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ANNOTATED BIBLIOGRAPHY OF GEORGIA GEOLOGY

1965 through 1970

by

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STATE OF GEORGIA
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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.

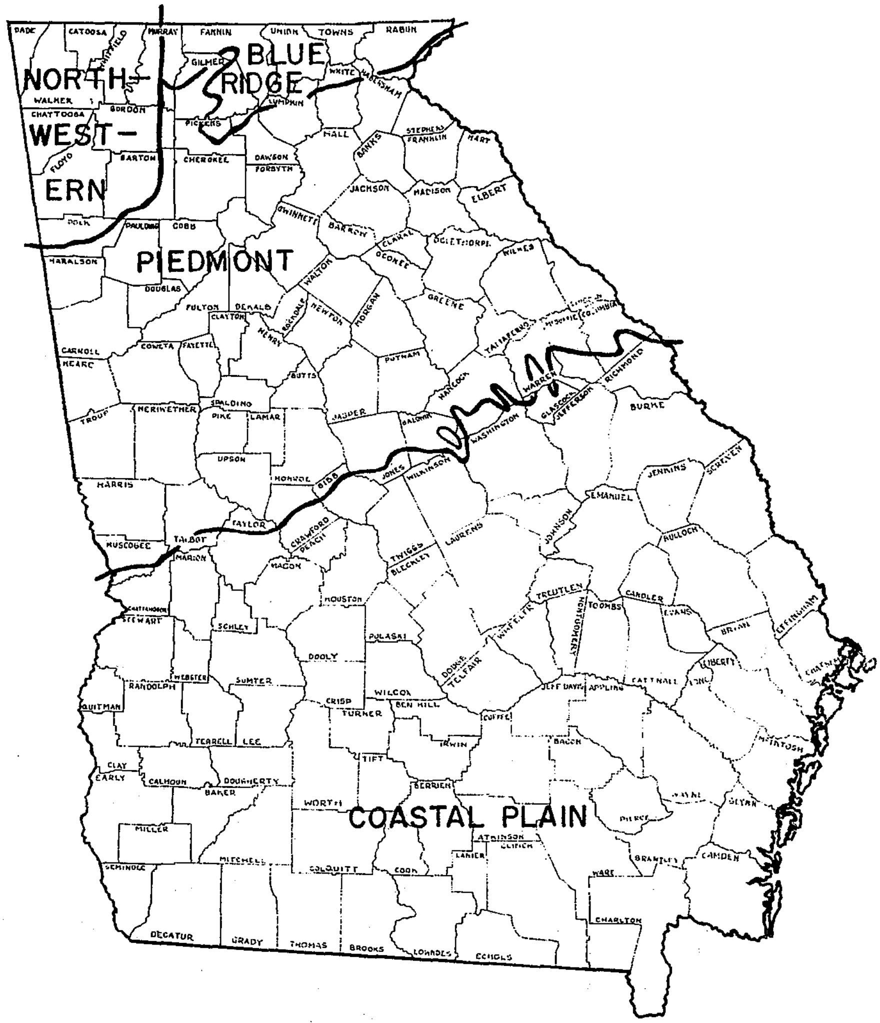

Figure 1. Subdivisions of Georgia used in this Bibliography

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.

AM. PHIL. SOC. PROC. Proceedings of the American Philosophical Society. Published by the Society from Philadelphia, Pennsylvania.

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.

CLAYS AND CLAY MINERALS. Clays and Clay Minerals. Published by the Clay Minerals Society and the Pergamon Press from London, England.

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.

DISSERT. ABS.; DISSERT. ABS., PART B; DISSERT. ABS. INTERNATL., PART B. Dissertation Abstracts; Dissertation Abstracts, Part B, Science and Engineering; Dissertation Abstracts International, Part B, Science and Engineering. Published by the University of Michigan from Ann Arbor, Michigan.

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

EARTH AND PLANETARY SCI. LETTERS. Earth and Planetary Science Letters. Published commercially by the North Holland Publishing Company from Amsterdam, Holland.

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.

GEOCHIMICA ET COSMOCHIMICA ACTA. Geochimica et Cosmochimica Acta. Published by the Geochemical Society from London, England.

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.

GEOL. SOC. LONDON PROC. Proceedings of the Geological Society of London. Published by the Society from London, England.

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.

INST. BRITISH GEOGRAPHERS TRANS. Transactions of the Institute of British Geographers. Published by the Institute from London, England.

INTERNATL. ASSOC. SCIENTIFIC HYDROLOGY BULL. Bulletin of the International Association of Scientific Hydrology. Published by the Institute of Hydrology from Wallingford, England.

INTERNATL. GEOL. CONG. International Geological Congress. Published by the Congress from Prague, Czechoslovakia, and from Mexico City, Mexico.

JOUR. GEOPHYSICAL RESEARCH. Journal of Geophysical Research. Published by the American Geophysical Union from Washington, D.C.

JOUR. HYDROLOGY. Journal of Hydrology. Published commercially by the North Holland Publishing Company from Amsterdam, Holland.

JOUR. PALEONTOLOGY. Journal of Paleontology. Published by the Paleontological Society, and the Society of Economic Paleontologists and Mineralogists, and the Geological Society of America from Menasha, Wisconsin.

JOUR. SED. PETROLOGY. Journal of Sedimentary Petrology. Published by the Society of Economic Paleontologists and Mineralogists from Menasha, Wisconsin.

JOUR. SOIL AND WATER CONSERVATION. Journal of Soil and Water Conservation. Published by the Soil Conservation Society of America from Ankeny, Iowa.

LIMNOLOGY AND OCEANOGRAPHY. Limnology and Oceanography. Published commercially from Lawrence, Kansas.

MARINE GEOLOGY. Marine Geology. Published commercially from the Elsevier Publishing Company from Amsterdam, Holland.

METEORITICS. Meteoritics. Published by the Meteoritical Society from Albuquerque, New Mexico.

MICHIGAN UNIV. MUS. PALEONTOLOGY CONTRIBS. Contributions from the Museum of Paleontology of the University of Michigan. Published by the University from Ann Arbor, Michigan.

MICROPALEONTOLOGY. Micropaleontology. Published by the American Museum of Natural History from New York City, New York.

MINING AND METALLURGICAL SOC. AMERICA BULL. Bulletin of the Mining and Metallurgical Society of America. Published by the Society from New York City, New York.

MINING ENGINEERING. Mining Engineering. Published by the American Institute of Mining, Metallurgical, and Petroleum Engineers from New York City, New York.

NATