Ecological Society of America from Brooklyn, New York.

ECON. GEOLOGY. Economic Geology. Published by the Society of Economic Geologists from Lancaster, Pennsylvania.

EISZEITALTER UND GEGENWART. Eiszeitalter und Gegenwart. Published by the Deutschen Quartaervereinung from Oehringen, Germany.

ELISHA MITCHELL SOC. JOUR. Journal of the Elisha Mitchell Scientific Society. Published by the North Carolina Academy of Science from Chapel Hill, North Carolina.

EXPLORER. The Explorer. Published by the Cleveland Museum of Natural History from Cleveland, Ohio.

FIELDIANA GEOLOGY. Fieldiana, Geology. Published by the Chicago Natural History Museum [Field Museum] from Chicago, Illinois.

FLORIDA ACAD. SCI. QUART. JOUR. Quarterly Journal of the Florida Academy of Science. Published by the Academy from Gainesville, Florida.

FLORIDA GEOL. SURVEY BULL.;...INF. CIRC. Bulletin and Information Circular of the Florida Geological Survey. Published by the Survey from Tallahassee, Florida.


GEOL. SOC. AMERICA ABSTRACTS WITH PROGRAMS; BULL.; PROC.; SPEC. PAPER. Abstracts with Programs, Bulletin, Proceedings, and Special Papers of the Geological Society of America. Published by the Society from New York City, New York, and Boulder, Colorado.


GEOPHYSICS. Geophysics. Published by the Society of Exploration Geophysics from Tulsa, Oklahoma, and Houston, Texas.

GEORGIA ACAD. SCI. BULL. Bulletin of the Georgia Academy of Science. Published by the Society from diverse places.

GEORGIA GEOL. SURVEY BULL.; GUIDEBOOK; INF. CIRC. Bulletin, Guidebook, and Information Circular of the Georgia Geological Survey. Published by the Georgia Department of Mines, Mining, and Geology from Atlanta, Georgia.

GEORGIA MINERAL NEWSLETTER. Georgia Mineral Newsletter. Published by the Georgia Department of Mines, Mining, and Geology from Atlanta, Georgia.

GEORGIA SPELUNKER. Georgia Spelunker. [mimeographed]. Published by the Atlanta Grotto of the National Speleological Society from Atlanta, Georgia.

GEORGIA UNDERGROUND. Georgia Underground. [mimeographed]. Published by the Dogwood City Grotto of the National Speleological Society from Atlanta, Georgia.

GIORNALE DI GEOLOGIA. Giornale di Geologia. Published by the Museo Geologico di Bologna from Bologna, Italy.

GROUND WATER. Ground Water. Published by the National Water Well Association from Urbana, Illinois.

GULF COAST ASSOC. GEOL. SOCS. TRANS. Transactions of the Gulf Coast Association of Geological Societies. Published by the Association from diverse places.

HOUSTON GEOL. SOC. BULL. Bulletin of the Houston Geological Society. Published by the Society from Houston, Texas.

ICARUS. Icarus. Published commercially by the Academic Press from New York City, New York.


INTERNATL. GEOL. CONG. International Géologique Congress. Published by the Congress from Prague, Czechoslovakia, and from Mexico City, Mexico.
SOC. VERTEBRATE PALEONTOLOGY NEWS BULL. News Bulletin of the Society of Vertebrate Paleontology. Published by the Society from diverse places.

SOIL SCI. SOC. AMERICA PROC. Proceedings of the Soil Science Society of America. Published by the Society from Ann Arbor, Michigan.

SOUTHERN CAROLINA ACAD. SCI. BULL. Bulletin of the South Carolina Academy of Science. Published by the Academy from Columbia, South Carolina.

SOUTHEASTERN GEOL. SOC. GUIDEBOOK. Guidebook of the Southeastern Geological Society. Published by the Society from Tallahassee, Florida.

SOUTHEASTERN GEOLOGY. Southeastern Geology. Published by Duke University from Durham, North Carolina.

SPELEO DIGEST. Speleo Digest. Published by members of the Pittsburgh Grotto of the National Speleological Society, from Pittsburgh, Pennsylvania.

SPELEOTYPE. Speleotype. [mimeographed] Published by the Smoky Mountain Grotto of the National Speleological Society from Knoxville, Tennessee.

STATE GEOLOGISTS JOUR. State Geologists Journal. Published by the Association of State Geologists from diverse places.

TENNESSEE DIV. GEOLOGY REPT. INV. Reports of Investigations of the Tennessee Division of Geology. Published by the Division from Nashville, Tennessee.

TORREY BOT. CLUB. BULL. Bulletin of the Torrey Botanical Club. Published by the Club from New York City, New York.

TULSA GEOL. SOC. DIGEST. Tulsa Geological Society Digest. Published by the Society from Tulsa, Oklahoma.


UNIV. GEORGIA MARINE INST. COLL. REPRINTS. Collected Reprints of the University of Georgia Marine Institute, Sapelo Island. Published by the Institute from Athens, Georgia.

WATER RESOURCES RESEARCH. Water Resources Research. Published by the American Geophysical Union from Washington, D.C.

ZEITSCHR. GEOMORPHOLOGIE. Zeitschrift fuer Geomorphologie. Published commercially by Gebrueder Borntraeger from Stuttgart, Germany.

ZEITSCHR. NATURFORSCH. Zeitschrift fuer Naturforschung. Published commercially from Tuebingen, Germany.
ABEY, ALBERT EDWARD, 1935- , see Giardini, Armando Alphonso, 3
ADAMS, JOHN ALLEN STEWART, 1926-, see Harris, Robert Curtis, 1
AKER S, LAWRENCE KEITH, 1919-, see Noakes, John Edward, 1
ALEXIADIES, COSTAS ALEXANDER, 1930- , 1. (and Jackson, Marion Leroy). Quantitative clay mineralogical analysis of soils and sediments, in Clays and clay minerals — Proceedings of the fourteenth national conference: New York, Pergamon Press, p. 35-52, illus., 1966. A flow sheet for the quantitative analysis of clays in soils is presented. Some of the samples are chlorite from Bartow County and kaolinite from Twiggs County.
ALLEN, ARTHUR THOMAS, JR., 1917-, see Cramer, Howard Ross, 4
ALLEN, THOMAS ERWIN, 1930-, see Pickering, Samuel Marion, Jr., 3
AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS
ANDERSON, ERNEST CARL, 1920-, see Rowe, Marvin Wayne, 1
ANDREASON, GORDON ELLSWORTH, 1924-, see Zietz, Isidore, 3
ANIYA, MASAMU, 1944-
ANNELL, CHARLES SYLVESTER, 1921-, see Cuttitta, Frank, 1
ANTOINE, JOHN WOODWORTH, 1932-
1. (and Henry, Vernon James, Jr.). Seismic refraction study of shallow part of continental shelf off Georgia coast: Am. Assoc. Petroleum Geologists Bull., v.49, p. 601-609, illus., 1965; Univ. Georgia Marine Inst. Coll. Reprints, v. 5, 1966. Four distinct, continuous layers are detected, and are: (1) a layer a few feet thick (Miocene?), (2) the Oligocene, (3) the early Eocene rocks, and (4) the pre-Cretaceous basement. Comparisons are made with Coastal Plain rocks. The eastern boundary of the Atlantic Embayment is recognized. Numerous small-scale maps are included.
APPLIN, ESTHER ENGLISH RICHARDS, 1895-1972, see Applin, Paul Livingston, 1; Maher, John Charles, 2, 3
APPLIN, PAUL LIVINGSTON, 1891-
1. (and Applin, Esther English Richards). The Gulf Series in the subsurface in northern Florida and southern Georgia: U.S. Geol. Survey Prof. Paper 524-G, p. G1-535, illus., 1967. The stratigraphy, structure, lithofacies, and micropaleontology of the Upper Cretaceous rocks of the Georgia Coastal Plain are discussed. Data from over 75 wells are analyzed. Many small-scale maps are included, and show: paleogeology, pre-Gulfian structures, Gulfian isopachs, Gulfian structure-contours, and various units within the Gulfian Series. Structure sections are also included.
ASMUSSEN, LORIS ELDEN, 1931-
1. (and Ritchie, Jerry Carlyle). Interflow or shallow phreatic flow in the Coastal Plain of [Tift County] Georgia: Jour. Hydrology, v. 9, p. 182-193, illus., 1969. Shallow-ground-water flow is determined, and it accounts for 1.8 inches of the 5.7 inches of annual rainfall.
ATLANTA GROTTO OF THE NATIONAL SPELEOLOGICAL SOCIETY
1. [Map of] Cemetery Pit [Cave]...Dade County: Georgia Spelunker, v. 10, no. 1, scale, 1 inch to 100 feet, 1966.
2. [Map of] Wilder Cave...Grady County: Georgia Spelunker, v. 10, no. 2, scale, 1 inch to 50 feet 1966.
AUDESEY, JOSEPH LEWIS, 1923-
AUSTIN, ROGER SETH, 1940-


AUVIL, JESSE HERBERT, JR., 1919-
1. (and Pickering, Samuel Marion, Jr.). Georgia, in Uranium in the southern United States: U.S. Atomic Energy Comm. Rept. WASH-1128, p. 66-70, illus., 1969. Six primary occurrences of uranium in Georgia are tabulated; all are in the Piedmont and Blue Ridge provinces, and none are currently being mined. Uranium also occurs in the Cretaceous and Miocene sedimentary rocks in the Coastal Plain.

AVERITT, PAUL, 1908-
1. Coal resources of the United States, January 1, 1967: U.S. Geol. Survey Bull. 1275, 116 p., illus., 1969. Georgia is estimated to have 78 million tons of bituminous coal remaining. This is the smallest reserve of any of the coal-producing states.

BABCOCK, CLARENCE VERNAL, 1918-
1. Florida petroleum exploration, production, and prospects, 1964: Florida Geol. Survey Inf. Circ. 49, 117 p., illus., 1966. Some of the cross-section interpretations include some of the rocks in the Coastal Plain of Georgia, and deal mostly with Cretaceous rocks from the deep well drilled in Mitchell County.

2. Geology of the Upper Cretaceous clastic section, northern peninsular Florida: Florida Geol. Survey Inf. Circ. 60, 44 p., illus., 1969. Portions of the southern part of the Georgia Coastal Plain are included. Small-scale but detailed isopach and structure-contour maps are used.

BAC, WILLIAM, 1925- , see Hanshaw, Bruce Busser, 1

BAEDECKER, PHILLIP ACKERMAN, 1939- 

BAGBY, ROBERT WILLIAM, 1930- 


BARNES, VIRGIL EVERETT, 1903-

BASS, MANUAL NATHAN, 1927-
1. Petrography and ages of crystalline basement rocks of Florida — some extrapolations, in Other papers on Florida and British Honduras: Am. Assoc. Petroleum Geologists Mem. 11, p. 283-310, illus., 1969. The basement rocks of Florida are described, and allusion is made to the basement rocks of the Georgia Coastal Plain for comparison. Since they are not similar, a large fault between them is a possibility; it is in southern Georgia or northern Florida.

BAUER, CARL AUGUST, 1916-
1. The helium contents of metallic meteorites: Jour. Geophysical Research, v. 68, p. 6043-6057, illus., 1963. Cedartown meteorite, from Polk County, has an exposure age of 430 my, and the Putnam County meteorite has an exposure age of 340 my.

BAYLEY, RICHARD WILLIAM, 1919-

BEGEMANN, FRIEDRICH, 1927- see also Nyquist, Laurence Elwood, 1


BENNETT, JACKSON

BENNINGHOFF, WILLIAM SHIFFER, 1918-
1. (and Stevenson, Anne Louise). Pollen analysis of cave breccia from Ladds locality, Bartow
County, Georgia: Georgia Acad. Sci. Bull., v. 25, p. 188-191, 1967. Pine, spruce, and a few other non-arboreal species of pollen are present. The general character of the flora, however, provides a low reliability to paleoecological interpretations.

BENTLEY, ROBERT DONALD, 1933-1. (and Fairley, William Merle, and Fields, Herbert H., and Power, Walter Robert, Jr., and Smith, James William). The CartersvilleFault problem — Georgia Geol. Soc. Ann. Field Trip no. 1: Atlanta, Georgia Geol. Survey Guidebook 4, 38 p., illus., [1966]. The book includes descriptions of two days of field trips: There are 15 stops, and each is cursorially described. The trip is in Gilmer and Bartow Counties, and each stop is at a location relative to the fault problem.

2. (and Neathery, Thornton Lee). Geology of the Brevard Fault Zone and related rocks of the inner Piedmont of Alabama [and west-central Georgia]: Alabama Geol. Soc. Guidebook Ann. Field Trip 8, xi, 119 p., illus., 1970. The metamorphic rocks and accompanying structures extend into Georgia, and some discussion of them is included. Sketch maps are included. None of the field trip stops is in Georgia, however.

BERGENDAHL, MAXIMILIAN HILMAR, 1921-1. see Koschmann, Albert Herbert, 1
BERKELEY, DOROTHY SMITH, see Crisp, Nicholas, 1
BERKELEY, EDMUND, 1912-1. see Crisp, Nicholas, 1
BERKEY, EDGAR, 1940-
2. (and Fisher, David Elemelech). The abundance and distribution of chlorine in iron meteorites: Geochimica et Cosmochimica Acta, v. 31, p. 1543-1558, illus., 1967. Analyses of the Smithonia meteorite, from Oglethorpe County, are included along with many others from elsewhere. Smithonia is deeply weathered, and the chlorine content has been contaminated.
3. (and Fisher, David Elemelech). Chlorine as an indicator of terrestrial contamination in iron meteorites, in Origin and distribution of the elements: New York, Pergamon Press, p. 359-366, illus., 1968. A chlorine gradient, decreasing inward from the surface, is interpreted as being due to weathering. The Smithonia, Oglethorpe County meteorite is one of those studied.

4. (and Morrison, George Harold). Distribution of trace elements in Smithonia [Oglethorpe County] iron meteorite by spark source mass spectrometry, in Origin and distribution of the elements: New York, Pergamon Press, p. 345-357, illus., 1968. Twenty elements, down to 20 ppm, are recognized. Nonhomogeneous concentrations within the iron are attributed to weathering.

BERRY, FREDERICK ALMET FULGHUM, 1929-1. see Carlson, Charles Gordon, 2
BERRY, WILLIAM BENJAMIN NEWELL, 1931-1. (and Boucot, Arthur James, and others). Correlation of the North American Silurian rocks: Geol. Soc. America Spec. Paper 102, 289 p., illus., 1970. Only the Red Mountain Formation of Lower Silurian age occurs in northwestern Georgia. Small-scale paleogeographic and paleozoogeographic maps are included, as are brief descriptions of Silurian phenomena, some of which are in Georgia.

BLANCHARD, HARRY EUGENE, JR., 1930-

BOLE, GEORGE ADDISON, 1889-1. see Stull, Ray Thomas, 1
BOND, THOMAS ALDEN, 1938-1. see also Serudato, Ronald John, 2
3. Radiocarbon dates of peat from Okefenokee Swamp [Charlton County], Georgia: Southeastern Geology, v. 11, p. 199-201, illus., 1970. Peat from 300 to 330 cm deep is 5140 ± 417 years old, and that from a depth of 330 to 360 cm is 5260 ± 360 years old. These dates represent the beginning of organic deposition in the area.

BOSSERMAN, KENTON, see Dolan, Robert, 1
BOUCOT, ARTHUR JAMES, 1924-1. see also Berry, William Benjamin Newell, 1
1. (and Johnson, John Granville). Appalachian Province Early Devonian paleogeography and brachiopod zonation, in International symposium on the Devonian System, vol. 2: Calgary, Alberta Soc. Petroleum Geologists, p. 1255-1267, illus., 1967. Small-scale paleogeographic maps show the distribution of land and sea areas, and the rock-types for the various Devonian units. Northwestern Georgia is included. A map of the distribution of brachiopod genera is also included. The edge of deposition is shown to have been in northwestern Georgia.


3. (and Johnson, John Granville). Paleogeography and correlation of Appalachian Province Lower Devonian sedimentary rocks: Tulsa Geol. Soc. Digest, v. 35, p. 35-87, illus., 1967. Northwestern Georgia is mapped as being entirely a land area during the Helderbergian Epoch and entirely a quartzose sandstone depositional environment during the Shoharie and Oriskany Epochs. Faunal communities are discussed for each epoch.

BRANN, DORIS C., 1918- see Palmer, Katherine Evangeline Hilton Van Winkle, I
BRANSON, CARL COLTON, 1906-
BRAUN, EMMA LUCY, 1889-1971
1. The phytogeography of the unglaciated eastern United States and its interpretation: Bot. Rev., v. 21, p. 297-375, illus., 1955. A verbose review of the distribution of modern vegetation includes a review of the geologic background for plant distribution; Georgia is included. Pleistocene glaciation is one important source of the southward-forced migration of many plants.
BRETT, CHARLES EVERETT, 1932-
1. Upper Cretaceous equivalents in Georgia and the Carolinas, in Geology of the Coastal Plain of Alabama — Alabama Geol. Soc. Guidebook, Field Trip no. 1: University, Alabama, Alabama Geol. Soc., p. 18-25, illus., 1967. Included is a review of the Cretaceous rocks of the Coastal Plain of Georgia. Those rocks east of Ocmulgee River are correlated with the Middendorf Formation.
BRETT, PETER ROBIN, 1935-
BRINKMANN, ROLAND, 1898-
BROBST, DONALD ALBERT, 1925-
BROWN, HARRISON SCOTT, 1917- see Moore, Carleton Bradley, I
BROWNING, WILLIAM FLEMING, JR., 1926-
BUIE, BENNETT FRANK, 1910-
BUNCH, THEODORE EUGENE, 1936-
1. (and Keil, Klaus, and Olsen, Edward John). Mineralogy and petrology of silicate inclusions in iron meteorites: Contribs. Mineralogy and Petrology, v. 25, p. 297-340, illus., 1970. Studies of the Pitts, Wilcox County meteorite are included. Various mineralogical and textural parameters are used to classify this type of meteorite. Pitts is in the Capiapo class, which has considerable variation in texture but which contains less complex mineral assemblages.
BUNDY, WAYNE MILEY, 1924-
ties of kaolins are shown to have statistical correlation relationships with various chemical variations. In some instances, negative correlations are present.

BURCHFIEL, BURRELL CLARK, 1934-

BUTLER, JAMES ROBERT, 1930- , see also Burchfiel, Burrell Clark, 1

BYRNE, JOHN VINCENT, 1928- , see Neiheisel, James, 5

CAIN, JOSEPH CARTER, 1930- , see Zietz, Isidore, 3

Caldwell, Dabney Withers, 1927- , see Overstreet, William Courtney, 2

CALLAHAN, JOSEPH THOMAS, 1922- , see also Wait, Robert Lyle, 2
1. (and Newcomb, Lawrence Edward, and Geurin, James Walter). Water in Georgia: U.S. Geol. Survey Water-Supply Paper 1762, 88 p., illus., 1965. This is a popular account of the occurrence and use of water in Georgia. The nature of the water occurrence in each of the physiographic provinces is described.

Cameron, Angus Ewan, 1906- , see Wampler, Jesse Marion, 1

Carey Walter Culpin, 1893- , see Wamp-Gering, Henry, 1

Carlson, Charles Gordon, 1895-

Carlston, Charles William, 1912-
1. Longitudinal slope characteristics of rivers of the Midcontinent and the Atlantic east Gulf slopes: Internat. Assoc. Scientific Hydrology Bull., v. 14, no. 4, p. 21-31, illus., 1969. The longitudinal profile of the Savannah-Tugaloo River system is shown to be abnormal in that there is no marked change in slope at the Fall Line. The relationship of this slope to Appalachian peneplains and their uplift is shown.

Carpenter, Robert Heron, 1937- , see also Hughes, Thomas Carson, 1
1. (and Hughes, Thomas Carson). A geochemical and geophysical survey of the Gladesville Norite, Jasper County, Georgia: Georgia Geol. Survey Inf. Circ. 37, 7 p., illus. incl. geol. map, 1970. Gabbroic intrusives are revealed by positive gravity anomalies and by stream sediments which are high in nickel, copper, and zinc, and which are topographically below the areas which contain the anomalies.

Carr, Martha Ensign Strait, 1894-

Carrilo, Fred V., see Kingston, Gary Arthur, 1

Carron, Maxwell Kenneth, 1910- , see Cuttita, Frank, 1

Carsey, Jerry Ben, Sr., 1902-

Carver, Robert Elliott, 1931- , see also Sandy, John, Jr., 1
1. Stratigraphy of the Jackson Group (Eocene) in central Georgia [Coastal Plain]: Southeastern Geology, v. 7, p. 83-92, illus., 1966. Two facies are present: an updip clastic-facies and a down­ dip carbonate-facies. The clastic units are time equivalents of the Ocala Limestone. The carbonate facies are comprised of the Ocala Limestone and the overlying Cooper Marl which is correlated with the upper part of the fully developed Ocala Limestone in the type area.
4. The piezometric surface of the Coastal Plain aquifer in Georgia, estimates of original elevation and long-term decline: Southeastern Ge-
ology, v. 9, p. 87-99, illus., 1968. The present surface is compared with the surface determined from earlier reports. The long-term effects of the heavy pumping around major municipal and industrial centers has been far-reaching. More wells are needed to properly monitor aquifer pressures.


CATHCART, JAMES BATECHEDER, 1917- see also Sever, Charles William, Jr., 8


CENTINI, BARRY AUSTIN, 1937-


CHANG, CHAN-TIN, 1934-

1. (and Waenke, Heinrich). Beryllium-10 in iron meteorites, their cosmic-ray exposure and terrestrial ages, in Meteorite research: Dordrecht, Holland, D. Reidel Pub. Co., p. 397-406, illus., 1969; discussions, p. 459-460: No specific discussion of Georgia meteorites is included, but Georgia is included in that area on a map of the United States in which meteorites have high terrestrial ages.

CHEETHAM, ALAN HERBERT, 1928-

1. Paleoeclimatic significance of the bryozoan genus Metarhabdotos: Gulf Coast Assoc. Geol. Soc. Trans., v. 17, p. 400-407, illus., 1967. One occurrence in Georgia from an unspecified Coastal Plain locality, in Oligocene rocks, and numerous others from elsewhere, are used to show the basis for identifying tropical marine faunal provinces during the late Paleogene and Neogene Periods.


CHEN, CHIH SHAN, 1929-


CHOWNS, TIMOTHY MICHAEL, 1942-


CHRISTENSEN, FREDERICK BURR, 1929-


CLARK, FRANK RINKER, 1881-1974, see also Carlson, Charles Gordon, 2

CLARK, LORIN DELBERT, 1918- see also Zapp, Alfred Dexter, 2


CLARK, ROY SLAYTON, JR., 1925- see also Cuttitta, Frank, 1

CLARKE, OTIS MANSON, JR., 1914-


CLEARY, WILLIAM JAMES, JR., 1943- see also Doyle, Larry James, 1, 2

1. Petrology of Coastal Plain and Piedmont river sands, southeastern United States [including Georgia?] [abstract]: Geol. Soc. America Ab-
CLOUD, WILLIAM KENDRIC, 1910- , see
Coffman, Jerry Lee, 1; Von Hake, Carl Aloysius, 1
COBB, JAMES CURTIS, 1930-
1. Iron meteorites with low cosmic-ray exposure
ages [Wilcox County]: Science, v. 151, p. 1624,
illus., 1966. Based on the $^{36}$Ar/$^{38}$Ar ratio, the
Pitts meteorite has been exposed only 4 million
years. It fell in 1921.
2. A trace-element study of iron meteorites: Jour.
Geophysical Research, v. 72, p. 1329-1341,
illus., 1967. The Pitts, Wilcox County meteorite
has 13 percent nickel, .51 percent cobalt, 480
ppm calcium, 2.1 ppm gold, and 60 ppm gallium.
COFFMAN, JERRY LEE, 1940-
1. (and Cloud, William Kendric), United States
earthquakes 1965: Washington, D.C., U.S. Coast
and Geodetic Survey, 109 p., illus., 1970. A
small-scale seismic-risk map shows the Georgia
Coastal Plain to be in Zone I, minor damage,
and the rest of the state to be in Zone II, moderate
damage. There were no earthquake epicenters in
Georgia during 1968.
COHEE, GEORGE VINCENT, 1907-
Petroleum Geologists Bull., v. 53, p. 2560-
2562, port., 1969.
2. Memorial of Hugh Dinsmore Miser — December
8, 1884 — August 1, 1969: Am. Mineralogist,
COLLY, WALLACE HENRY CLIFTON, JR.,
1922- , see also Storey, James Welborn, 1, 2
1. (and others). [Map of] Sitton cave, Dade
County, Georgia: Georgia Underground, v. 1, no. 3,
scale, 1 inch to 50 feet, 1964; Speleo Digest
COLQUHOUN, DONALD JOHN, 1932-
1. Geomorphology of river valleys in southeastern
Atlantic Coastal Plain: Southeastern Geology, v.
7, p. 101-109, illus., 1966; discussions by Ray-
mond Bryant Daniels, Erling Edward Gamble, and
Forrest Steele, v. 8, p. 89-96, illus., 1967;
reply by author, p. 97-104, illus., 1967. Two iso-
static cycles and five eustatic sea-level stages
have interacted to make the valleys and rivers
anomalous. The Altamaha and the Savannah
Rivers are included. Continental emerging and
submerging cycles interact with eustatic sea-level
changes. Terraces and various other types of
deposits are evaluated.
2. Coastal Plain terraces in the Carolinas and Geor-
gia, in Quaternary geology and climate — Pro-
cceedings of the 7th Congress of the Assoc. Qua-
Two gradational sequences, one terrestrial, the
other marine, form the Atlantic Coastal Plain
terraces. The details of the complexes are de-
scribed. They are associated with a transgressive-
regressive strandline change.
3. (and Pierce, Jack Warren, and Schwartz, Maurice
J. [Leo]). Field and laboratory observations on
the genesis of barrier islands [Coastal Plain]
[abstract], in Abstracts for 1968: Geol. Soc.
COMERFORD, MATTHIAS FRANCIS, 1925-
1. Phosphate and carbide inclusions in iron meteor-
ites, in Meteorite research: Dordrecht, Holland,
discussions, p. 840-841. The nature, occurrence,
and relationship of these two phases are de-
scribed. Included are data from the Dalton,
Whitfield County meteorite.
CONLEY, ROBERT F., 1928-
1. Statistical distribution patterns of particle size
and shape in the Georgia kaolins, in Clays and
clay minerals — Proceedings of the fourteenth
national conference: New York, Pergamon
kaolins were examined to determine the particle-
size variations. Various factors which explain
the size distributions and patterns are discussed.
CONNELL, JAMES FREDERICK LEWIS, 1920-
1. Penholoway Formation [Wayne County] [Part
1 of] Type locality descriptions: Gulf Coast
Assoc. Geol. Socs. Trans., v. 19, p. 615-616,
illus., 1969. This is a formal description of this
Pleistocene formation type section.
COOK, ROBERT BIGHAM, JR., 1944-
1. The geology of a part of west-central Wilkes
County, Georgia: MS Thesis, Univ. Georgia,
53 p., illus. incl. geol. map, 1967 [1968].
2. Gold mineralization at the Latimer Mine, Wilkes
County, Georgia [abstract]: Geol. Soc. America
COOKE, CHARLES WYTIE, 1887-1971, see
Hoyt, John Harger, 10
COPE, EDWARD DRINKER, 1840-1897, see
Moore, Joseph, 1
COUNTS, HARLAN BRYAN, 1921- , see
Herrick, Stephen Marion, 5
Cramer, Fritz Hendrik, 1927-
1. Distribution of selected Silurian acritarchs:
Rev. Espanola Micropaleontologia, no. ex-
traordinaria, 203 p., illus., 1970. Acritarchs from
the Silurian Red Mountain Formation in north-
western Georgia are described, illustrated, and
used to correlate the Georgia Silurian rocks with those from elsewhere. Numerous genera and species are present.

Cramer, Howard Ross, 1925-
2. (and Grant, Willard Huntington). Some highlights of the Cretaceous and crystalline terranes of Georgia: Southeastern Geol. Soc. Guidebook 11, 37 p., illus., 1965. The two-day field trip begins in Lumpkin, Stewart County and goes northeastward to Lithonia, Dekalb County via Columbus, in Muscogee County. A cursory review of the Cretaceous rocks exposed along the Chattahoochee River is followed by a 35 mile trip with three stops. A review of the metamorphic and igneous rocks of the Piedmont is followed by a trip of 118 miles, making five stops. The geology at each stop is described.
7. Structural features of the Coastal Plain of Georgia: Southeastern Geology, v. 10, p. 111-123, illus., 1969; correction, v. 11, p. 203, 1970. Twenty-eight features are mapped, and the origins of the names are given. There is a fundamental framework of basins and uplifts, with northeast-southwest trending structures of various kinds superimposed.

Crane, Marilyn Joyce, 1931-

Crawford, Thomas Jones, 1932-
1. (and Hurst, Vernon James, and Ramspott, Lawrence Dewey). Extrusive volcanics and associated dike swarms in central-east Georgia [Piedmont] — Geol. Soc. America Southeastern Section, Guidebook Field Trip no. 2: Athens, Univ. Georgia Geol. Dept., 53 p., illus., 1966. The trip is 213 miles long and makes 8 stops. It starts in Athens, Clarke County, and goes to Philomath, Oglethorpe County via Washington, Jefferson, and Lincoln Counties. Details of the geology en route are included.
2. Geologic map, Columbia County, Georgia: Augusta, Georgia, Central Savannah River Area Planning and Development Commission and Athens, Georgia, Univ. Georgia Geology Dept., scale, 1 inch to 1.6 miles, 1968.
3. Geologic map, Lincoln County, Georgia: Augusta, Georgia, Central Savannah River Area Planning and Development Commission, and Athens, Univ. Georgia Geology Dept., scale, 1 inch to 1.6 miles, 1968.
4. Geologic map, McDuffie County, Georgia: Augusta, Georgia, Central Savannah River Area Planning and Development Commission, and Athens, Univ. Georgia Geology Dept., scale, 1 inch to 1.6 miles, 1968.
5. Geologic map, Taliaferro County, Georgia: Augusta, Georgia, Central Savannah River Area Planning and Development Commission, and Athens, Univ. Georgia Geology Dept., scale, 1 inch to 1.6 miles, 1968.
6. Geologic map, Warren County, Georgia: Augusta, Georgia, Central Savannah River Area Planning and Development Commission, and Athens, Univ. Georgia Geology Dept., scale, 1 inch to 1.6 miles, 1968.
7. Geologic map, Wilkes County, Georgia: Augusta, Georgia, Central Savannah River Area Planning and Development Commission and Athens, Univ. Georgia Geology Dept., scale, 1 inch to 1.6 miles, 1968.
9. (and Medlin, Jack Harold). Stratigraphic and structural features between the Cartersville and Brevard Fault Zones [Piedmont] — Geol. Soc. Ann. Field Trip 5: Atlanta, Georgia Dept. Mines, Mining and Geology [Guidebook 9], 37 p., illus., 1970. The trip is 55 miles long and makes 16 stops, the geology of each of which is described. Only metamorphic rocks are present. The trip begins in Allatoona, Bartow County and ends in Carroll County, near Frank-
lin. Graphitic schist is used as a marker unit to outline the structures.

CUPPELS, NORMAN PAUL, 1916- , see "Ecology and ground-water resources of Floyd and Polk Counties, Georgia: Georgia Geol. Survey Inf. Circ. 39, 95 p., illus. incl. geol. map, 1970. Folded and faulted Cambrian to Pennsylvanian sedimentary rocks are described, and the water-bearing properties of each are discussed. Fossils are illustrated.

CRISP, NICHOLAS

CRONHEIM, SAMUEL P., 1882-1976, see "Zodiac, Peter, 1"

CRUFT, EDGAR FRANK, 1933-

CULBERTSON, WILLIAM CRAVEN, 1919-

CUPPELS, NORMAN PAUL, 1916- , see "Overstreet, William Courtney, 2"

CUTTIITA, FRANK, 1912-1974
1. (and Clark, Roy Slayton Jr., and Carron, Maxwell Kenneth, and Annell, Charles Sylvester). Martha's Vineyard and selected [Dodge County] Georgia tektites — new chemical data: Jour. Geophysical Research, v. 72, p. 1343-1349, illus., 1967; discussion by Elbert Aubrey King, Jr., p. 2835-2836, illus., 1967. Seven Georgia tektites with different specific gravities are included. Detailed chemical analyses indicate that they probably came from the fusion of differentially-volatilized silica-rich igneous rocks.

DANIELS, RAYMOND BRYANT, 1925- , see "Colquhoun, Donald John, 1"

DARBY, DAVID GRANT, 1932-

DARRELL, JAMES HARRIS, 2nd, 1942-

DAVIES, WILLIAM EDWARD, 1917-


DAVIS, GEORGE HAMILTON, 1921- , see "Poland, Joseph Fairfield, 1"

DE BOER, JELLE, 1934-
1. Paleomagnetic-tectonic study of Mesozoic dike swarms in the Appalachians: Jour. Geophysical Research, v. 72, p. 2237-2250, illus., 1967. Many of the examples cited are from the Triassic dikes in the Georgia Piedmont. Paleomagnetic measurements suggest a Jurassic age, or at least not Triassic or Cretaceous.

DE CARLO, JOSEPH ANTHONY, 1907-
1. (and Sheridan, Eugene Titus, and Murphy, Zane Ellsworth). Sulfur content of United States coals: U.S. Bur. Mines Inf. Circ. 8312, 44 p., illus., 1966. Tables show that Georgia has 76 million tons of coal still in reserve and that it is low in sulfur (0.8-1.0 percent).

DE FELICE, JAMES CHARLES, 1929- , see "Fireman, Edward Leonard, 1"

DENNIS, LEONARD S., 1928-1973, see "Taylor, Patrick Timothy, 1; Zietz, Isidore, 1"

DENNISON, JOHN MANLEY, 1934- , see "Oliver, William Albert, Jr., 1, 2"

DENSON, NORMAN MC LAREN, 1914- , see "White, Walter Stanley, 2"

DE WITT, REIN, 1914-

DE WITT, WALLACE, JR., 1920- , see "Oliver, William Albert, Jr., 1, 2"

DISNEY, RALPH WILLARD, 1923-

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DOLAN, ROBERT, 1929-

DORF, ERLING, 1905-

DORF, LINCOLN, 1903-
1. (and Ewing, John Isaac, and Stockard, Henry Patton). The continental margin of the eastern United States: Canadian Jour. Earth Sci., v. 5, p. 993-1010, illus., 1968. Offshore Georgia is included, and much allusion is made to the mainland to which various geophysical surveys are compared. The structures offshore are shown in their relationships to the structures onshore.

DOLCATER, DAVID LEE, 1941-

DOYLE, LARRY JAMES, 1943-

2. (and Cleary, William James, Jr., and Pilkey, Orrin Hendren). Mica — its use in determining shelf-depositional regimes: Marine Geology, v. 6, p. 381-389, illus., 1968; Univ. Georgia Marine Inst. Coll. Reprints, v. 6, 1968. Mica from Georgia rivers and beaches, and from elsewhere, is used to show that mica deposition occurs in nearshore bands with the beaches and the far offshore areas being characterized by winnowing of mica.


DRAKE, CHARLES LUM, 1924-
1. (and Ewing, John Isaac, and Stockard, Henry Patton). The continental margin of the eastern United States: Canadian Jour. Earth Sci., v. 5, p. 993-1010, illus., 1968. Offshore Georgia is included, and much allusion is made to the mainland to which various geophysical surveys are compared. The structures offshore are shown in their relationships to the structures onshore.

DUNHAM, DAVID BLAIR, 1938-
1. Continental margins, in The earth's crust and upper mantle: Am. Geophysical Union Mon. 13, p. 549-556, illus., 1969. A small-scale map shows the relationship between the crystalline-rock surface of eastern North America (including Georgia) and the submarine surface where seismic velocities exceed 5.6 km/sec. Elongated, sediment-filled troughs are noted.

DUNLAP, JOHN CRAWFORD, 1911-
1. Continental margins, in The earth's crust and upper mantle: Am. Geophysical Union Mon. 13, p. 549-556, illus., 1969. A small-scale map shows the relationship between the crystalline-rock surface of eastern North America (including Georgia) and the submarine surface where seismic velocities exceed 5.6 km/sec. Elongated, sediment-filled troughs are noted.

DUNN, DAVID EVAN, 1935-,


EHMANN, WILLIAM DONALD, 1931-
1. (and Baedecker, Philip Ackerman, 1; Tanner, James Thomas, 1

1. (and Baedecker, Philip Ackerman, and McKown, David Melvin). Gold and iridium in meteorites and some selected rocks: Geochimica et Cosmochimica Acta, v. 34, p. 493-507, 1970. In Sardis meteorite, Burke County, the troilite phase contains 230 ppb gold and more than 380 ppb iridium.
EINAUDI, MARCO TULLIO, 1939- , see Marvin, Ursula Bailey, 1
ELSTON, LEWIS WILLIAM, 1922- , see Ostrander, Charles Corliss, 3
ENGEL, ALBERT EDWARD JOHN, 1916-
1. Geologic evolution of North America: Science, v. 140, p. 143-152, illus., 1963. Radiometrically-dated rocks from Georgia and elsewhere show a definite time periodicity. Continental accretion is shown, as the younger events occur toward the outside of the continent. Georgia, in the Appalachian Province, is in the 0.0-6 by. event.

ENGELBRIGHT, STEVEN CALE, 1946-

ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION, see U.S. Geological Survey, 5.

EPPLEY, ROBERT ASHTON, 1925-
1. Earthquake history of the United States — Part 1, Stronger earthquakes of the United States...: Washington, D.C., U.S. Coast and Geodetic Survey [Spec. Pub.] no. 41-1, revised edition (through 1963), 120 p., illus., 1965. There have been five earthquake-epicenters in Georgia since 1872, with magnitudes of over V; the greatest has been VI.

EPSTEIN, SAMUEL, 1919- , see also Taylor, Hugh Pettingill, Jr., 1
1. (and Taylor, Hugh Pettingill, Jr.). Variation of O18/O16 in minerals and rocks, in Researches in geochemistry, vol. 2: New York, John Wiley and Sons, p. 29-62, illus., 1967. A review of the broad geological implications to be derived from oxygen-isotope distributions includes, as an example, the formation — temperature of the Elberton Granite from Elbert County, which was 758°C.

EWAN, JOSEPH ANDORFER, 1909-

EWING, JOHN ISAAC, 1924- , see Drake, Charles Lum, 1
FAIRLEY, WILLIAM MERLE, 1928- , see also Bentley, Robert Donald, 1
1. The Murphy Syncline in the Tate Quadrangle [Cherokee, Dawson, Forsyth, and Pickens Counties] Georgia: Georgia Geol. Survey Bull. 75, 71 p., illus. incl. geol. map, 1965. Ten-thousand feet of metasedimentary rocks of uncertain age are mapped and described in great petrographic detail. A cross-folded syncline is the major structure, and it is overturned to the west. Analyses of the rocks are included.


4. Stratigraphy and structure of the Murphy Marble Belt in [Gilmer and Pickens Counties] parts of northern Georgia, in Precambrian-Paleozoic Appalachian problems: Georgia Geol. Survey Bull. 80, p. 89-120, illus., 1969. Facies changes between carbonate and clastic rocks are described. Overturned synclines expose the rocks. The calc-schists and silicious marbles lie in the Andrews Schist. Analyses of the rocks are included, but no age is assigned.

FALLS, DARRYL LEE, 1946- , see Cramer, Howard Ross, 3
FAUL, HENRY, 1920-
1. Tektites are terrestrial: Science, v. 152, p. 1341-1345, illus., 1966. The case is made that tektites are of terrestrial origin rather than extra-terrestrial. The source of those found in Georgia is not known, but the nearest possible crater is in Mississippi.

FAUST, GEORGE TOBIAS, 1908-

FELDER, WILSON, see Dolan, Robert, 1
FETH, JOHN HENRY FREDERICK, 1913-
1. (and others). Preliminary map of the conterminous United States showing depth to and quality of shallowest ground water containing more than 1,000 parts per million dissolved solids: U.S. Geol. Survey Hydrol. Invs. Atlas HA-199, 2 sheets, scale, 1 inch to 3,168,000 inches, 31 p., 1965.

FIELD, MICHAEL EHRENHART, 1945-

2. (and Pilkey, Orrin Hendren). Feldspar in Atlant-
tic continental margin sands off the southeastern United States: Geol. Soc. America Bull., v. 80, p. 2097-2102, illus., 1969. The feldspar content of the shelf sands is generally low, and it is derived largely from Piedmont-headed rivers. The size of the shelf feldspar grains is smaller than the size of the beach and river feldspar grains.

FIELDS, HERBERT H., 1928- , see Bentley, Robert Donald, 1

FIREMAN, EDWARD LEONARD, 1922-1. (and DeFelice, James Charles, and Tilles, David). Tritium and radioactive argon and xenon in meteorites and satellites, in Radioactive dating: Vienna, Internatl. Atomic Energy Agency, p. 323-333, 1963; discussions, p. 334. The Pitts meteorite, from Wilcox County, is included among those which were examined. Only Ar$^{39}$ is present, having been formed by nuclear interactions of energetic cosmic rays.


FISHER, DAVID ELEMELECH, 1932- , see also Berkey, Edgar, 1, 2, 3
1. Silicon in iron meteorites and the earth's core: Nature, v. 222, p. 866-867, 1969. Data from the Smithonia, Oglethorpe Water is included. Georgia has a high fluoride content, but all waters are variable in fluorine content, but all are under 1.0-1.4 ppm.

FLEISCHER, MICHAEL, 1908-1. Fluoride content of ground water in the conterminous United States, in Relation of geology and trace elements to nutrition: Geol. Soc. America Spec. Paper 90, p. 65, illus., 1967. A small-scale map shows that Georgia's grounds waters are variable in fluorine content, but all are under 1.0-1.4 ppm.


FOOTE, ERICK ENSIGN, 1942- , see also Shreiber, Richard Walter, 1


FOUCHE, KAREL FREDERICK, 1939- , see Smales, Albert Arthur, 1, 2

FOUNTAIN, RICHARD CALHOUN, 1937- , see Buie, Bennett Frank, 2

FOUTS, JAMES ALLEN, 1938- , see also Salotti, Charles Anthony, 1, 2

FOX, FRED LOUIS, 1933-1. Seismic geology of the eastern United States: Assoc. Engineering Geologists Bull., v. 7, nos. 1 and 2, p. 21-43, illus., 1970. A general review of the seismicity of the eastern United States and its relationship to geologic provinces is shown. Small-scale maps are included. Georgia is mostly in the low-intensity area, but northern Georgia is in the medium-intensity area.


FREY, ROBERT WAYNE, 1938- , see also Howard, James Dolan, 7

FRIEDMAN, GERALD MANFRED, 1921- , see

FURCRON, AURELIUS SYDNEY, 1899-1971, see also Fairley, William Merle, 3

2. A brief history of gold production in Georgia: Georgia Mineral Newsletter, v. 17, p. 25-26, 1964-1965. Gold was first discovered in White or Lumpkin County in 1828. Placer mining was developed first, and sluice and surface-vein mining soon followed. In 1838 the Dahlonega mint struck its first coins, with over 6 million dollars minted to 1861. Georgia has produced over 17 million dollars in gold.

3. Georgia’s geological surveys: Georgia Mineral Newsletter, v. 17, p. 18-24, illus. incl. ports., 1964-1965. Brief biographies and background data about the various directors of the Georgia surveys are given. They include: Cotting (1836-1838), Little (1874-1889), Spencer (1890-1893), Yeates (1893-1908), McCallie (1908-1933), Smith (1933-1938), Peyton (1938-1964), and Furcron (1964-).


5. The production of stone in Georgia: Georgia Mineral Newsletter, v. 17, p. 25-30, 1964-1965. A summary of the types, occurrence, and main uses of stone in Georgia is given, but no new details are included.

FURLOW, JAMES WARREN, 1937-

2. Stratigraphy and economic geology of the eastern Chatham County phosphate deposit: Georgia Geol. Survey Bull. 82, 40 p., illus., 1969. Upper Eocene to Holocene rocks are described in detail, largely from drill holes. Phosphate occurs in Miocene rocks; analyses are included. The ground water and economic geology of the phosphate deposits are described also. Cross sections show the subsurface relationships. There are 800,000,000 tons of 100 percent bone phosphate of lime.

GABELMAN, JOHN WARREN, 1921-1
1. Metallotectonic zoning in the North American Appalachian region: Internatl. Geol. Cong. 23, Proc. Sec. 7, Endogenous ore deposits, p. 17-33, illus., 1968. Many small-scale maps are used to show that the distribution of metal deposits throughout the Appalachians, including Georgia, is systematic. The patterns can be related to tectonic intervals. Tectonism and metal deposits decrease outward toward the foreland.

GAGLIANO, SHERWOOD MONEER, 1935-

GAMBLE, ERLING EDWARD, 1924- , see Colquhoun, Donald John, 1

GASTIL, RUSSELL GORDON, 1928-
1. The distribution of mineral dates in time and space: Am. Jour. Sci., v. 258, p. 1-35, illus., 1960. Isotopic dates and rocks from Georgia are included with others from elsewhere. Periodicity is shown, the Piedmont being in the 250-550 my. zone. Definite zones of events are evident, but continental accretion is not supported.

GEORGIA DEPARTMENT OF MINES, MINING AND GEOLOGY, see also Georgia Institute of Technology, 1, 2, 5, 6


GEORGIA INSTITUTE OF TECHNOLOGY, ENGINEERING EXPERIMENT STATION.
1. (and Georgia Dept. Mines, Mining and Geology). Project report no. 2, South Georgia Minerals Program, Echols County: Atlanta, Georgia Inst. Tech., Eng. Exper. Sta., 79 p., illus., 1966. Numerous drill holes in Echols County are logged. Phosphate and other mineral resources are noted in tabular form. Areas of potential commercial development are outlined, but only Miocene rocks are investigated.


3. Project report no. 5, South Georgia Minerals Program: Atlanta, Georgia Inst. Tech., Eng. Exper. Sta., 73 p., illus., 1966. Logs of numerous wells in Atkinson, Ben Hill, Berrien, Coffee, Cook, and Irwin Counties are given in tables. Phosphate is present in many, and most of the holes penetrate Miocene and younger rocks. Analyses are included. Lithologic, electric, and gamma-ray logs on seven holes are given. Glass sand, heavy-mineral-bearing sand, and phos­

4. Effingham County, sands and heavy minerals, phosphate sand — South Georgia Minerals Program Proj. Rept. 6: Atlanta, Georgia Inst. Tech. and Georgia Dept. Mines, Mining and Geology, 113 p., illus., 1967. Lithologic, electric, and gamma-ray logs on seven holes are given. Glass sand, heavy-mineral-bearing sand, and phos­

5. (and Abey, Albert Edward, and Liptai, Robert George). The shear strength of 3 Georgia mar­

6. (and Georgia Dept. Mines, Mining and Geology). Project report no. 10, Savannah area, South Georgia Minerals Program: [Atlanta, Georgia Inst. Tech.], 72 p., illus., 1968. Logs of holes drilled in Bryan, Chatham, Effingham, and Screven Counties are given in tables. The emphasis is upon the potential mineral resources. Phosphate, clay, sand, and heavy minerals are among those present. Geophysical logs are given for some of the holes.

7. Project report no. 11, South Georgia Minerals Program: Atlanta, Georgia Inst. Tech., and Dept. Mines, Mining and Geology, 163 p., illus., 1969. Phosphate-bearing sand from numerous holes drilled into the Coastal Plain are described. Lithologic, electric, and gamma-ray logs are included, as are analyses of the phosphate­bearing sands. Areas of economic potential are described.

GERGEL, THOMAS JOSEPH, 1936-1938.

GUERIN, JAMES WALTER, 1922-1936, see Callahan, Joseph Thomas, 1

GIARDINI, ARMANDO ALFONSO, 1925-1938, see also Forbes, Warren Clarence, 1


3. (and Abey, Albert Edward, and Liptai, Robert George). The shear strength of 3 Georgia mar­

GIBBS, JAMES ALLEN, 1936-

GIBSON, THOMAS GEORGE, 1934-1966, see Towe, Kenneth McCann, 1

GILCHRIST, JASON, 1936-
1. The formation of the kamacite phase in metallic meteorites: Jour. Geophysical Research, v. 70, p. 6223-6232, illus., 1965. The Smithonia, Oglethorpe County meteorite has 5.88 percent nickel and fits into the hexahedrite class. The percentage of nickel influences the width of the kamacite bands in the Widmanstatten structures.

2. (and Short, James M.). The iron meteorites, their thermal history and parent bodies: Geochimica et Cosmochimica Acta, v. 31, p. 1733-1770, illus., 1967. Cooling rates, based upon Widmanstatten patterns, are used to determine numbers of possible parent bodies for iron meteorites. Meteorites in the various Ga-Ge groups are genetically related. The data comes in part from Canton, Laurens County, Pitts, Putnam County, and Social Circle meteorites.


GOLDSTEIN, ROBERT FRITZ, 1944-

GOODMAN, DAVID MICHAEL, 1936-

GOLDSTEIN, ROBERT FRITZ, 1944-

2. (and Short, James M.). The iron meteorites, their thermal history and parent bodies: Geochimica et Cosmochimica Acta, v. 31, p. 1733-1770, illus., 1967. Cooling rates, based upon Widmanstatten patterns, are used to determine numbers of possible parent bodies for iron meteorites. Meteorites in the various Ga-Ge groups are genetically related. The data comes in part from Canton, Laurens County, Pitts, Putnam County, and Social Circle meteorites.


GOLDSTEIN, ROBERT FRITZ, 1944-

GOODMAN, DAVID MICHAEL, 1936-

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GOODMAN, DAVID MICHAEL, 1936-

GOLDSTEIN, ROBERT FRITZ, 1944-

GOODMAN, DAVID MICHAEL, 1936-

GOLDSTEIN, ROBERT FRITZ, 1944-

GOODMAN, DAVID MICHAEL, 1936-
10. Geology of the Barnesville area, and Towaliga Fault, Lamar County, Georgia — Georgia Geol. Soc. Guidebook, 2d Ann. Field Trip: [Atlanta, Georgia Dept. Mines, Mining and Geology], 16 p., illus., 1967. Only metamorphic rocks are present. A fold and two fault movements, one the Towaliga, are recognized. The trip is 36 miles long and makes 10 stops, and the geology at each stop is described.


8. Abrasion pH, an index of chemical weathering: Clays and Clay Minerals, v. 17, p. 151-155, illus., 1969. Weathered Stone Mountain Granite from DeKalb County is used to show that clay slurries vary in pH, and that the difference is due to the amount of weathering.


GRASY, ROBERT LEONARD, 1939- , see also Milton, Charles, 2

GREGG, DEAN OAKLEY, 1937-
1. An analysis of ground-water fluctuations caused by ocean tides in Glynn County, Georgia: Ground Water, v. 4, no. 3, p. 24-34, illus., 1966. The influence of tides on the ground-water levels is an indirect function of the distance from the sea and the depth of the well. Examples from wells in the Brunswick area are used.


GREMMILLION, LOUIS RAY, 1931-
1. Miocene near-shore deposits of attapulgite [southwestern Georgia Coastal Plain]: Coastal Research Notes, no. 11, p. 11-12, 1964. The attapulgite in southwestern Georgia is attributed to volcanic-ash deposits, having come from vulcanism in Texas, and having been deposited in a fault-formed trough.


GRiffin, GEORGE MELVIN, JR., 1928-
1. (and Tedrick, Patricia Ann, and Reel, David Anderson, and Manker, John Phillip). Geothermal gradients in Florida and southern Geor-
1. The area, its geology—Cenozoic development of coastal Georgia. Cenozoic development of coastal Georgia and South Carolina, U.S.A.: Internatl. Geol. Cong. 23, Proc. Sec. 14, Genesis of the kaolin deposits, p. 9-21, illus., 1968. The occurrence, composition, and origin of the Coastal Plain kaolin deposits are described. The properties giving them such widespread use are also considered.

GROGAN, ROBERT MANN, 1912.

GUEVEN, NECIP, 1936.
1. The crystal structures of 2M, phengite and 2M, muscovite [Piedmont]: Carnegie Inst. Washington Yearbook 66, p. 487-492, illus., [1967]. Crystallographic data of a muscovite from somewhere in Georgia are given with a view toward determining the structural factors governing the stacking sequence.

GUILD, PHILIP WHITE, 1915- , see Carr, Martha Ensign Strait, 1

GUILDAY, JOHN E., 1925.

HACK, JOHN TILTON, 1913.

HADLEY, JARVIS BARDWELL, 1909-1974, see Fairley, William Merle, 3

HAGER, DORSEY, 1887-1971.
1. Possible oil and gas fields in the Cretaceous beds of Alabama [and Early County, Georgia]: Am. Inst. Mining Engineers Trans., v. 59, p. 424-431, 1918; discussion, p. 431-434; ...Bull. 134, p. 467-476, 1918; discussion, Bull. 136, p. 819-822, 1918. The Gordon Anticline is recognized in southeastern Alabama, and it extends eastward into Early County, Georgia. It has 40 feet of closure and includes about 10 square miles.

HAILS, JOHN ROBERT, 1932- , see also Hoyt, John Harger, 15, 20, 25.
1. (and Hoyt, John Harger). Barrier development on submerged coasts — Problems of sea-level changes from a study of the Atlantic Coastal Plain of Georgia, U.S.A. and parts of the east Australian coast: Zeitschrift Geomorphologie Supplementband 7, p. 24-55, illus., 1968; Univ. Georgia Marine Inst. Coll. Reprints, v. 6, 1968. Examples from the Georgia coastline suggest that the barrier islands are the result of the submergence of older beach-ridge dunes. These are altered by currents, and lagoons form inland. Once formed, the islands may be altered. Radiocarbon dates show that some are Pleisto­cene.

2. (and Hoyt, John Harger). An appraisal of the lower Atlantic Coastal Plain of Georgia, U.S.A.: Inst. British Geographers Trans., v. 46, p. 53-68, illus., 1969; Univ. Georgia Marine Inst. Coll. Reprints, v. 6, 1968. The terraces along the Georgia coast are explained as beach-ridge deposits with adjacent, landward lagoon facies reaching inland to the next beach ridge line. The present barrier islands are from the submergence of the most recently formed beach ridges.


HALL, DONALD D., 1933.

HALLIDAY, WILLIAM ROSS, 1926- , see Davies, William Edward, 2

HAMMOND, EDWIN HUGHES, 1919.
HANSHAW, BRUCE BUSSER, 1930-
1. (and Back, William, and Rubin, Meyer). Relation of carbon 14 concentrations to saline water contamination of coastal aquifers [Glynn County]: Water Resources Research, v. 1, p. 109-114, illus., 1965. The carbon 14 content of trapped sea-water is shown to be lower than that of fresh water which may have been more recently at equilibrium with the atmosphere; it is possible, therefore, to determine if saline contamination is from connate water or from recently-introduced sea water. The Ocala Limestone at Brunswick is contaminated by connate water from the underlying Claiborne Limestone rather than by seawater encroachment.

HARRISON, RICHARD EDES, 1901-

HARRISON, ROBERT ALAN, 1946-

HARRIS, ROBERT CURTIS, 1925-

HARTNER, FLORINE ELIZABETH, 1914-


HARDING, JAMES LOMBARD, 1929-

HEASLIP, WILLIAM GRAHAM, 1928-

HECHT, ALAN DAVID, 1944-
1. Miocene distribution of molluscan provinces along the east coast of the United States: Geol. Soc. America Bull., v. 80, p. 1617-16-20, illus., 1969. The modern Georgia-coast molluscs are in that group which is south from Cape Hatteras and which are separated by a Q mode analysis of 180 species. The change is due to a temperature barrier imposed by the Gulf Stream. There is no such break in the Miocene, suggesting that the Gulf Stream was displaced.

HENDERSON, EDWARD PORTER, 1898-
1. Hexahedrites: Smithsonian Misc. Collns., v. 148, no. 5, 41 p., illus., 1965. The discussion of this group of meteorites includes Cedartown, Holland's Store, Locust Grove, and Smithsonian. Weights, and dates, if known, are included. Smithsonian is among the largest.

HENRY, VERNON JAMES, JR., 1931-

1. (and Hoyt, John Harger). Distribution of estuarine and nearshore sediments of the central coast of [ McIntosh County] Georgia [abstract],

3. (and Hoyt, John Harger). Quaternary paralic and shelf sediments of Georgia, [Part 2] of Marine geology of the Atlantic continental margin of the southern United States: Southeastern Geology, v. 9, p. 195-214, illus., 1968; Univ. Georgia Marine Inst. Coll. Reprints, v. 6, 1968. Holocene paralic deposits up to 100 feet thick, form a lens 20 to 30 miles wide which straddles the shoreline. Shelfward the sediments are relict Pleistocene and coarser; whereas landward the sediments are finer, and are lagoonal and barrier-island sands. Paralic sediments accumulated inland during higher stands of sea level.


HERON, STEPHEN DUNCAN, JR., 1926-1. (and Johnson, Henry Stanley, Jr.) Clay mineralogy, stratigraphy, and structural setting of the Hawthorn Formation, Coosawatchie District, South Carolina: Southeastern Geology, v. 7, p. 51-63, illus., 1966. The newly-identified Ridgeland Basin is the origin of some of the thickness differences observed in the Miocene Hawthorn Formation. The basin may extend southwestward into Georgia, west and north from Savannah.


HERR, WILFRED, 1914- , see Herpers, Ulrich, 1

HERRICK, STEPHEN MARION, 1904- see also Sever, Charles William, Jr., 9


3. A subsurface study of Pleistocene deposits in coastal Georgia: Georgia Geol. Survey Inf. Circ. 31, 8 p., illus., 1965. Pleistocene clastic deposits occur as a seaward thickening wedge; they are about 60 feet thick. No subsurface differentiation is attempted. Fossils are listed.


5. (and Counts, Harlan Bryan). Late Tertiary stratigraphy of eastern Georgia: Georgia Geol. Soc. Guidebook, Field Trip 3, ii, 88 p., illus., 1968. The trip begins in Augusta, Richmond County, and trends southward, parallel to Savannah River for 72 miles, and ends at Stony Bluff Landing, in Burke County. The geology at seven stops is described, and fossils are listed. The overlap of various Tertiary formations is examined.


HEY, MAX HUTCHINSON, 1904- , see Prior, George Thurland, 1

HIGGINS, MICHAEL WICKER, 1940-1. The geology of part of Sandy Springs Quadrangle [Cobb and Fulton Counties] Georgia: MS
2. The geology of the Brevard Lineament near Atlanta, [Carroll, Cobb, Douglas, and Fulton Counties] Georgia: Georgia Geol. Survey Bull. 77, vi, 49 p., illus. incl. geol. map, 1965. The structure, stratigraphy, and origin of the Sandy Springs Sequence and rocks of the Brevard Zone are described in great detail. All are metamorphic and of an uncertain age, but are pre-Triassic. Analyses are included.


HINCKLEY, DAVID NARWYN, 1928-1. Mineralogical and chemical variations in the kaolin deposits of the Coastal Plain of Georgia and South Carolina: Am. Mineralogist, v. 50, p. 1865-1883, illus., 1965. Twenty-two chemical and mineral properties of hard and soft kaolins are examined. The differences in the two types of clays are explained as being due to deposition in marine (hard) and fresh-water (soft) environments.

HINTERBERGER, HEINRICH, 1910- , see Schultz, Ludolf, 1


HOLLAND, WALTER FOX, JR., 1946- , see Shreiber, Richard Walter, 2, 7

HOLLAND, WILLIS A., JR., 1931- , see also Sandy, John, Jr., 6

1. (and Sandy, John, Jr.). Geologic map, Emanuel County, Georgia: Augusta, Central Savannah River Area Planning and Development Comm., and Athens, Univ. Georgia Geology Dept., scale, 1 inch to 1.6 miles, 1968.


HOLMAN, J ALAN, 1931-1. A Pleistocene herpetofauna from Ladds [Bartow County], Georgia: Georgia Acad. Sci. Bull., v. 25, p. 154-166, illus., 1967. Fragments of nine amphibians, three turtles, and twelve snakes and lizards are recognized and discussed. They are from a bone-filled fissure. Data are in tables, and a turtle fragment is illustrated.


HORBACK, HENRY, 1912-19661. (and Olsen, Edward John). Catalog of the collection of meteorites in the Chicago Natural History Museum: Fieldiana Geology, v. 15, p. 175-319, 1965. Fragments or all of Canton, Cedartown, Dalton, Forsyth, Holland's Store, Locust Grove, Losttown, Lumpkin, Paulding County, Pickens County, Pitts, Putnam County, Smithonia, and Union County meteorites are present.

HORN, MYRON KAY, 1930- , see Manheim, Frank Tibor, 1


HOSKINS, DONALD MARTIN, 1930- , see Oliver, William Albert, Jr., 1, 2

HOWARD, JAMES DOLAN, 1934- , see also Frey, Robert Wayne, 1; Hoyt, John Harger, 9; Mayou, Taylor Vinton, 1; Mikesh, David Leonard, 1


described and illustrated.


HOYT, JOHN HARGER, 1928-1970, see also Hails, John Robert, 1, 2, 3; Henry, Vernon James, Jr., 1, 2, 3; Land, Lynton Stuart, 2; Weimer, Robert Jay, 1


3. (and Henry, Vernon James, Jr.). Rhomboid ripple mark, indicator of current direction and environment [McIntosh County]: Jour. Sed. Petrology, v. 33, p. 604-608, illus., 1963; in Pleistocene and Holocene sediments, Sapelo Island, Georgia, and vicinity — Geol. Soc. America Southeastern Sec., Field Trip no. 1: Athens, Univ. Georgia Geology Dept., 1966; Univ. Georgia Marine Inst. Coll. Reprints, v. 4, 1965. At Sapelo Island, rhomboid ripples are best developed on slopes of ½ to two degrees. They are bowed in the direction of the current generally, and are pointed up-current. They are formed on foreshore beaches by wave backwash and washover of low bars.


5. (and Weimer, Robert Jay, and Henry, Vernon James, Jr.). Late Pleistocene and Recent sedimentation, central Georgia [McIntosh County] coast, U.S.A., in Deltaic and shallow marine deposits — Developments in sedimentology, v. 1; Amsterdam, Elsevier Co., p. 170-176, illus., 1964; in Pleistocene and Holocene sediments, Sapelo Island, Georgia, and vicinity — Geol. Soc. America Southeastern Sec., Field Trip no. 1, 1966; Univ. Georgia Marine Inst. Coll. Reprints, v. 4, 1965. Coastal sediments and depositional environments are described. The geologic history of the area is related to the late Pleistocene and Holocene sea-level fluctuations. The geologic and geomorphic positions of the barrier islands, lagoons, and beaches are shown, and four different shorelines are recognized.


12. (and Henry, Vernon James, Jr.). Influence of island migration on barrier island sedimentation [McIntosh County]: Geol. Soc. America Bull., v. 78, p. 77-86, illus., 1967; Univ. Georgia Marine Inst. Coll. Reprints, v. 6, 1968. Sapelo Island is used as an example. The channel is more influential than the other factors. The channel sediments are very distinctive and can be used for interpretation and identification. Sedimentation characteristics from island migration are discussed, and earlier, high and low-stands of the sea are considered.


14. Occurrence of high-angle stratification in littoral and shallow neritic environments, central Georgia coast [McIntosh County]: Sedimentology, v. 8, p. 229-238, illus., 1967; Univ. Georgia Marine Inst. Coll. Reprints, v. 6, 1968. High-angle (more than 60 degrees) stratification is produced in several types of circumstances along the coast. Stratification comes from the addition of sediment to the steep, down-current face of asymmetrical ripple forms.


17. (and Henry, Vernon James, Jr., and Weimer, Robert Jay). Age of late Pleistocene shoreline deposits [McIntosh County], coastal Georgia,
18. Genesis of sedimentary deposits along coasts of submergence: Internatl. Geol. Cong. 23, Proc. Sec. 8, Genesis and classification of sedimentary rocks, p. 311-321, illus., 1968; Univ. Georgia Marine Inst. Coll. Reprints v. 6, 1968. Radiocarbon dates from shells on raised beaches show that the Princess Anne shoreline is 40,000-48,000 years old, and that the Silver Bluff shoreline is 25,000-30,000 years old. Six locations are cited. These would correlate with the Port Talbot and Plum Point interstadials.


to pinpoint possible mineral deposits in the area. Known deposits are reviewed, and new prospects are suggested. Analyses are included, and cores are logged. Limonite deposits are also investigated.

HUSTED, JOHN EDWIN, 1915- ; see also Dorman, Leroy Myron, 1; Ostrander, Charles Corliss, 3

IANNICELLI, JOSEPH, 1929-

ILLING, VINCENT CHARLES, 1890-1969.

JACKSON, MARION LEROY, 1914- , see Alexiades, Costas Alexander, 1; Dolcater, David Lee, 1

JAEGGER, RALPH ROGER, 1940-
1. (and Lipschutz, Michael Elazar). Implications of shock effects in iron meteorites: *Geochimica et Cosmochimica Acta*, v. 31, p. 1811-1832, illus., 1967. Various shock histories are recognized in over 80 meteorites. Among them are Canton and Putnam County, with 130 to 750 kb and 400 to 750 kb respectively.

JAIN, ANANT V.
3. (and Lipschutz, Michael Elazar). On preferred disorder and the shock history of chemical group IVA meteorites: *Geochimica et Cosmo-

chimica Acta*, v. 34, p. 883-892, illus., 1970. Metallographic and x-ray-diffraction studies of shocked meteorites include those of the Putnam County and Social Circle, Walton County meteorites. This former has an exposure age of 410 my, and a shock history of 400-750 my.

JINKS, DOUGLAS DAVID, 1938-

JOHNS, WILLIAM DAVIS, 1925- , see Bundy, Wayne Miley, 1

JOHNSON, HENRY STANLEY, JR., 1926- , see Heron, Stephen Duncan, Jr., 1

JOHNSON, JOHN GRANVILLE, 1932- , see Boucot, Arthur James, 1, 2, 3

JONES, DONOVAN DERONDA, JR., 1946-

JONES, WALTER BRYAN, 1895-

JUDD, JAMES BRIAN, 1945-
1. (and Smith, William Carey, and Pilkey, Orrin Hendren). The environmental significance of iron-stained quartz grains on the southeastern United States Atlantic shelf: *Marine Geology*, v. 8, p. 355-362, illus., 1970. Samples from Georgia beaches and from the Savannah River are included. Histograms and small-scale maps show the widespread iron-stained quartz grains on the shelf. More iron-stained quartz comes from Piedmont-draining streams than from the Coastal-Plain-draining streams. Much of the shelf quartz is from Pleistocene streams rather than from subaerial weathering of shelf sediments.

JUSTUS, PHILIP STANLEY, 1941- , see Burchfield, Burrell Clark, 1

KAARSBERG, ERNEST ANDERSEN, 1918-
KAUSHAL, SUSHIL KUMAR, 1938-
1. (and Wetherill, George West). $Rb^{87}/S^{87}$ age of bronzite (H group) chondrites: Jour. Geophysical Research, v. 74, p. 2717-2726, illus., 1969. The Lumpkin meteorite, from Stewart County, has a K/Rb weight ratio of 319, but no ages are determined.

KEIL, KLAUS, 1934- , see Bunch, Theodore Eugene, 1

KERR, JAMES R.
1. (and Rand, Lenox Hawes, and Valley, James Leo). The sulfur and sulfuric acid industry of eastern United States: U.S. Bur. Mines Inf. Circ. 8255, 92 p., illus., 1965. This is an extremely cursory review of the sulphide deposits in Georgia and elsewhere. All are in the Piedmont and Blue Ridge, and all are mainly pyrite.

KESLER, THOMAS LINGLE, 1908-

KHAIN, VICTOR EFIMOVICH, 1914-
1. (and Muratov, Mikhail Vladimirovich). Crustal movements and tectonic structure of continents, in The earth's crust and upper mantle: Am. Geophysical Union Mon. 13, p. 523-538, illus., 1969. A review of the large-scale tectonic patterns of the earth's crust includes a small-scale map of the world which includes Georgia. The tectonic setting of Georgia in relation to that of the United States and the rest of the world is shown.

KIEFER, JOHN DAVID, 1940-


KIER, PORTER MARTIN, 1927-
1. Revision of the oligopygoid echinoids: Smithsonian Misc. Collns., v. 152, no. 2, iii, 149 p., illus., 1967. *Oligopygus haldemani* from Eocene rocks in the Georgia Coastal Plain is discussed and illustrated.

2. Sexual dimorphism in an Eocene echinoid [Glynn County]: Jour. Paleontology, v. 41, p. 988-993, illus., 1967. *Pentedium curator* from Middle Eocene rocks in an oil well in Glynn County is described and illustrated. Male and female types are recognized.

3. Echinoids from the middle Eocene Lake City Formation of [Glynn County] Georgia: Smithsonian Misc. Collns., v. 153, no. 4738, 45 p., illus., 1968. Six species from a deep oil well in Glynn County are described and illustrated. Three are new species, and two of the genera are new.

KIM, STEPHEN MOO, 1935- , see Noakes, John Edward, 1

KIMBERLIN, JEROME, 1935- , see Wasson, John Taylor, 2

KING, ELBERT AUBRY, JR., 1935- , see also Cuttitta, Frank, 1


2. Major element composition of [Dodge County] Georgia tektites: Nature, v. 210, p. 828-829, illus., 1965. Analysis of a tektite from Dodge County shows that it (and other tektites) are high in Si and Al, has a low ferrous/ferric ratio, and has an excess of potash over soda.


KING, PHILIP BURKE, 1903-

2. Tectonic map of North America (scale 1:5,000,000): U.S. Geol. Survey, 2 sheets, scale, 1 inch to 5,000,000 inches, 1969.


4. Tectonic map of North America (scale 1:5,000,000): U.S. Geol. Survey Prof. Paper 628, iv, 35 p., illus., 1969. Explanations of, and elaborations on many of the features of the map include many in Georgia.

5. The Precambrian of the United States of Ameri-
ca; southeastern United States, in The geologic systems. The Precambrian, v. 4, Interscience, New York, p. 1-71, illus., 1970. A review of the Precambrian rocks includes those in Georgia. Each of the physiographic provinces is discussed regionally. Blue Ridge rocks are metasedimentary, and thrust-faulting is predominant with windows present. Piedmont rocks are largely gneisses and schists which may be in part Paleozoic. Little is known of those below the Coastal Plain.


7. Tectonics and geophysics of eastern North America, in The megatectonics of continents and oceans: New Brunswick, Rutgers Univ. Press, p. 74-112, illus., 1970. This is a review of the current study of large-scale tectonic features. Radiometric ages of rocks in the Piedmont are entirely Paleozoic; earthquake epicenters are not random, when seen as part of the continental distribution. Gravity and magnetic anomalies are also described, and several large, linear features are also present.

KINGSTON, GARY ARTHUR, 1933-1.
1. (and Miller, Robert Ardell, and Carrillo, Fred V.). Availability of U.S. chromium resources: U.S. Bur. Mines Inf. Circ. 8465, 23 p., illus., 1970. Small chromite deposits are reported from Troup County. Chromite occurs disseminated in serpentinitized peridotite, and it is not considered to be commercially important.

KINNEY, DOUGLAS MERRILL, 1917-

KLEMIC, HARRY, 1920-
1. Iron ore deposits of the United States of America, Puerto Rico, Mexico, and Central America, in Survey of world iron ore resources: New York, UNESCO, p. 411-477, illus., 1970. A short paragraph is given to iron ore occurrences in Georgia — the “red” ore of Silurian age in northwestern Georgia, and the “brown” ore of the Coastal Plain. No new data are included.

KLETT, WILLIAM YOUNG, JR., 1943-

KNECHTEL, MAXWELL MC MICHAEL, 1897-
1. Bauxitization of terra rosa in the southern Appalachian region, in Geological Survey research

1963: U.S. Geol. Survey Prof. Paper 475-C, p. C151-C155, illus., 1963. The bauxite deposits in northwestern Georgia are the results of leaching in sink holes in which the aluminum is extracted and concentrated, leaving an iron-rich terra rosa.

KOHN, TRUMAN PAUL, 1916-1.


KOVAR, ALLAN NORMAN, 1922-

KRUMBEIN, WILLIAM CHRISTIAN, 1902-

KULM, LA VERNE DUANE, 1936- , see Neihiesel, James, 5

LAND, LYNTON STUART, 1940-
1. Eolian cross-bedding in the beach dune environment, Sapelo Island [Mcintosh County] Georgia: Jour. Sed. Petrology, v. 34, p. 389-394, illus., 1964; in Pleistocene and Holocene sediments, Sapelo Island, Georgia and vicinity — Geol. Soc. America Southeastern Sec., Field Trip no. 1: Athens, Univ. Georgia Geology Dept., 1966; Univ. Georgia Marine Inst. Coll. Reprints, v. 4, 1965. High angle (more than 30°) cross-bedding records the orientation of the prevailing winds. About one half of the dune slip-faces and high-angle cross beds are stable at angles which exceed the angle of repose of dry sand; cross-bed dips as high as 42 degrees are stable in, and may be indicative of, the beach-dune environment.

described and illustrated. The interrelated biological influence is also described.

LANDRUM, JOE ROGER, 1934- , see Smith, James William, 2

LANG, WALTER BARNES, 1890-1973.

1. Pleistocene Mollusca of the Ladds deposit, Bartow County, Georgia: Georgia Acad. Sci. Bull., v. 25, p. 167-187, 1967. Twenty-five species of mollusks are recorded and discussed; one is a pelecypod, and the others are gastropods. They are compared with the total nonmarine mollusk fauna from the state. Twenty three are still extent in the state, and the other two are not unexpected in the Pleistocene deposit at Ladds.

LARRABEE, DAVID MARCEL, 1909-1978.

LAURENCE, ROBERT ABRAHAM, 1908-1977.


LEE, JERRY JEFFREY, 1942-1977, see Schreiber, Richard Walter, 4

LE GRAND, HARRY ELWOOD, 1917- , see also Stringfield, Victor Timothy, 2


LEIGHTON, MORRIS MORGAN, 1887-1971.


LESTER, JAMES GEORGE, 1897- , see Cramer, Howard Ross, 4; Grant, Willard Huntington, 1


LEVY, JOHN SANFORD, 1944-.


4. (and Logan, Thomas Francis, Jr., and Woolsey, James Robert, Jr.). Potential application of infrared photography to sedimentary pro-
cesses [Coastal Plain] [abstract]: Geol. Soc.
America Abstracts with Programs, v. 2, p. 228-
229, 1970.

5. (and Henry, Vernon James, Jr.). Seasonal
variations in suspended sediment in a salt marsh
estuary [McIntosh County] [abstract]: Geol.
Soc. America Abstracts with Programs, v. 2, 
p. 228, 1970.

LEWIS, CHARLES FRANKLIN, 1936- , see
Moore, Carleton Bradley, 2

LIPPS, EMMA LEWIS, 1919- , see also Nunan,
Walter Edward, 1; Ray, Clayton Edward, 1, 4, 5

1. (and Ray, Clayton Edward). The Pleistocene
fossiliferous deposit at Ladds, Bartow County,
Georgia: Georgia Acad. Sci. Bull., v. 25, p. 113-
119, illus., 1967. The fissure fillings of the
Ladds Quarry site, 2.3 miles west of Carters­
ville, have yielded 78 species of vertebrates and
25 species of gastropods. The deposit, and the
information from it, fills a gap in knowledge of
the area between Tennessee and Florida.

LIPSCHUTZ, MICHAEL ELAZAR, 1937- , see
Jaeger, Ralph Roger, 1; Jain, Anant V., 1, 2, 3

LIPTAI, ROBERT GEORGE, 1937- , see
Giardini, Armando Alphonso, 3

LIVINGSTON, JOHN LEE, 1940- , see also
Burchfiel, Burrell Clark, 1

1. (and McKniff, Joseph Michael). Tallulah Falls
Dome, northeastern Georgia — another window?

LLOYD, ORVILLE BRUCE, JR., 1934- , see
Wyrick, Granville Glenn, 2

LOGAN, JOHN ALEXANDER, 1908-

1. Oscar Edward Meinzer [1876-1948] — O pai
do moderna hidrogeologia: Agua Subterranea,
no. 1, p. 15-17, 1965.

LOGAN, THOMAS FRANCIS, JR., 1943- , see
also Levy, John Sanford, 4

1. Pleistocene stratigraphy in Glynn and McIntosh
Counties, Georgia: MS Thesis, Univ. Georgia,
103 p., illus., 1968.

2. (and Henry, Vernon James, Jr.). Subsurface
Pleistocene sediments and stratigraphy of the
central Georgia coast [McIntosh and Glynn
Counties] [abstract], in Abstracts for 1968:
Geol. Soc. America Spec. Paper 121, p. 453-
454, 1969.

3. (and Henry, Vernon James, Jr.). Pleistocene
drainage in McIntosh County, Georgia [ab-
stract]: Geol. Soc. America Abstracts with

LONG, LELAND TIMOTHY, 1940- , see
Ostrander, Charles Corliss, 3

LURIE, EDWARD, 1927- , see also

1. Louis Agassiz [1807-1873] — a life in science:
Chicago, Univ. Chicago Press, 390 p., abridged,
1966; originally published 1960.

LUTERNAUER, JOHN LELAND, 1942- , see
Morton, Robert Wheldon, 1; Pilkey, Orrin Hendren, 2

LUTTRELL, GWENDOLYN LEWISE WERTH,
1927- , see Kover, Allan Norman, 1

LYONS, PAUL LIGHTNER, 1911-

1. Continental and oceanic geophysics, in Mega-
tectonics of continents and oceans: New Brun-
swick, Rutgers Univ. Press, p. 147-166, illus.,
1970. Small-scale contour maps, based on
seismic, gravity, and magnetic data, show the
Conrad and the Mohorovicic discontinuities
below the United States and Georgia. The Con-
rad is 0-20 km deep, and the Mohorovicic is
30-50 km deep below Georgia.

2. Trenton extent in the United States, a regional
study: Tulsa Geol. Soc. Digest, v. 34, p. 99-109,
ilus., 1966. A general but complete discussion
of Trenton-aged rocks in the United States in-
cludes those in Georgia. The rocks in Georgia
are entirely limestone.

MC CLELLAN, GUERRY HAMRICK, 1939-

1. Petrology of attapulgus clay in north Florida
Illinois, 127 p., 1964; [abstract], Dissert.
Abs., v. 25, p. 6539, 1965.

MC COLLUM, MORRIS JOHN, 1936-

1. Ground-water resources and geology of Rock-
dale County, Georgia: Georgia Geol. Survey Inf.
Circ. 33, 17 p., illus. incl. geol. map, 1966. The
area is underlain by Precambrian (?) metamor-
phic rocks which have been intruded by younger
igneous rocks of uncertain age; some are diabase
of Triassic age. Each unit is described, with em-
phasis being placed upon the water-bearing pro-
ducts. Analyses of the water are included.
Springs are located on the geologic map.

MC KNIFF, JOSEPH MICHAEL, 1940- , see
also Livingston, John Lee, 1

1. Geology of the Highlands-Cashiers area, North
Carolina and [Blue Ridge] Georgia: Ph D
Thesis, Rice Univ., 167 p., illus. incl. geol. map,
1967; [abstract], Dissert. Abs., v. 28, part B.
1. Palynology of core samples of Paleozoic sediments from beneath the Coastal Plain of Early County, Georgia: Georgia Geol. Survey Inf. Circ. 40, p. 27 p., illus., 1970. Devonian rocks from a deep oil-test well contain plant fragments, spores, and hystricospheres. The rocks are siltstone and shaly-quartzose sandstone. Fossils are illustrated.

MCLDME, WILLIAM HICKMAN, 1940- 


MAGEE, MAURICE, 1929- 

MAHER, JOHN CHARLES, 1914- 
1. Correlations of subsurface Mesozoic and Cenozoic rocks along the Atlantic coast: Tulsa, Am. Assoc. Petroleum Geologists [Cross Section pub. no. 3], 18 p., illus., 1965. One of the cross sections is along the coast from New Jersey to Florida; one is from east to west along the southern part of the Coastal Plain, and a third is from the Fall Line to the Atlantic Ocean in Georgia. Names and electric-log characteristics are given.

2. (and Applin, Esther English Richards). Geologic framework and petroleum potential of the Atlantic Coastal Plain and continental shelf: U.S. Geol. Survey [Repts. Open File, no. 944], 280 p., illus., 1967; summary, Tulsa Geol. Soc. Digest, v. 35, p. 278-283, illus., 1967. A complete stratigraphic, structural, and geophysical report includes data about Mesozoic and Cenozoic rocks in Georgia Coastal Plain. All are described, and structures are outlined. Numerous small-scale maps of various types are also included. The potential for petroleum in Cretaceous rocks is fair, and that of Tertiary rocks is far less promising.

3. (and Applin, Esther English Richards). Correlation of subsurface Mesozoic and Cenozoic rocks along the eastern Gulf Coast: Am. Assoc. Petroleum Geologists Cross Sec. Pub. no. 6, 29 p., illus., 1968. Paleozoic, Triassic, Cretaceous and Eocene rocks from a well in Early County, and Cretaceous and Tertiary rocks from wells in Echols and Atkinson Counties are correlated with rocks in Florida and Alabama. Thickness and electric log characteristics are included.

MANEY, DAVID SAMUEL, 1928- 

MANHEIM, FRANK TIBOR, 1930- 
1. (and Horn, Myron Kay). Composition of deeper subsurface waters along the Atlantic continental margin, [Part 3] of Marine geology of the Atlantic continental margin of the southern United States: Southeastern Geology, v. 9, p. 215-236, illus., 1968. The Georgia coastal wells provide some of the data. The upper 1000 meters of sediments are generally influenced by meteoric water. Fresh water may occur beneath saltier water below 1000 meters. Saltiness generally increases with depth. Clay membranes promote osmotic flushing of the salty strata by fresh water.

MANKER, JOHN PHILLIP, 1944- 
1. John Harger, 11

MANLEY, FREDERICK MELVIN, JR., 1931- 
1. Martin, Benjamin Franklin, see Griffin, George Melvin, Jr., 1

MANLEY, JOHN PHILLIP, 1931- 
1. see Martin, Benjamin Franklin, 1

MAPPER, DAVID, 1923- 
1. see Smales, Albert Arthur, 1, 2

MARGOLIS, STANLEY V., 1943- 
1. Electron micrography of modern and ancient quartz sand grains [Coastal Plain]: Coastal Research Notes, v. 2, no. 2, p. 7-8, 1966. The sand grains in the hard-kaolin deposits along the Fall Line show surface features which have resulted from deposition in the marine environment with low wave-and-current-energy. Some of the grains are from a high-energy, fresh-water environment.

MARSALIS, WILLIAM EPHEMIAM, JR., 1937-
1. Petroleum exploration in Georgia: Georgia Geol. Survey Inf. Circ. 38 (revision of Information Circular 19), 52 p., illus., 1970. Oil and gas tests drilled in Georgia since 1903 are described and mapped. Brief logs are included for many, and tabular stratigraphic data are supplied for others. Altogether, 141 tests have been drilled, but with no success to date; most are in the Coastal Plain.

MARTIN, BENJAMIN FRANKLIN, 1945-

MARVIN, URSULA BAILEY, 1921-
1. (and Einaudi, Marco Tullio). Black, magnetic spherules from Pleistocene and Recent beach sands: Geochimica et Cosmochimica Acta, v. 31, p. 1871-1884, illus., 1967. Magnetic spherules occur in ilmenite concentrations from many places, including Folkston, Charlton County. They are of extraterrestrial origin, and those in the 250 micron range are magnetic.

MASON, BRIAN HAROLD, 1917- , see Wiik, Hugo Birger, 1

MELLO, JAMES FRANCIS, 1936- , see also Crawford, Thomas Jones, 9
1. Relations between suspended matter and salinity in estuaries of the Atlantic seaboard, U.S.A.: Internat'l Assoc. Scientific Hydrology, Bern Gen. Assembly (Pub. 78), p. 96-109, illus., 1968. Studies of rivers entering the Atlantic show that suspended matter is not necessarily precipitated when the fresh water meets the salt water. The deflocculated fine materials may be carried as clastic material to the sea. Some data gathered from the Savannah River are used.

2. Errors in using modern stream-load data to estimate natural rates of denudation: Geol. Soc. America Bull., v. 80, p. 1265-1274, illus., 1969. Examples are taken from several rivers in Georgia, as well as others from elsewhere, to show that the human influence on sediment load in rivers is considerable. Farming and urbanization are the big factors. The sediment load in the Georgia rivers has actually decreased due to soil-conservation measures.

3. Landward transport of bottom sediments in estuaries of the Atlantic Coastal Plain: Jour. Sed. Petrology, v. 39, p. 222-234, illus., 1969. The Altamaha and Savannah River estuaries are included. Both are at equilibrium with the present sea-level — i.e., that which comes in, goes out.


MEDLIN, JACK HAROLD, 1938- , see also Crawford, Thomas Jones, 9
1. (and Hurst, Vernon James). Geology and mineral resources of the Bethesda Church area, Greene County, Georgia: Georgia Geol. Survey Inf. Circ. 35, 29 p., illus. incl. geol. map, 1967. Only undated granite and metamorphic rocks which have been intruded by Triassic diabase are present; they are described, and mapped. Copper, gold, iron, manganese, kaolin, pegmatite, and talc are the mineral resources present.

2. (and Sandy, John, Jr.). Geologic map, Jefferson County, Georgia: Augusta, Central Savannah River Area Planning and Development Comm., and Athens, Univ. Georgia Geology Dept., scale, 1 inch to 1.6 miles, 1968.

MEADE, ROBERT HEBER, 1930-
MERTIE, JOHN BEAVER, JR., 1888-

MEYERHOFF, ARTHUR AUGUSTUS, 1928-


MIESCH, ALFRED THOMAS, 1927-
, see Shacklette, Hansford Threlkeld, 1

MIKESH, DAVID LEONARD, 1941-

MILICI, ROBERT CALVIN, 1931-
, see also Stearns, Richard Gordon, 1


2. (and Smith, James William). Stratigraphy of the Chickamauga Supergroup in its type area [Northwestern Georgia], in Precambrian-Paleozoic Appalachian problems: Georgia Geol. Survey Bull. 80, p. 1-35, illus., 1969; Tennessee Div. Geology Rept. Inv. 24, 1969. There are 1450 feet of limestone and argillaceous limestones in the Chickamauga Group and the Nashville Group; collectively they are the Chickamauga Supergroup. They overlie the Knox Group unconformably. Seven formations are present, and the Supergroup underlies the Sequatchie Formation of Upper Ordovician age. Sections are measured.

MILLER, JESSE AUSTIN, 1927-
1. Titanium, a mineral survey: U.S. Bur. Mines Inf. Circ. 7791, 202 p., illus., 1957. A complete discussion of the origin and use of titanium includes a notice that titanium comes from rutile mined in Lincoln County and from heavy-mineral-bearing sands along the Atlantic coast. No details are included.

MILLER, ROBERT ARDELL, 1923-
, see Kingston, Gary Arthur, 1

MILLMAN, NATHAN, 1904-1971, see Iannicelli, Joseph, 1

MILTON, CHARLES, 1896-
1. (and Hurst, Vernon James). Subsurface basement rocks of Georgia: Georgia Geol. Survey Bull. 76, 56 p., illus., 1965. Petrographic analyses of rocks from below the Cretaceous rocks of the Coastal Plain are discussed. Those toward the north are in metamorphic rocks, i.e., "true basement", and the rest are in various kinds of igneous and sedimentary rocks. Comparisons with surface-exposed rocks are made.

2. (and Grasty, Robert Leonard). "Basement" rocks of Florida and Georgia: Am. Assoc. Petroleum Geologists Bull., v. 53, p. 2483-2493, illus., 1969. Diabase from the basement in a Mitchell County oil well is 182 ± 5 my, and that from a well in Echols County is 191 ± 15 my old. A hornblendite from a well in Chattahoochee County is 303 ± 15 my old. Petrographic descriptions of these and others are included.

MITCHELL, JEFFREY LEONARD, 1946-

MOHR, DAVID WILFRED, 1941-
1. Regional setting and intrusion mechanics of the Stone Mountain pluton [DeKalb and Gwinnett Counties]: MS Thesis, Emory Univ., 68 p., illus., 1965.

MONTGOMERY, FLORENCE, see Stanley, Edward Alexander, 1

MONTGOMERY, PAUL HOOPER, 1909-
1. Erosion and related land use conditions in the Lloyd Shoals Reservoir watershed [Piedmont] Georgia: U.S. Dept. Agric., Soil Cons. Service, Physical Land Survey no. 10, 27 p., illus., 1940. Erosion types are measured and described above the dam area; sheet erosion and gully formation are the most significant, and have been more so since the removal of the vegetation cover due to agriculture. The relations of erosion, slope, land use and sedimentation in the reservoir are shown in tables.

199, illus., 1967. An enormous area is drained into the Gulf of Mexico, of which western Georgia is included. The nature of the terrain is described cursorily; the resulting marine sediments are surprisingly uniform.

MOORE, CARLETON BRADLEY, 1932-1

MOORE, JOSEPH

MORRISON, GEORGE HAROLD, 1921- , see Berkey, Edgar, 4

MORTON, ROBERT WHELDON, 1942- , see also Pilkey, Orrin Hendren, 2

MUEHLBERGER, WILLIAM RUDOLF, 1923- , see Bayley, Richard William, 1

MUNOZ, MAXIMO FERNANDO, 1931- , see Georgia Dept. Mines, Mining and Geology, 1; Ostrander, Charles Corliss, 3

MURATOV, MIKHAIL VLADIMIROVICH, see Khain, Victor Efimovich, 1

MURPHY, RICHARD ERNEST, 1920-1
1. Landforms of the world: Assoc. Am. Geographers Map Supplement 9, scale, 1 inch to 800 miles, 1968; also in Assoc. Am. Geographers Annals, v. 58, p. 198-200, 1968. A very small-scale map shows landforms of the world, including those of Georgia, which are based upon structural origin.

MURPHY, ZANE ELLSWORTH, 1922- , see DeCarlo, Joseph Anthony, 1

MURRAY, GROVER ELMER, JR., 1916- , see Durham, Clarence Orson, Jr., 1, 2

MURRAY, HAYDEN HERBERT, 1924- , see Bundy, Wayne Miley, 1

MYERS, CARL WESTON, 2d.

NAVA, DAVID FRAHAS, 1941- , see Moore, Carleton Bradley, 2

NEAL, WILLIAM PETRY, 1936-

NEATHERY, THORNTON LEE, 1931- , see Bentley, Robert Donald, 2

NEIHEISEL, JAMES, 1927-
1. Source and distribution of sediments at Brunswick Harbor [Glynn County] and vicinity: U.S. Army Coastal Engineering Res. Center Tech. Man. 12, 49 p., illus., 1965. Certain minerals, notably hornblende, are used as tracers to show that the bulk of the sediments involved in the shoaling of the harbor are from the Altamaha River rather than from the ocean.

2. Heavy minerals in coastal Georgia sediments, in Pleistocene and Holocene sediments, Sapelo Island [McIntosh County] and vicinity — Geol. Soc. America Southeastern Sec., Field Trip no. 1: Athens, Univ. Georgia Geology Dept., p. 64-66, 1966. The heavy-mineral suites of the coastal area support the stability-zone concept of Pettijohn. Hornblende is rare in the older sediments, as it is least stable. Variations in the abundance of the other minerals are due to various agents which affect deposition.

3. Addendum 2, Petrographic analysis of core from Effingham County, in Heavy-mineral-bearing sand of the coastal region of Georgia — Project Rept. no. 8, South Georgia Minerals Program: [Atlanta, Georgia Dept. Mines, Mining and Geology], p. 51-63, illus., 1967. A well 300 feet deep is logged, and the samples are described in detail. Heavy minerals are especially noted. Most of the heavy minerals are less than 100 feet deep.

4. (and Weaver, Charles Edward). Transport and deposition of clay minerals, southeastern United States: Jour. Sed. Petrology, v. 37, p. 1084-1116, illus., 1967. Percentages of kaolinite, montmorillonite, illite, and chlorite-vermiculite in many rivers and estuaries in Georgia are recorded. Piedmont rivers have different suites
than do Coastal Plain rivers because they have different sources. Marine deposition in harbors is also discussed.


NEWCOMB, LAWRENCE EDWARD, 1921-, see Callahan, Joseph Thomas, J

NICHOLSON, ALEXANDER, JR., 1921-1970.

NICHOLSON, GEORGE RICHARDSON, JR., 1946-, see Schreiber, Richard Walter, J

NICOLAY, H. H.
1. (and Stone, A. V.). Rocks and minerals, a guide to the collectors of the eastern United States: New York, Barnes and Company, 255 p., illus., 1967. This is a popular account of mineral-collecting localities. One chapter is given over to Georgia, and numerous localities, mostly in the Piedmont and Blue Ridge, are included.

NIKRAVESH, RASHEL, 1939-

NOAKES, JOHN EDWARD, 1930-
1. (and Kim, Stephen Moo, and Akers, Lawrence Keith). Oak Ridge Institute of Nuclear Studies radiocarbon dates I: Radiocarbon, v. 9, p. 309-315, 1967. Shells from a core 16 feet below mean low water are greater than 40,000 years old. They are in the Pleistocene Silver Bluff Formation on Sapelo Island, McIntosh County.

NORMAN, CARL EDGAR, 1931-

NORRIS, ROBERT MATHESON, 1921-

NORTH AMERICAN GEOLOGICAL MAP COMMITTEE

NUNAN, WALTER EDWARD, 1943-

NYQUIST, LAURENCE ELWOOD, 1939- , see also Begemann, Friedrich, 2
1. (and Begemann, Friedrich, and Huneke, John Clifton, and Signer, Peter). Short exposure ages of meteorites determined from the spallogenic 36Ar/38Ar ratios, in Meteorite research: Dordrecht, Holland, D. Reidel Pub. Co., p. 875-886, illus., 1969; discussion, p. 933. Data from the Pitts, Wilcox County meteorite show it to have been exposed to cosmic radiation for more than 5 million years.

OAKES, MALCOM CHRISTIE, 1890-

O'BRIEN, NEAL RAY, 1937-
1. (and Oriopp, Donald Easton). Correlation of kaolinite morphology and crystallinity: Illinois State Acad. Sci. Trans., v. 57, p. 84-87, illus., 1964. A kaolin from Twiggs County, and others from elsewhere, are analyzed to show that the hexagonal crystal shape is determined by some factor other than perfection of internal order.

OGREN, DAVID ERNEST, 1930-

OKLAHOMA GEOLOGICAL SURVEY


OLIVER, WILLIAM ALBERT, JR., 1926-
1. (and DeWitt, Wallace, Jr., and Dennison, John Manley, and Hoskins, Donald Martin, and Hud­dle, John Warfield). Devonian of the Appala­chian Basin, United States in International Symposium on the Devonian System, vol. 1: Calgary, Alberta Soc. Petroleum Geologists, p. 1001-1040, illus., 1967. The Devonian of northwestern Georgia has the Onesquethaw, Erian, and Upper Devonian Series present. They are shown on small-scale isopach and lithofacies maps. Paleontological data are included.

2. (and DeWitt, Wallace, Jr., and Dennison, John

OLSEN, EDWARD JOHN, 1927- , see Bunch, Theodore Eugene, 1; Horback, Henry, 1

OLSON, NORMAN KEITH, 1932-
1. (editor). Geology of the Miocene and Pliocene Series in the north Florida-south Georgia area — Atlantic Coastal Plain Geol. Soc. 7th Ann. Field Conf. and Southeastern Geol. Soc. 12th Ann. Field Trip: [Atlanta, Georgia Geol. Survey Guidebook 5], 94 p., illus., 1966. Surface exposures of Miocene and Pliocene rocks are described. The geology at each stop is described in detail. The field trip is 334 miles long and makes 8 stops, only one in Echols County, although the geology en route is described. The Miocene rocks contain phosphate.

2. Project Report no. 4, South Georgia Minerals Program [Phosphorite exploration in portions of Lowndes, Echols, Clinch, and Charlton Counties]: Atlanta, Georgia Dept. Mines, Mining and Geology, 113 p., illus., 1966. Numerous holes are logged, and the potential mineral resources, largely phosphate, are recorded. The occurrence of phosphorite is structurally controlled; analyses are included.

3. Addendum 1, Wells drilled by Southern Railway System in Charlton County, in Heavy-mineral-bearing sand of the coastal region of Georgia — Project Rept. no. 8, South Georgia Minerals Program: [Atlanta, Georgia Dept. Mines, Mining and Geology], p. 44-50, illus., 1967. Twelve holes on Trail Ridge are logged, and the heavy-mineral percentages are recorded. All of the holes are in surficial material to a depth of 75 feet.


5. Silica sand for glass production in a portion of the Atlantic Coastal Plain, in Proceedings [of the] Fifth forum on geology of industrial minerals: Pennsylvania Geol. Survey Bull. M 64, p. 3-22, illus., 1970. A review of sand sources from the Atlantic Coastal Plain includes much information about those in Georgia. Sand can be obtained from almost all of the sedimentary units, and a discussion of the various properties and economic factors is included.

O’NEILL, JAMES F.

ORLOPP, DONALD EASTON, 1935- , see O’Brien, Neal Ray, 1

OSTRANDE, CHARLES CORLISS, 1927-


3. (and Elston, Lewis William, and Husted, John Edwin, and Long, Leland Timothy, and Munoz, Maximo Fernando). Mineral exploration of the Allatoona Dam (Ga.) Quadrangle [Bartow and Cherokee Counties]: Atlanta, Georgia Inst. Tech. Eng. Exper. Sta., 36 p., illus., 1970. Various geophysical surveys are correlated to show that the technique can be used to delineate potential mineral resources, several of which are suggested in this survey. Heavy minerals have the best potential for development.

OVERSTREET, ELIZABETH FISCHER, 1915- , see Lang, Walter Barnes, 1; White, Walter Stanley, 2

OVERSTREET, WILLIAM COURTNEY, 1919-
1. The geologic occurrence of monazite: U.S. Geol. Survey Prof. Paper 530, viii, 327 p., illus., 1967. A complete description of the nature, occurrence, and origin of monazite includes much information from Georgia. It occurs in numerous localities as an accessory mineral in crystalline rocks, in the stream sediments, in the unconsolidated Coastal Plain sediments, and on the sea island beaches. Analyses are included.


3. (and Warr, Jesse James, Jr., and White, Amos McNairy). Thorium and uranium in detrital monazite from the Georgia Piedmont: Southeastern Geology, v. 10, p. 63-76, illus., 1969. Fifteen samples, from 8 localities, contain 3.3 to 6.1 percent ThO₂ and 0.13 to 0.67 percent
U₃O₈. The thorium is metamorphic-grade controlled, but the uranium is not. The original differences may have been in the source rocks.

OWENS, JAMES PATRICK, 1924-, see Reed, John Calvin, Jr., 1

PARK, RICHARD AVERY, 4th, 1938-

PATTERSON, SAM HUNTING, 1918-, see also Sever, Charles William, Jr., 8
1. Bauxite reserves and potential aluminum resources of the world: U.S. Geol. Survey Bull. 1228, vi, 170 p., illus., 1967. Bauxite occurs in Coastal Plain rocks as sedimentary deposits, and in northwestern Georgia as sinkhole-filling deposits. No new data are included—and the reserves are minimal.

PENNINGTON, KENNETH EUGENE, 1942-

see Schreiber, Richard Walter, 7

PEPIN, ROBERT OSBORNE, 1933-

PERKINS, HENRY FRANK, 1921- , see also Gibbs, James Allen, 1; Jinks, Douglas David, 2
1. (and Ritchie, Frank Telford, Jr.). Physical features of Georgia: Jour. Soil and Water Conservation, v. 23, no. 3, p. 97-100, illus., 1968. This is a very generalized review of the physiography of Georgia, and no new data are included.

PERSONS, BENJAMIN STEPHEN, 1923-
1. Laterite—genesis, location, use: New York, Plenum Press, 103 p., illus., 1970. This is a review of laterite from the engineering-geology point of view. Some examples and analyses are drawn from Georgia.

PETERSON, EDWARD CARLYLE, 1922-

PETERSON, HOWARD BOYD, 1912- , see Thorne, David Wynne, 1

PETRAFESO, FRANK A., 1931- , see Petty, Arley Jerry, 1

PETTY, ARLEY JERRY, 1923-

PEVEAR, DAVID RECKARD, 1940-
1. The estuarine formation of the United States Atlantic Coastal Plain phosphorite: Econ. Geology, v. 61, p. 251-256, illus., 1966; Univ. Georgia Marine Inst. Coll. Reprints, v. 5, 1966. Examples from estuaries in Georgia, primarily that of the Altamaha River, are used to show that organisms in the estuaries trap phosphorous entering the estuary from the river and from the sea, and so concentrate it.

2. (and Pilkey, Orrin Hendren). Phosphorite in Georgia continental shelf deposits: Geol. Soc. America Bull., v. 77, p. 849-858, illus., 1966; Univ. Georgia Marine Inst. Coll. Reprints, v. 5, 1966. Phosphorite sand grains average 1 percent of the sediments, and estuarine phosphorite-grains are distinctive from shelf grains. The phosphorite is probably detrital from Pleisto-
Phosphorite pebbles in the estuaries have come from the landward transport of phosphatic shelf sediments; the rivers are carrying none to the estuaries.


Engineering and related physical properties of the coastal salt-marsh in McIntosh County, Georgia: MS Thesis, Univ. Georgia, 56 p. and appendices, illus., 1970.

Stratigraphy, paleontology, and economic geology of portions of Perry and Cochran Quadrangles [Pulaski, Houston, Dooly, and Bleckley Counties] Georgia: MS Thesis, Univ. Tennessee, 89 p., illus., 1966; Georgia Geol. Survey Bull. 81, 67 p., illus. incl. geol. map, 1970. Eocene and Oligocene rocks are described; Neogene clastic debris overlies everything. Fossils are listed and the paleoecology is described. Iron, limestone, fuller's earth and sand are the mineral resources present, and analyses are included.


Airborne measurements of terrestrial radioactivity as an aid to geologic mapping: U.S. Geol. Survey Prof. Paper 516F, p. F1-F29, illus., 1968. A review of Aerial Radiological Measurement Surveys (ARMS) program includes summaries of the results of surveys around the Dawsonville, Dawson County, and the Sa-
vannah River plant below Augusta. The geology is very influential on the radioactivity.

PLUMMER, GAYTHER LYNN, 1925- , see Ritchie, Jerry Carlyle, 1
PLUNKETT, ERLE LEE, JR., 1942- , see Ramsport, Lawrence David, 4
PLUSQUELLEC, PAUL LLOYD, 1941-

POLAND, JOSEPH FAIRFIELD, 1908-
1. (and Davis, George Hamilton). Land subsidence due to withdrawal of fluids [Chatham County], in Reviews in engineering geology, vol. 2: Boulder, Geol. Soc. America, p. 187-269, illus., 1969. Land in the Savannah area has subsided by as much as 200 mm due to the compaction of the principal artesian aquifer because of a decline in the pressure from ground-water extraction.

POMEROY, LAWRENCE RICHARDS, 1925- , see also Reimold, Robert James, 1

POWER, WALTER ROBERT, JR., 1924- , see also Bentley, Robert Donald, 1

PRATHER, JESSE PRESTON, 1935-

PRATT, WALLACE EVERETT, 1885-

PRESIDENT, CHARLES DEAN, 1938-

PRICE, PAUL BUFORD, JR., 1932- , see Fleischer, Robert Louis, 1
PRICE, VANEATON, JR., 1942-

PRIOR, GEORGE THURLAND, 1862-1936.

RADCLIFFE, DENNIS, 1938- , see Bailey, Arthur Clay, Jr., 1; Humphrey, Ronald Crawley, 2; Prather, Jesse Preston, 1; Simmons, William Bruce, Jr., 2
RAGLAND, PAUL CLYDE, 1936- , see Butler, James Robert, 1
RAINWATER, EDWARD HARRIMAN, 1909-1972.
1. Miocene of the Gulf Coastal Plain of the United States of America, in Proceedings of the second West African micropaleontological colloquium: Leiden, Holland, E. J. Brill, p. 141-161, illus., 1966. The Miocene of the Georgia Coastal Plain is everywhere less than 500 feet thick. The lower part is sandy limestone and the upper part is mainly phosphatic sand and clay.
2. Resume of Jurassic to Recent sedimentation history of the Gulf of Mexico basin: Gulf Coast Assoc. Geol. Soc. Trans., v. 17, p. 179-210, illus., 1967. A very cursory review includes the Jurassic of the Georgia Coastal Plain. Small-scale maps are included.
3. Regional stratigraphy and petroleum potential of the Gulf Coast Lower Cretaceous: Gulf Coast Assoc. Geol. Soc. Trans., v. 20, p. 145-157, illus., 1970. Lower Cretaceous rocks occur in southwestern Georgia, where they are about 4000 feet thick. They lie in the "prospective belt" of petroleum potential. Little stratigraphic detail is included.
4. Stratigraphy and petroleum potential of peninsular Florida and southern Georgia; Gulf Coast Assoc. Geol. Soc. Trans., v. 20, p. 49-59, illus., 1970. A cursory review of the Cretaceous and Tertiary geological history, including tectonics, contains that of southern Georgia. Small-scale isopach maps are included. Lower Cretaceous
rocks have the greatest petroleum potential.

RAMSPOTT, LAurence DEWEY, 1934- , see also Crawford, Thomas Jones, 1


3. Tectonic origin of color in pink granites of the Elberton Batholith [Elbert and Putnam Counties], and the Columbia County adamellite. Zeolites are probably more widespread in Georgia than expected, but are obscured by weathering.


READE, ERNEST HERBERT, JR., 1936-


REED, EUGENE CLIFTON, 1901-


REED, JOHN CALVIN, JR., 1930-


REED, STEPHEN JARVIS BRENT, 1937-


REEL, DAVID ANDERSON, 1945- , see Griffin, George Melvin, Jr., 1

REESE, EDWARD JOSEPH, 1942- , see Schreiber, Richard Walter 6, 7

REEVES, JERRY LYNN, 1949- , see Schreiber, Richard Walter, 6

REIMOLD, ROBERT JAMES, 1941-


RESAGER, JON CHRISTIAN, 1948- , see Schreiber, Richard Walter, 4

REYNOLDS, JOHN HAMILTON, 1923- , see Pepin, Robert Osborne, 1

RICH, MARK, 1932-

RICHARDS, HORACE GARDINER, 1906-
1. The Atlantic Coastal Plain and the Appalachian Highlands in the Quaternary, in The Quaternary of the United States: Princeton, New Jersey, Princeton Univ. Press, p. 129-136, illus., 1965. A review of the terraces of the Atlantic Coastal Plain of Georgia is given; no new data are included.


3. Stratigraphy of the Atlantic Coastal Plain between Long Island and Georgia — a review: Am. Assoc. Petroleum Geologists Bull., v. 51, p. 2400-2429, illus., 1967. A generalized review of the rocks along the Atlantic Coast is followed by descriptions of the rocks in each state. Paleozoic to Pleistocene-aged rocks are present. The oil and gas exploration is also reviewed; Georgia is included.

4. Illustrated fossils of the Georgia Coastal Plain: Atlanta, Georgia Geol. Survey, 46 p., illus., [1969]. This is a reprinting and combining under one cover of the numerous articles on this subject by this author which appeared in the Georgia Mineral Newsletter. Fossils from the Cretaceous to Holocene are listed and many are illustrated. Localities for fossil collecting are included.

5. A review of the recent studies on the marine Pleistocene of the Atlantic Coastal Plain — New Jersey to Georgia: Gulf Coast Assoc. Geol. Soc. Trans., v. 19, p. 601-609, 1969. A cursory summary of recent work on the terrace deposits of Georgia is included. Those terraces which are above 100 feet are probably pre-Pleistocene in age.

6. Changes in shoreline during the past million years [Coastal Plain]: Am. Phil. Soc. Proc., v. 114, p. 198-204, 1970. A brief review of Quaternary shoreline studies includes a summary of those on Georgia's coast. Several are present, and two are of special interest — the Princess Anne at 13 feet elevation and the Silver Bluff at 45 feet.

RICHTER, DENNIS MAX, 1938- , see Pilkey, Orrin Hendren, 1
RIES, PAUL FRED, 1941- 

RIFE, DAVID LEROY, 1941- 

RISTOW, WALTER WILLIAM, 1908- 

ritchie, frank telford, jr., 1910- , see Perkins, Henry Frank, 1
ritchie, jerry carlyle, 1937- , see also Asmussen, Loris Elden, 1

1. (and Plummer, Gayther Lynn). Natural gamma radiation in northeast and east central Georgia: Georgia Acad. Sci. Bull., v. 27, p. 173-194, illus., 1969. Rocks and soils are shown to have identifiable gamma radiation from thorium, uranium, and potassium. These can be used in background-count studies. Monazite is possibly the main source.

ROBINSON, RHODA HAYDEN, 1921- , see Pakiser, Lewis Charles, Jr., 1

RODGERS, JOHN, 1914- , see also Fairley, William Merle, 3


ROSS, ARNOLD, 1936- 

ROWE, MARVIN WAYNE, 1937- 
1. (and Van Dilla, Marvin Albert, and Anderson, Ernest Carl). On the radioactivity of iron meteorites: Geochimica et Cosmochimica Acta, v. 27, p. 1003-1009, illus., 1963. The Pitts meteorite, from Wilcox County is included, but no detectable gamma radiation is present.

RUBIN, MEYER, 1924- , see Hanshaw, Bruce Busser, 1

SACHS, KELVIN NORMAN, JR., 1928- , see
2. (and Fouts, James Allen). An occurrence of cordierite-garnet gneiss in [Lincoln County] Georgia: Am. Mineralogist, v. 52, p. 1240-1243, illus., 1967. Cordierite-bearing biotite gneiss is described. Cordierite is uncommon in the Piedmont rocks otherwise. The cordierite occurs as ellipsoidal grains less than 0.5 mm and makes up 21 percent of the rock.

2. (and Fouts, James Allen). Specific cations in ground waters related to geologic formations in the Broad Quadrangle [Elbert and Wilkes Counties], Georgia: Georgia Geol. Survey Bull. 78, 34 p., illus. incl. geol. map, 1967. Water from 12 wells in various kinds of crystalline rocks is analyzed, and the data are shown in tables. The relations of the water chemistry to lithology, climate, and organic activity are shown.


4. Quartz-leached graphic-granite from Monticello [Jasper County], Georgia: Southeastern Geology, v. 10, p. 185-188, illus., 1969. The material occurs within one of the zoned pegmatites of the area. The residual feldspar is a dull, pale-pink, maximum microcline, and generally unaltered, but some microcline-void surfaces are coated with a thin layer of low albite and muscovite.

SANDERS, JOHN ESSINGTON, 1926-

1. (and Friedman, Gerald Manfred). Position of regional carbonate/noncarbonate boundary in nearshore sediments along a coast — possible climatic indicator: Geol. Soc. America Bull., v. 80, p. 1789-1796, illus., 1969. During the Miocene and Pliocene this boundary was in southern Georgia, and moving southward with time. Paleobotanical, paleobiological, and chemical evidence supports a climatic control of the boundary. Quaternary boundaries suggest that during the maximum Pleistocene submergence the climate was only slightly warmer than that of today.

SANDY, JOHN, JR., 1934- , see also Holland, Willis A., Jr., 1; Hurst, Vernon James, 1; Medlin, Jack Harold, 2

1. (and Carver, Robert Elliott) [and Crawford, Thomas Jones]. Stratigraphy and economic geology of the Coastal Plain of the Central Savannah River area, Georgia [Geol. Soc. America Southeastern Sec., Field Trip no. 3]: [Athens, Univ. Georgia, Geology Dept.], 80 p., illus., 1966. A trip of 292 miles begins in Athens, Clarke County, proceeds southeastward to Griffins Landing in Burke County, and returns to Athens via Jefferson, Glascock and Warren Counties. Five stops in Cretaceous and Eocene rocks are made, in which kaolin and stratigraphy are discussed.

2. (and Crawford, Thomas Jones). Geologic map, Glascock County, Georgia: Augusta, Central Savannah River Area Planning and Development Comm., and Athens, Univ. Georgia Geology Dept., scale, 1 inch to 1.6 miles, 1968.

3. Geologic map, Jenkins County, Georgia: Augusta, Central Savannah River Area Planning and Development Comm., and Athens, Univ. Georgia Geology Dept., scale, 1 inch to 1.6 miles, 1968.

4. Geologic map, Richmond County, Georgia: Augusta, Central Savannah River Area Planning and Development Comm., and Athens, Univ. Georgia Geology Dept., scale, 1 inch to 1.6 miles, 1968.

5. Geologic map, Screven County, Georgia: Augusta, Central Savannah River Area Planning and Development Comm., and Athens, Univ. Georgia Geology Dept., scale, 1 inch to 1.6 miles, 1968.

6. (and Holland, Willis A., Jr., and Crawford, Thomas Jones). Geologic map, Burke County, Georgia: Augusta, Central Savannah River Area Planning and Development Comm., and Athens, Univ. Georgia Geology Dept., scale, 1 inch to 1.6 miles, 1968.

SAUER, HERBERT IRVIN, 1910- , see Shacklette, Hansford Threlkeld, 1


SCHNEIDER, WILLIAM JOSEPH, 1921-

1. (and others). Water resources of the Appalachian region, Pennsylvania to Alabama: U.S. Geol. Survey Hydrol. Invs. Atlas HA 198, 11 sheets, scale, 1 inch to 7,000,000 inches, text, 1965. Most of the counties in northwestern Georgia are included. Maps dealing with geology, mineral resources, runoff patterns, sediment load in streams, ground-water availability, and a general description of the Appalachians are included. Brief texts are on each map.

SCHNETZLER, CHARLES CARTER, 1930- , see also Finnion, William Hamet, Jr., 1, 2

2. (and Pinson, William Hamet, Jr.). Variation of strontium isotopes in [Dodge County] tektites: Geochemica et Cosmochimica Acta, v. 28, p. 953-969, illus., 1964; in Variations in isotopic abundances of strontium, calcium and argon and related topics: Cambridge, Massachusetts Inst. Tech. Dept. Geology and Geophysics, p. 63-67, illus., 1965. Data from a tektite from near Empire, Dodge County, are included among much other from elsewhere. It has 74 ppm Rb and 170 ppm Sr. The slight variations of isotopic composition exhibited in all of the tektites suggest that if they are of terrestrial origin, they must be derived from a widespread, uniform source material.

SCHREIBER, RICHARD WALTER, 1943-

2. (and Holland, Walter Fox, Jr., and Sturrock, James Caffey). [Map of] Cemetery Pit [cave], Dade Co., Ga.: Georgia Underground, v. 6, no. 1, scale, 1 inch to 100 feet, 1968.


5. Ellison’s Cave [Walker County], Georgia’s finest: Georgia Underground, v. 6, p. 57-103, illus., 1969; correction, v. 7, p. 15, 1970. This is a semi-popular account of the largest cave in Georgia (over 8 miles of passage), and includes maps of portions of the cave as well as the total. There is a small amount of technical data included.


8. Origins of limestone caverns — phreatic and vadose concepts and their application to a selected field example [Walker County]: Speleotype, v. 4, p. 51-62, 1969. Ellison’s Cave, west of Lafayette, in Walker County, is described as an example of a cave having several origins — in the vadose and in the phreatic zones.

SCHULTZ, LUDOLF, 1937-
1. (and Hinterberger, Heinrich). Edelgasmessungen an Eisenmeteoriten [Putnam County]: Zeitschr. für Naturforsch., v. 22a, p. 773-779, illus., 1967. Spallogenic isotopes of helium, neon, and argon are reported from the Putnam County meteorite. Various ratios are investigated, and the relationships of the ratios to irradiation hardness are discussed.

SCHWARTZ, MAURICE LEO, 1925- , see Colquhouen, Donald John, 3

SCRUDATO, RONALD JOHN, 1940-


SENFITLE, FRANK EDWARD, 1921- , see Gilchrist, Jason, 1

SEVER, CHARLES WILLIAM, JR., 1931-
1. The Chattahoochee Anticline in Georgia: Georgia Mineral Newsletter, v. 17, p. 39-43, illus., 1964-1965. Evidence is presented to show that this large structure trends northeast-southwest rather than north-south, along the Chattahoochee River, as originally proposed. Evidence includes map patterns, oil seeps, groundwater peculiarities, and bounding faults.

2. Oil seeps along the Chattahoochee Anticline in [Coastal Plain] Georgia: Georgia Mineral Newsletter, v. 17, p. 43-45, illus., 1964-1965. Parallelism between oil-bearing springs in the Coastal Plain and Appalachian structures, and with the northeast-southwest trending Chattahoochee Anticline is noted. Some of the seeps are newly-reported.


of the area is given. Paleocene to Holocene rocks are present; a gentle flexure is also present. The hydrology of the various units is discussed, and ground-water analyses are included. Clay, limestone, sand and gravel are the chief mineral resources present.

5. Ground-water resources of Bainbridge [Decatur County] Georgia: Georgia Geol. Survey Inf. Circ. 32, 10 p., illus., 1965. Eocene formations, residuum, and Holocene materials are present. Ground water comes from limestone and sandstone aquifers. Analyses are included.

6. Miocene structural movements in Thomas County, Georgia, in Geological Survey research 1966: U.S. Geol. Survey Prof. Paper 550 C, p. C12-C16, illus., 1966. Folded Oligocene and Miocene rocks have been cut by at least one northeast-southwest trending fault. Small-scale structure-contour maps on the top of the Miocene Tampa Limestone and on the Oligocene Suwanee Limestone are used to show the differences.

7. Reconnaissance of the ground water and geology of Thomas County, Georgia: Georgia Geol. Survey Inf. Circ. 34, 13 p., illus., 1966. Eocene to Holocene rocks are described. The principle aquifers are limestones. Subsurface structures are detected, and water analyses are included.

8. (and Cathcart, James Batchelder, and Patterson, Sam Hunting). Phosphate deposits of southwestern Georgia and north-central peninsular Florida — South Georgia Minerals Program, Proj. Rept. 7: Atlanta, Georgia Inst. Tech. and Dept. Mines, Mining and Geology, 62 p., illus., 1967. Phosphate-pebble-bearing sand of Miocene age is discussed as is a general description of the stratigraphy and structure of the southern tier of counties in the Georgia Coastal Plain. A structural control of the phosphate deposits is proposed.

9. (and Herrick, Stephen Marion). Tertiary stratigraphy and geohydrology in [Grady County] southwestern Georgia, in Geological Survey research 1967: U.S. Geol. Survey Prof. Paper 575 B, p. B 50-B 53, illus., 1967. The Oligocene Marianna Limestone is recognized in a well near Cairo, Grady County; the rocks above these, previously considered Eocene, are more likely Oligocene. The dolomitic character of the rocks produces inferior-quality water. The Oligocene is at least 494 feet thick here.

10. Hydraulics of aquifers at Alapaha [Berrien County], Coolidge [Thomas County], Fitzgerald [Ben Hill County], Montezuma [Macon County], and Thomasville [Thomas County], Georgia: Georgia Geol. Survey Inf. Circ. 36, 16 p., illus., 1969. Eocene to Miocene lime-
stones are examined for transmissibility; all vary considerably. Analyses are included. Geophysical logs of the wells are given, but no geologic interpretations are made.

SHACKLETTE, HANSFORD THRELKELD, 1914-1. (and Sauer, Herbert Irvin, and Miesch, Alfred Thomas). Geochemical environments and cardiovascular mortality rates in Georgia: U.S. Geol. Survey Prof. Paper 574 C, p. C1-C39, illus., 1970. Georgia is used as an example to show the chemical elements in the soils and plants from numerous counties in the Blue Ridge and Coastal Plain which have contrasting rates for heart-and blood-vessel diseases. If the trace elements are the origin of the differences, deficiency rather than excess would be the cause.

SHEFFEY, NOLA BEWLEY, 1929- , see Zubovic, Peter, 1

SHERIDAN, EUGENE TITUS, 1917- , see DeCarlo, Joseph Anthony, 1

SHORT, JAMES M., see Goldstein, Joseph Irwin, 2


SIGNER, PETER, 1929- , see Begemann, Friedrich, 2; Nyquist, Laurence Eliwood, 1


2. Geology and ground water of the Savannah River Plant and vicinity, South Carolina: U.S. Geol. Survey Water-Supply Paper 1841, vi, 113 p., illus., 1967. A complete geologic descrip-
tion of the area is given and includes a small bit of information about Burke and Richmond Counties. Basement (Precambrian?), Triassic, and Cretaceous to Holocene rocks are described, and the water-bearing properties of each are discussed. The Tuscaloosa Formation (Cretaceous) is the best aquifer in the area.

SMALES, ALBERT ARTHUR, 1916-
1. Mineral appraisal of Okefenokee National Wildlife Refuge [Charlton, Clinch, and Ware Counties] Georgia: U.S. Geol. Survey [Repts. Open File, no. 893], 17 p., illus., 1967. A cursory review of the mineral resources (actual and potential) includes a generalized description the geology of the area. Oil and gas, heavy minerals, peat, and phosphate deposits are described.

2. Summary report on the geology and mineral resources of the Okefenokee National Wildlife Refuge [Charlton, Clinch, and Ware Counties]: U.S. Geol. Survey Bull. 1260-N, p. N1-N10, illus., 1968. A cursory review of the geology of the refuge is given; no minerals are being, or have been taken from the area, although phosphate is the most likely commercial-mineral resource.

SMITH, ALLYN GOODWIN, 1893-

SOLOMON, ARTHUR ABRAHAM, 1921-

SOHL, NORMAN FREDERICK, 1924- , see Smith, Allyn Goodwin, 1

SPALVINS, KARLIS, 1942- , see also Smith, James William, 1


2. Stratigraphy of the Conasauga Group in the vicinity of Adairsville [Bartow County], Georgia: MS Thesis, Emory Univ., 62 p., illus. incl. geol. map, 1967; in Precambrian-Paleozoic Appalachian problems: Georgia Geol. Survey Bull. 80, p. 37-55, illus. incl. geol. map, 1969. Two limestone and one shale formation are identified and mapped. They occur in an overturned anticline with a reverse fault at the southern end. Cement, stone, and clay are the potential mineral-resources.

SPENCER, EDGAR WINSTON, 1931-

STADNICHENKO, TAISIA MAXIMOVNA, 1894-1958, see Zubovic, Peter, 1

STAFFORD, ELIZABETH ANN, 1940- , see Schreiber, Richard Walter, 3, 4

STANLEY, EDWARD ALEXANDER, 1929-

STEARNS, RICHARD GORDON, 1927-

STEELE, FORREST, 1908- , see Colquhoun, Donald John, 1

STEPHENSON, RICHARD ALLEN, 1931-

STEVENSON, ANNE LOUISE, 1942- , see Benninghoff, William Shiffer, 1

STEVENSON, FRANK JAY, 1922-

STOCKARD, HENRY PATTON, 1924- , see Drake, Charles Lum, 1; Reed, John Calvin, Jr., 1

STONE, A. V., see Nicolay, H. H., 1

STONE, JEROME, 1923- , see Overstreet, William Courtney, 2

STOREY, JAMES WELBORN, 1935-


STRALEY, HARRISON WILSON, 3d, 1906-

2. Possible south-westward continuation of the Cabot Fault: Nature, v. 206, p. 179-180, illus., 1965. A map shows suggestions that the Cabot Fault of New England may continue southwestward (1) into Georgia at Gainesville, Hall County, (2) into Georgia near Greensboro, Greene County, where it is called the Talladega Fault, or is parallel with the Goat Rock Fault, or (3) it may enter the Georgia Coastal Plain from the Atlantic Ocean as a reflection of the Shaler Line.

STRINGFIELD, VICTOR TIMOTHY, 1902- , see also LeGrand, Harry Elwood, 1

1. Artesian water in Tertiary limestone in the southeastern [United] States: U.S. Geol. Survey Prof. Paper 517, vii, 226 p., illus., 1966. A description of the origin and occurrences of artesian water includes many illustrations from Georgia. The water-bearing properties of each of the aquifers, mostly limestones, are discussed. Structures and salt-water encroachment are also mentioned. Analyses of the water are included.

2. (and LeGrand, Harry Elwood). Hydrology of limestone terranes in the Coastal Plain of the southeastern United States: Geol. Soc. America
Spec. Paper 93, 43 p., illus., 1966. This is a complete, detailed study of the nature of ground water when it occurs in limestone. Much of the information comes from Georgia.

STULL, RAY THOMAS, 1875-1944.

STURROCK, JAMES CAFFEY, 1945- , see Schreiber, Richard Walter, 2

SWANSON, DAVID EUGENE, 1943-
1. Preliminary report on industrial water supply potential — northwestern Ben Hill County: Atlanta, Georgia Dept. Mines and Geology, [6 p.] illus., 1970. Eocene and Oligocene limestones are the potential sources of ground water. A theoretical well, 200 feet deep, is logged, and it penetrates to the Eocene where abundant water is available.

SWEENY, JOHN WALTER, 1933-
1. (and Hasslacher, Robert Neil). The phosphate industry in the southeastern United States and its relationship to world mineral fertilizer demand: U.S. Bur. Mines Inf. Circ. 8459, 76 p., illus., 1970. Very brief mention is made of the phosphate occurrences in Georgia, of which at present there is no commercial production. It occurs in the southern tier of counties in the Coastal Plain, in Miocene rocks.

SYERS, JOHN KEITH, 1939- , see Dolcater, David Lee, 1

TALENT, JOHN ALFRED, 1932- , see Boucot, Arthur James, 2

TAN, LI-PING, 1938-
1. Geochemical study of soil and gossan and their significance in copper exploration in the southern Appalachians: Acta Geol. Taiwanica, no. 12, p. 21-33, illus., 1968. A traverse in Paulding County, near the Little Bob pyrite mine, compares the trace elements in the soil and in the ores to see if such exploration techniques are practical. Comparisons are made with traverses in the Tallapoosa Mine area, Haralson County, and with traverses in the Villa Rica Mine area in Carroll County. Certain trace elements can be used as prospecting guides.

TANNER, JAMES THOMAS, 1939-

TANNER, WILLIAM FRANCIS, JR., 1917-
1. Marine terraces — pre Pleistocene?: Southeastern Geology, v. 6, p. 219-222, illus., 1965. Known terraces, those of Georgia implied, can be plotted with coordinates in time and elevation. Sea level has been steadily dropping since the Oligocene, and Pleistocene fluctuations have not caused any of the features.

2. Late Cenozoic history and coastal morphology of the Appalachea River region, western Florida [and southwestern Georgia], in Deltas in their geologic framework: Houston, Houston Geol. Soc., p. 83-97, illus., 1966. The river during the Miocene was depositing material in southwestern Georgia in the South Georgia Graben. Post-Miocene uplift has resulted in terraces.


TAYLOR, HUGH PETTINGILL, JR., 1932- , see also Epstein, Samuel, 1

1. (and Epstein, Samuel). Relationship between $O^{18}/O^{16}$ ratios in coexisting minerals of igneous and metamorphic rocks — Part 1, Principles and experimental results: Geol. Soc. America Bull., v. 73, p. 461-480, illus., 1962. In a discussion of a technique designed to show the effectiveness of this method in geothermometry, the Elberton Granite, from Elbert County, is used, with many others from elsewhere. The oxygen isotope ratios in five different minerals are calculated, and vary from 1 to 5 parts per thousand.


TAYLOR, PATRICK TIMOTHY, 1938- , see also Zietz, Isidore, 1

1. (and Zietz, Isidore, and Dennis, Leonard S.). Geologic implications of aeromagnetic data for the eastern continental margin of the United
States: Geophysics, v. 33, p. 755-780, illus., 1968. The eastern part of the Georgia Coastal Plain is included. A pronounced magnetic high crosses into Georgia from the sea near Brunswick, and may result from an intrusive body. The magnetic data suggest that southern Georgia [and Florida] were added to the continent in pre-Paleozoic time.

TEDRICK, PATRICIA ANN, 1938- , see Griffin, George Melvin, Jr., 1

TEXTORIS, DANIEL ANDREW, 1936-


THEOBALD, PAUL KELLOGG, JR., 1928- , see Overstreet, William Courtney, 2

THOM, BRUCE GRAHAM, see Gagliano, Sherlock Moneer, 1

THOMAS, ADRIAN WESLEY, 1939- , see Asmussen, Loris Elden, 2

THOMPSON, RAYMOND MELVIN, 1918- , see Lang, Walter Barnes, 1

THORNBURY, WILLIAM DAVID, 1900-

1. Regional geomorphology of the United States: New York, John Wiley and Sons, 609 p., illus., 1965. Each of the various physiographic provinces is described geomorphologically and geologically. Those in Georgia are included.

THORNE, DAVID WYNNE, 1908-

1. (and Peterson, Howard Boyd). Salinity in United States waters, in Agriculture and the quality of our environment: Washington, D.C., Am. Assoc. Advancement of Science Pub. 85, p. 221-240, illus., 1967. Small-scale maps show that Georgians use a relatively small amount of ground water, and that the depth to the saline water is more than 1000 feet.

THORPE, ARTHUR NATHANIEL, 1933- , see Gilchrist, Jason, 1

TILLES, DAVID, 1933-1968, see Fireman, Edward Leonard, 1

TILTON, GEORGE ROBERT, 1923-


TIWARI, SURESH CHANDRA, 1932-


TOLER, LARRY GENE, 1931-

1. The relation between chemical quality and water discharge in Spring Creek, southwestern Georgia, in Geological Survey research 1965: U.S. Geol. Survey Prof. Paper 525C, p. C209-C213, illus., 1965. During the falling-water stage, the water chemistry is affected greatly by groundwater input as a result of the close connection between the aquifer and the surface streams.

TOULMIN, LYMAN DORGAN, JR., 1904-

1. Paleocene and Eocene guide fossils of the eastern Gulf Coast region: Gulf Coast Assoc. Geol. Soc. Trans., v. 19, p. 465-487, illus., 1969. A description of mollusks and irregular echinoids as guide fossils is given. The most useful have been used for naming 16 assemblage and range zones in the Paleocene and Eocene Series.

TOWE, KENNETH MC CARN, 1935-


TRIMBLE, STANLEY WAYNE, 1940-

1. The Alcovy River swamps — the result of culturally accelerated sedimentation: Georgia Acad. Sci. Bull., v. 28, p. 131-141, illus., 1970. Historical records are called upon to show that the swamps and floodplain of the Alcovy River in Gwinnett, Newton, and Walton Counties were formed after the land was settled. Increased sedimentation due to cultivation is cited as the reason.


TUREKIAN, KARL KAREKIN, 1927-


TYRRELL, MILES EDWARD, 1914-1975, see Hollenbeck, Ronald Parker, 1

UCHUPI, ELEAZAR, 1928-


U.S. ARMY CORPS OF ENGINEERS.

1. Geologic [evaluation], part 10 of Curry Creek Reservoir project [Jackson County], Chapter 7 of Report for development of water resources in Appalachia [vol. 7]: Cincinnati, U.S. Army
2. Geologic [evaluation], part 11 of Dalton Reservoir project, Chapter 8 of part 3 of Report for development of water resources in Appalachia [vol. 8]: Cincinnati, U.S. Army Corps of Engineers, Office of Appalachia Studies, p. III8-75-79, illus., 1969. Cores and other geologic data for the Dalton Reservoir damsite in Whitley County are evaluated and show that the area is one of the best by a damsite.

3. The region today [Appalachia], Sec. 1 of Region E [northern Georgia], Chapter 9 of Part 2 of Development of water resources in Appalachia [vol. 4]: Cincinnati, U.S. Army Corps of Engineers, Office of Appalachia Studies, p. III9-2-18, illus., 1969. A generalized survey of the geology of northern Georgia is given in preparation for more detailed aspects in other volumes. A brief summary of the mineral resources is also included.

U.S. BUREAU OF MINES, see also U.S. Geological Survey, 1


2. Mineral industry — resources and water requirements, Appendix I of Development of water resources in Appalachia [vol. 24]: Cincinnati, U.S. Army Corps of Engineers, 408 p., illus. [1969]. A review of the mineral resources of “Appalachia” include those in the Piedmont and Blue Ridge of Georgia, and in parts of northwestern Georgia. Little detail is included, however.

U.S. COAST AND GEODE蒂CAL SURVE\Y, see also U.S. Geological Survey, 5


U.S. GEOLOGICAL SURVEY, see also American Association of Petroleum Geologists, 1

1. (and U.S. Bureau of Mines). Mineral resources of the Appalachian region: U.S. Geol. Survey Prof. Paper 580, xvi, 492 p., illus., 1968. The counties of northern and northwestern Georgia are included. A review and discussion of mineral resources, past, present, and future, are included. Many of the resources are from Georgia.


inch to 7,500,000 inches, p. 186-187, 1970.


VALLEY, JAMES LEO, 1904- , see Kerr, James R., 1

VAN DILLA, MARVIN ALVERT, 1919- , see Rowe, Marvin Wayne, 1

VICKERS, MICHAEL ALAN, 1943-

VILCSEK, ELSA, 1926- , see Begemann, Friedrich, 1, 2

VON HAKE, CARL ALOYSIUS, 1930-
1. (and Cloud, William Kendric). United States earthquakes, 1964: Washington, D.C., U.S. Coast and Geodetic Survey, 91 p., illus., 1966. There were two earthquake epicenters in Georgia during 1964. Both had intensities of V; one was near Lyerly, Chattooga County, and the other near Haddock, Jones County.

VOORHEIS, MICHAEL REGINALD, 1941-

VORHIS, ROBERT CARSON, 1917-
1. Earthquake magnitudes from hydroseismic data [Dawson and Dougherty Counties]: Ground Water, v. 3, no. 1, p. 12-20, illus., 1965. Examples from water wells in Dawson and Dougherty Counties are used to show how water-well records, which show seismic waves, can be used to calculate earthquake magnitudes.


VOSHAGE, HANS, 1929-
1. Cosmic-ray exposure ages and origin of iron meteorites, in Radioactive dating and methods of low-level counting: Vienna, Internatl. Atomic Energy Agency, p. 281-293, illus., 1967; discussions, p. 293-295. Cosmic-ray exposure times by the K\(^{41}/K\(^{40}\) method are determined for Putnam County (410 X 10^6) and Smithonia, Oglethorpe County (90 X 10^6 years).

WADE, KOJI, 1928-
1. Intercalation of water in kaolin minerals: Am. Mineralogist, v. 50, p. 924-941, illus., 1965. Kaolin from the Birch Pit, Bibb County, along with others from elsewhere are examined. Kaolin forms a partial complex with water after KCH\(^3\)COO has been injected. There is a structural control over the intercalation phenomena.


WAENKE, HEINRICH, 1928- , see Chang, Chan-ting, 1

WAHL, FLOYD MICHAEL, 1931- , see Grim, Ralph Early, 1

WAIT, ROBERT LYLE, 1923- , see also Herrick, Stephen Marion, 2

1. Geology and occurrence of fresh and brackish ground water in Glynn County, Georgia: U.S. Geol. Survey Water-Supply Paper 1613 E, p. E1-E94, illus., 1965. Eocene to Holocene rocks are described, with emphasis placed upon their water-bearing properties. Quality and volumes of water are shown in graphs and charts. Analyses of the waters are included. The brackish water is connate water.

2. (and Callahan, Joseph Thomas). Relations of fresh and salty ground water along the southeastern United States Atlantic coast: Ground Water, v. 3, no. 4, p. 3-17, illus., 1965. Salty connate water in the Savannah area is shown to be from the lower part of the Ocala Limestone. Connate water also occurs in the Middle Eocene rocks at Brunswick, Glynn County. It is not seawater invading the freshwater aquifer.

D38-D41, illus., 1968. Cypress stumps from river terraces indicate submergence. Some are 9 to 17 feet below sea level and have been dated by radiocarbon at 3670 BP. Younger stumps, 3 feet below sea level, are 2780 years BP. Cypress are fresh-water trees.


WALKER, FORREST EUGENE, 1924-

WALKER, ROBERT MOWBRAY, 1929- , see Fleischer, Robert Louis, 1

WALL, WILLIAM JEPHTA, 1904-

WAMPLER, JESSE MARION, 1936- , see also Smith, James William, 4
1. (and Smith, David Huston, and Cameron, Angus Ewan). Isotopic comparison of lead in tektites with lead in earth materials: Geochimica et Cosmochimica Acta, v. 33, p. 1045-1055, illus., 1969. Georgia tektites from an unspecified locality are included. The Georgia tektites have a lead-isotope content the same as bediasites, and are similar to others.

WANLESS, HAROLD ROLLIN, 1899-1970.

WARR, JESSE JAMES, JR., 1921- , see Over-
present which show a glacial climate. In the postglacial sediments, Coastal-Plain vegetation can be found.

WEAVER, CHARLES EDWARD, 1925- , see also Lutif, Numan A. R. Abdul, 1; Neiheisel, James, 4, 5

1. Electron microprobe study of kaolin: Clays and Clay Minerals, v. 16, p. 187-189, illus., 1968. Georgia kaolins are analyzed to show that iron is evenly distributed and must be in the structure of the kaolin or as small particles absorbed on the surface. Other contaminant elements are not uniformly distributed.

WEEKS, ROBERT ALDEN, 1918-  

WEIGAND, PETER WOOLSON, 1943-  

WEIMER, ROBERT JAY, 1926- , see also Hoyt, John Harger, 2, 5, 17


WELCH, STEWART WILLIAM, 1928- , see Browning, William Fleming, Jr., 1

WEST, CLIFFORD BATES , see Hoyt, John Harger, 11

WETHERILL, GEORGE WEST, 1925- , see Kaushal, Sushil Kumar, 1

WETMORE, ALEXANDER, 1886-  
1. Pleistocene aves from Ladds [Bartow County] Georgia: Georgia Acad. Sci. Bull., v. 25, p. 151-153, illus., 1967. Fragments of at least four species of birds are discussed. They are from Pleistocene fissure-filling deposits at Ladds Mountain Quarry, and are the first recorded occurrence of Pleistocene birds from between Virginia and Florida.


WHITE, AMOS MC NAIRY, 1921- , see Over-

WILSON, ROBERT LAKE, 1924- 

WOELFLE, ROBERT, 1925- , see Herpers, Ulrich, 1

1. Alte Strandlinien des Pleistozaens in Nordamerika und Europe: Eiszeitalter und Gegenwart, v. 11, p. 12-19, illus., 1960. Four terraces on the Atlantic (and Georgia) coastline are recognized and described, with a view toward comparing them with the terraces of Europe. The lower two are of Sangamon Interglacial Stade, and the upper two are older but of uncertain age.

WOOLLARD, GEORGE PRIOR, 1908- 
1. Regional isostatic relations in the United States, in The earth beneath the continents: Am. Geophysical Union Mon. 10, p. 557-594, illus., 1966. Small-scale maps of the United States, and numerous cross sections, show gravity anomalies and the interpretations; those in Georgia are included. The Coastal Plain of Georgia is in a gravity-identified basin.

2. A catalog of earthquakes in the United States prior to 1925...: Hawaii Inst. Geophysics Data Rept. 10, unpaged, 1968. The data are in tables. There have been 23 earthquakes recorded from Georgia, though not all had epicenters there. One of intensity VIII is the greatest.


WOOLSEY, JAMES ROBERT, JR., 1936 , see Levy, John Sanford, 4

WRIGHT, NANCY ELIN PECK, 1941- 


WRIGHT, WILNA BROWN, 1928- , see Carr, Martha Ensign Strait, 1

WYRICK, GRANVILLE GLENN, 1924- 
1. Ground-water resources of the Appalachian region: U.S. Geol. Survey Hydrol. Invs. Atlas HA 295, 4 sheets, scale, 1 inch to 50 miles, incl. text, 1968. Northwestern Georgia is included in Appalachia. The maps include those showing ground-water discharge, geologic features for water, general geology, and maximum yield of wells. A brief text accompanies each map.

2. (and Lloyd, Orville Bruce, Jr.). Ground-water resources, Appendix H of Development of water resources in Appalachia, vol. 23: Cincinnati, U.S. Army Corps of Engineers, Office of Appalachia Studies, p. H 1-H 122, illus. incl. geol. map, 1968 [1969]. A survey of the geology of all of “Appalachia” includes that of northwestern Georgia, and much of the Piedmont and Blue Ridge. A brief review of the ground-water resources is included. Small-scale maps show the various aspects of ground-water occurrence, and the Dalton area in Whitfield County is cited as an example.

YAMADA, HIROSHI, 1943- , see Wada, Koji, 2

YARBOROUGH, MARTIN, 1941- 

YEDLIN, NEAL L., 1908- 

YOCHELSON, ELLIS LEON, 1928- , see also Smith, Allyn Goodwin, 1


YOUNG, DAVID ANDERSON, 1947- , see Schreiber, Richard Walter, 1

YOUNG, DAVID MARTIN, 1941- 

1. K-Ar measurements of tektites, in Radioactive dating: Vienna, Internatl. Atomic Energy Agency, p. 289-302, 1963; discussions, p. 303-305. Two tektites from an unidentified locality in Georgia are 33.9 and 35.0 million years old, and are part of an age grouping of many of the others from North America.


ZIEHL, JUNE CULP

1. Georgia, Chapter 11 in Appalachian mineral and gem trails: San Fransisco, Lapidary Journal, p. 109-118, illus., 1968. Popular accounts are given of various localities in the state where in one can find different minerals. Most of the localities are in the Piedmont and Blue Ridge, and sketch maps for some are included.

ZIETZ, ISIDORE, 1919- , see also Higgins, Michael Wicker, 4; Taylor, Patrick Timothy, 1


2. Eastern continental margin of the United States, part 1 — a magnetic study, in New concepts of sea floor evolution, vol. 4, part 2, of The Sea: New York, Wiley Interscience, p. 293-310, illus., 1970. A small-scale aeromagnetic map of the east coast includes most of Georgia. It shows a distinct magnetic low anomaly paral-
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Chatham Co., eastern: Furlow, J. W., 2
Decatur Co.: Sever, C. W., 4
Dodge Co.: King, E. A., Jr., 1
Dooly Co., Perry Quad.: Pickering, S. M., Jr., 1
Georgia-Coastal Plain, south central, structure: Vorhis, R. C., 6
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OPAL, see also Mineral collecting
Georgia-Coastal Plain, Tertiary: Carver, R. E., 5

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Bartow Co.: White, W. S., 2
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Georgia-Coastal Plain: Berdan, J. M., 1
Georgia-Northwestern: Hegenroder, J. D., 1, 2
bentonite: Martin, B. F., 1
Chickamauga Supergroup: Millic, R. C., 2
Knox Dolomite: Textor, D. A., 1
Trenton rocks: Lyons, P. L., 2
Polk Co.: Cressler, C. W., 1; White, W. S., 2
Walker Co., Chickamauga Supergroup: Millic, R. C., 1

OSTRACODA, see also Invertebrata
Cenozoic, Georgia-Coastal Plain: Plusquellec, P. L., 1
Cretaceous
Clay Co.: Crane, M. J., 1
Echols Co.: Hazel, J. E., 2
Stewart Co.: Crane, M. J., 1
Eocene, Burke Co.: Hazel, J. E., 1
Paleocene, Clayton Fm., Macon Co.: Ogren, D. E., 1
Quaternary, McIntosh Co.: Darby, D. G., 1; Hall, D. D., 1

PALEOBOTANY, see also Algae, and Palynology
Devonian, Early Co., cores: McLaughlin, R. E., 1
Pennsylvanian, Dade Co.: White, C. D., 1
Tertiary, Georgia: Braun, E. L., 1

PALEOCENE EPOCH, see also Cenozoic Era, and Tertiary Period
Decatur Co.: Sever, C. W., Jr., 4
Dooly Co.: Zapp, A. D., 2
Georgia-Coastal Plain
guide fossils: Toulmin, L. D., Jr., 1
southern: Chen, C. S., 1
Grady Co.: Sever, C. W., Jr., 4
Macon Co.: Zapp, A. D., 2
Quitman Co.: Zapp, A. D., 2
Springvale Bauxite Dist.: Clark, L. D., 1
Randolph Co., Springvale Bauxite Dist.: Clark, L. D., 1
Seminoel Co.: Sever, C. W., Jr., 4
Stewart Co.: Zapp, A. D., 2
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Georgia, Tertiary: Dorf, E., 1
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Bryozoa, Tertiary: Cheatham, A. H., 1
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PALEONTOLOGY, see also individual types of fossils
Georgia, reference collection: Green, M. A., 1
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Anceocephaly, Bartow Co.: Willoughby, R. H., 1
byolithid, Floyd Co.: Engelbright, S. C., 1
Cenozoic
Bryozoa, Georgia-Coastal Plain: Greeley, R., 1
Invertebrata, Georgia-Coastal Plain: Richards, H. G., 4
Ostracoda, Georgia-Coastal Plain: Plusquellec, P. L., 1
Pelecypoda, Georgia-Coastal Plain: Park, R. A., 4th, 1
Cretaceous
Amphineura, Quitman Co.: Smith, A. G., 1
Foraminifera, Georgia-Coastal Plain: Mello, J. F., 1
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Invertebrata
Clay Co., Providence Sand: Halsey, W. M., 1
Georgia-Coastal Plain: Richards, H. G., 4; Vickers, M. A., 1
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Clay Co.: Crane, M. J., 1
Echols Co.: Hazel, J. E., 2
Stewart Co.: Crane, M. J., 1
Pelecypoda, Stewart Co.: Leman, A., 1
evolution rates: Leman, A., 2
Pisces, Stewart Co.: Frizzell, D. L., 1
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Brachipoda, Georgia-Northwestern: Boucot, A. J., 2
Conodontimorphs, Catoosa Co.: Mitchel, J. L., 1
Invertebrata, Floyd Co.: Nunn, W. E., 1
plants, Early Co., cores: McLaughlin, R. E., 1
Eocene
Algae, Screven Co.: Bond, T. A., 1
Arthropoda, barnacles, Burke Co.: Ross, A., 1
Bryozoa, Georgia-Coastal Plain: Greeley, R., 2
Echinoderm
Georgia-Coastal Plain: Kier, P. M., 1; Pickering, S. M., Jr., 2
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guide fossils, Georgia Coastal Plain: Toulmin, L. D., Jr., 1
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Bleckley Co.: Pickering, S. M., Jr., 1
Dooly Co., Pickering, S. M., Jr., 1
Houston Co.: Pickering, S. M., Jr., 1
Pulaski Co.: Pickering, S. M., Jr., 1
Screven Co.: Bond, T. A., 1
Mammalia, Twigg Co., sea cow: Voorhees, M. R., 1
Mollusca, Georgia-Coastal Plain, catalog: Palmer, K. E. H. V. W., 1
Ostracoda, Burke Co.: Hazel, J. E., 1
palynomorphs. Bartow Co.: Stanley, E. A., 1
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metamorphic rocks, Tate Quad.: Fairley, W. M., 1

Structural geology
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Bartow Co., ponds, pollen: Watts, W. A., 1
Chariton Co.: Olson, N. K., 3
Okefenokee Swamp: Bond, T. A., 2
Chatham Co., sedimentation: Henry, V. J., Jr., 1
Georgia-Coastal Plain: Herrick, S. M., 3; Hoyt, J. H., 20; Richards, H. G., 5, 6
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Clinch Co.: Olson, N. K., 2
Echols Co.: Olson, N. K., 2
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southern: Olson, N. K., 1
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POLK COUNTY, see also Georgia, and Georgia-Northwestern, and Georgia-Piedmont
Areas described
Polk Co.: Cressler, C. W., 1
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Geomorphology
White River Cave: Warren, F. T., 1
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Cambrian-Ordovician: White, W. S., 2
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PRECAMBRIAN
Burke Co., Savannah River Plant area: Siple, G. E., 2
Georgia-Blue Ridge: King, P. B., 5
Highlands-Cashiers area: McKnight, J. M., 1
Georgia-Coastal Plain, basement: Bass, M. N., 1
Georgia-Piedmont: King, P. B., 5
Brevard Zone: Hatcher, R. D., Jr., 1
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Richmond Co., Savannah River Plant area: Siple, G. E., 2
Rockdale Co.: McCollum, M. J., 1

PULASKI COUNTY, see also Georgia, and Georgia-Coastal Plain
Areas described
Cochran-Perry Quads.: Pickering, S. M., Jr., 1

Economic geology
mineral resources: Pickering, S. M., Jr., 1
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Geophysical investigations
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geological, Cochran-Perry Quads.: Pickering, S. M., Jr., 1

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Bryozoa, Oligocene: Cheatham, A. H., 2
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Eocene-Oligocene, Cochran-Perry Quads.: Pickering, S. M., Jr., 1
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PUTNAM COUNTY, see also Georgia, and Georgia-Piedmont
Areas described
Presley’s Mill area: Myers, C. W., 1

Economic geology
mineral resources, Presley’s Mill area: Myers, C. W., 1
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geological, Presley’s Mill area: Myers, C. W., 1

Meteorites
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gallium and germanium content: Wason, J. T., 1
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QUARTZ, see also Sand and Gravel, and Mineral resources
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QUARTZITE, see also Metamorphic rocks, and Mineral resources, and Stone
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QUATERNARY PERIOD, see also Cenozoic Era, and Pleistocene Epoch
Baldwin Co.: Lang, W. B., 1
Burke Co., Savannah River Plant area: Siple, G. E., 2
Chariton Co.: Olson, N. K., 2
Okefenokee Swamp, radioactive age: Bond, T. A., 3
Chatham Co., eastern: Furlow, J. W., 2
Clinch Co.: Olson, N. K., 2
Echols Co.: Olson, N. K., 2
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QUITMAN COUNTY, see also Georgia, and Georgia-Coastal Plain
Economic geology:
- bauxite: Clark, L. D., 1; Zapp, A. D., 2
- iron: O'Neill, J. F., 1
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- economic, bauxite: Zapp, A. D., 2
- geologic, Springvale Bauxite Dist.: Clark, L. D., 1
Paleontology:
- Amphipoda, Cretaceous: Smith, A. G., 1
- Cretaceous fauna, Providence Sand: Hisey, W. M., 1
Stratigraphy:
- Paleocene-Eocene: Clark, L. D., 1

RABUN COUNTY, see also Georgia, and Georgia-Blue Ridge
Areas described:
- Rabun Bald area: Giles, R. T., 2
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- Geological, Rabun Bald area: Giles, R. T., 2
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- crystalline rocks, Rabun Bald area: Giles, R. T., 2

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Bartow Co., Allatoona Dam Quad.: Ostrander, C. C., 3
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Georgia-Blue Ridge and Piedmont, soils: Ritchie, J. C., 1
Ware Co., Micocene, logs: Ga. Inst. Tech., 4

RANDOLPH COUNTY, see also Georgia, and Georgia-Coastal Plain
Economic geology:
- bauxite: Clark, L. D., 1
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- geologic, Springvale Bauxite Dist.: Clark, L. D., 1
Stratigraphy:
- Paleocene-Eocene: Clark, L. D., 1

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Bartow Co., Pleistocene: Holman, J. A., 1

RICHMOND COUNTY, see also Georgia, and Georgia-Coastal Plain
Areas described:
- Savannah River area: Herrick, S. M., 5
- Savannah River Plant area: Siple, G. E., 2
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- mineral resources: Hurst, V. J., 1
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- ground water, Savannah River Plant area: Siple, G. E., 2
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- geological: Sandy, J., Jr., 4
- groundwater, Savannah River Plant area: Siple, G. E., 2
- structure contour, basement, Savannah River Plant area: Siple, G. E., 1
Stratigraphy:
- Cretaceous: Herrick, S. M., 5; Siple, G. E., 2

Sedimentary Structures:
- biogenic, McIntosh Co., sandbars: Mayou, T. V., 1
- bioturbate, McIntosh Co.: Howard, J. D., 2
- burrows, McIntosh Co., Pleistocene: Weimer, R. J., 1
- beaches, decapod: Frey, R. W., 2
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- estuarine sediments, McIntosh Co.: Howard, J. D., 4
- oolites, Walker Co., Silurian: Chowns, T. M., 1
- ripple marks, McIntosh Co.: Hoyt, J. H., 3
- Silurian, Georgia-Northwestern: Presto, C. D., 1
- trace fossils, McIntosh Co.: Frey, R. W., 1; Howard, J. D., 6

Sediments:
- Chatham Co., beach sands: Audesey, J. L., 1
- DeKalb Co., Mt. Arable, alluvium: Spalvins, K., 1
- Georgia, erosion rates: Meade, R. H., 2
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- Altamaha River: Jinks, D. D., 2
- barrier islands: Hoyt, J. H., 7, 15
- beaches and dunes, carbonates: Morton, R. W., 1
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- clay minerals, transportation and deposition: Neihiesel, J., 4
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Pleistoc ene-Holocene boundary: Hails, J. R., 3
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Oconee River area: Trimble, S. W., 2
river sands: Cleary, W. J., 1
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beach and dune sands: Pilkey, O. H., 2
Brunswick Harbor: Neiheisel, J., 1
estuarine: Neiheisel, J., 5
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barrier islands: Howard, J. D., 5
beaches: Greaves, J. 1; Hoyt, J. H., 2; Pilkey, O. H., 1
Doboy Sound: Cleary, W. J., 1
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washover fans: Mikesel, D. L., 1
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White Co., garnet-bearing: Zodac, P., 1
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SEMINOLE COUNTY, see also Georgia, and Georgia-Coastal Plain
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Seminole Co.: Sever, C. W., Jr., 4
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Georgia-Coastal Plain, subsurface: Berdan, J. M., 1
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Georgia-Blue Ridge, Hayesville Soil: Gibbs, J. A., 1
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laterite: Persons, B. S., 1
Savannah River area, sediment influence: Wall, W. J., 1
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Cecil Soil: Gibbs, J. A., 1
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Twiggs Co., clay minerals: Alexiades, C. A., 1;
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Bartow Co., Adairsville area: Spalvins, K., 2
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economic, bauxite: Zapp, A. D., 1
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terraces: Tanner, W. F., Jr., 1
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THOMAS COUNTY, see also Georgia, and Georgia-Coastal Plain
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groundwater flow: Asmussen, L. E., 1, 2
TITANIUM, see also Mineral resources, and titanium-bearing minerals
Georgia: Miller, J. A., 1; Peterson, E. C., 1
TOURMALINE
DeKalb Co., dikes: Centini, B. A., 1
TRIASSIC PERIOD, see also Mesozoic Era
Burke Co., Savannah River Plant area: Siple, G. E., 2
Georgia-Coastal Plain: Maher, J. C., 3; Richards, H. G., 3
petrography: Milton, C.
Georgia-Piedmont: Wiegand, P. W., 1
Greene Co., diabase: Medlin, J. H., 1
Newton Co., diabase, faulted: Jones, D. D., Jr., 1
Richmond Co., Savannah River Plant area: Siple, G. E., 2
Rockdale Co.: McCollum, M. J., 1
Waite Co., diabase, faulted: Jones, D. D., Jr., 1
TRILOBITA, see also Invertebrates
Catoosa Co., Mississippian: Rich, M.
Floyd Co., Devonian: Nunen, W., E., 1
TROUP COUNTY, see also Georgia, and Georgia-Piedmont
Areas described
Smith's Crossroad area: Bailey, A. C., Jr., 2
Economic geology
chromium: Kingston, G. A., 1
mineral resources. Smith's Crossroad area: Bailey, A. C., Jr., 2
Maps
geological. Smith's Crossroad area: Bailey, A. C., Jr., 2
Petrology
crystalline rocks. Smith's Crossroad area:
Bailey, A. C., Jr., 2
Oxford Pegmatite Mine: Bailey, A. C., Jr., 1
TWIGGS COUNTY, see also Georgia, and Georgia-Coastal Plain
Economic geology
bauxite, Irwinton Dist.: Lang, W. B., 1
kaolin, Irwinton Dist.: Lang, W. B., 1
phosphate: Ga. Inst. Tech., 7
Maps
economic
bauxite, Irwinton Dist.: Lang, W. B., 1
kaolin, Irwinton Dist.: Lang, W. B., 1
geological. Irwinton Dist.: Lang, W. B., 1
Mineralogy
clay minerals: Iannicelli, J., 1
kaolin: O'Brien, N. R., 1
Paleontology
Mammalia, Eocene; Voorheis, M. R., 1
Stratigraphy
Cretaceous-Eocene. Irwinton Dist.: Lang, W. B., 1
Quaternary. Irwinton Dist.: Lang, W. B., 1
Weathering
soil: Alexiades, C. A., 1; Dolcater, D. L. , 1
TYPE SECTIONS (of formations named from Georgia locations)
Abilene Member (of the Barnwell Formation), Eocene
Sandy, J. Jr.
Ashburn Formation, Miocene; Olson, N. K., 4
Centralhatchee Formation, Heard Co.: Bentley, R. D., 2
Chickamauga Supergroup, Ordovician; Milici, R. C., 2
Climchfield Sand, Eocene: Carver, R. E., 1
Danburg porphyritic Granite, Paleozoic (?): Hurst, V. J., 1
Glascocck Member (of the Tuscaloosa Formation), Cretaceous:
Sandy, J., Jr.
Glenlock Formation, Heard Co.: Bentley, R. D., 2
Heard Group, Heard Co.: Bentley, R. D., 2
Kiooke Series, Paleozoic (?): Hurst, V. J., 1
Marble Hill Hornblende Gneiss, Lower Paleozoic:
Penholoway Formation, Pleistocene: Connell, J. F. L., 1
PineMountain Group, Harris Co.: Bentley, R. D., 2
Pond Spring Formation, Ordovician; Milici, R. C., 2
Presley's Mill Gabbro, Putnam Co.: Myers, C. W., 1
Roopville Formation, Carroll Co.: Bentley, R. D., 2
Sand Springs Sequence, Cobb County: Higgins, M. W., 2
UNION COUNTY, see also Georgia, and Georgia-Blue Ridge Meteorites
geocron content: Wasson, J. T., 4
URANIUM, see also Mineral resources, and uranium-bearing minerals
Georgia: Auvil, J. H., Jr., 1
Georgia-Piedmont, monazite: Overstreet, W. C., 3
VERTEBRATA, see also individual orders
Bartow Co., Pleistocene: Lips, E. L., 1; Ray, C. E., 1
VOLCANIC ROCKS, see also igneous rocks
Georgia-Coastal Plain
Eocene: Towe, K. M., 1
northeastern: Crawford, T. J., 1
Georgia-Piedmont, east central: Crawford, T. J., 1
WALKER COUNTY, see also Georgia, and Georgia-Northwestern
Areas described
Chickamauga Supergroup area, guidebook: Milici, R. C., 1
Economic geology
coil, sulphur content: Walker, F. E., 1
Geochemistry
coal: Walker, F. E., 1; Zubovic, P., 1
Geomorphology
Ellison’s Cave: Schreiber, R. W., 5, 8
Four Kings Cave: Schreiber, R. W., 3
Mountain Cove Farm Cave: Schreiber, R. W., 4
Maps
gnomorphology
Four Kings Cave: Schreiber, R. W., 3
Mountain Cove Farm Cave: Schreiber, R. W., 4
Meteorites
Reichenbach lamellae: Brett, P. R., 1
trace elements: Smalley, A. A., 1, 2
Sedimentary petrology
Silurian, oolites: Trueman, J. E., 1
Stratigraphy
Ordovician, Chickamauga Supergroup: Milici, R. C., 1

WARE COUNTY, see also Georgia, and Georgia-Coastal Plain
Areas described
Okefenokee Swamp Natl. Wildlife Refuge: Smedley, J. E., 2
Economic geology
mineral resources, Okefenokee Natl. Wildlife Refuge: Smedley, J. E., 2
phosphate: Ga. Inst. Tech., 2, 4, 5, 7
Geophysical investigations
logs, Miocene: Ga. Inst. Tech., 3
Stratigraphy
Miocene: Ga. Inst. Tech., 2, 4

WARE COUNTY, see also Georgia, and Georgia-Piedmont
Areas described
Okefenokee Swamp Natl. Wildlife Refuge: Smedley, J. E., 2
Economic geology
mineral resources, Okefenokee Natl. Wildlife Refuge: Smedley, J. E., 2
phosphate: Ga. Inst. Tech., 2, 4, 5, 7
Geophysical investigations
logs, Miocene: Ga. Inst. Tech., 3
Stratigraphy
Miocene: Ga. Inst. Tech., 2, 4

WASHINGTON COUNTY, see also Georgia, and Georgia-Coastal Plain
Economic geology
mineral resources: Hurst, V. J., 1
Maps
geochemical: Crawford, T. J., 6

WASHINGTON COUNTY, see also Georgia, and Georgia-Piedmont
Economic geology
bauxite: Lang, W. B., 1
kaolin: Lang, W. B., 1
Maps
economic bauxite: Zapp, A. D., 2
geochemical bauxite belt: Zapp, A. D., 2
Stratigraphy
Paleocene-Eocene: Zapp, A. D., 2

WELL AND WELLS LOGS
Ben Hill Co., Miocene: Ga. Inst. Tech., 3; Sever, C. W., Jr., 10
Sever, C. W., Jr., 10
Camden Co., Miocene: Ga. Inst. Tech., 2, 4
Chariton Co.
Miocene-Pliocene: Olson, N. K., 2
Pleistocene: Olson, N. K., 3
Chatham Co., Miocene: Ga. Inst. Tech., 5, 6, 7
Clinch Co.
Miocene: Ga. Inst. Tech., 2, 4, 7
Pleistocene-Pliocene: Olson, N. K., 2
Echols Co.
Miocene: Ga. Inst. Tech., 4, 5
Pleistocene-Pliocene: Olson, N. K., 2
Neheisel, J., 3
Georgia-Coastal Plain
eastern, heavy minerals: Smith, J. W., 2
Glynn Co., Eocene-Holocene: Wait, R. L., 1
Lowndes Co.
Miocene: Ga. Inst. Tech., 2, 4, 5, 7
Pleistocene-Pliocene: Olson, N. K., 2
Macon Co., groundwater: Sevier, C. W., Jr., 10
Screven Co.: Ga. Inst. Tech., 6
Thomas Co.
ground water: Sevier, C. W., Jr., 10
Miocene: Ga. Inst. Tech., 2
Ware Co., Miocene: Ga. Inst. Tech., 2, 4

WEATHERING, see also Erosion, and Soils
Bartow Co., limestone: Ostrander, C. C., 1

WEATHERING, see also Erosion, and Soils
Bartow Co., limestone: Ostrander, C. C., 1
Geophysical investigations
logs, Miocene: Ga. Inst. Tech., 5
Stratigraphy
Miocene: Ga. Inst. Tech., 5

WHITE COUNTY, see also Georgia, and Georgia-Blue Ridge
Economic geology
gold: Koschmann, A. H., 1

MINERALOGY
garnet: Zodac, P., 1

WHITFIELD COUNTY, see also Georgia, and Georgia-Northwestern
Engineering geology
Dalton Reservoir site: U. S. Army Corps of Engrs., 2
Geohydrology
ground water, Dalton area: Wyrick, G. G., 2
Meteorites
Dalton: Comerford, M. F., 1

WILCOX COUNTY, see also Georgia, and Georgia-Coastal Plain
Meteorites
Pitts: Bunch, T. E., 1; Wasson, J. T., 5
argon content: Cobb, J. C., 1; Fireman, E. L., 1
chlorine content: Begemann, F., 1
exposure age: Nyquist, L. E., 1
exposure history: Begemann, F., 2
germanium content: Wasson, J. T., 4
radioactivity: Rowe, M. W., 1
trace elements: Cobb, J. C., 2

WILKES COUNTY, see also Georgia, and Georgia-Piedmont
Areas described
Metasville area: Fouts, J. A., 1
west central: Cook, R. B., Jr., 1
Economic geology
gold: Cook, R. B., Jr., 1, 2; Hurst, V. J., 1

Geohydrology
ground water, Broad Quad.: Salotti, C. A., 2
Maps
ground water, Broad Quad.: Salotti, C. A., 2
Metasville area: Fouts, J. A., 1
west central: Cook, R. B., Jr., 1

Petrology
biotite in granite: Ramspott, L. D., 4
crystalline rocks: Cook, R. B., Jr., 1
Metasville area: Fouts, J. A., 1
Danburg Granite: Butler, J. R., 1; Ramspott, L. D., 1
Delhi Syenite: Butler, J. R., 1

WILKINSON COUNTY, see also Georgia, and Georgia-Georgia-Coastal Plain
Economic geology
bauxite: Lang, W. B., 1
kaolin: Lang, W. B., 1
phosphate: Ga. Inst. Tech., 7
Maps
economic, bauxite and kaolin: Lang, W. B., 1
ground water, Broad Quad.: Salotti, C. A., 2
geological, Irwinton Dist.: Lang, W. B., 1
Stratigraphy
Cretaceous-Eocene, Irwinton Dist.: Lang, W. B., 1
Quaternary, Irwinton Dist.: Lang, W. B., 1

XENOTIME, see also Mineral resources
Georgia-Piedmont: Mertie, J. B., Jr., 1

ZEOLITES
Georgia-Piedmont: Ramspott, L. D., 5

ZINC, see also Mineral resources, and zinc-bearing minerals
Georgia-Northwestern, Coosa Valley area: Hurst, V. J., 2
Haralson Co.: Hurst, V. J., 2
Paulding Co.: Hurst, V. J., 2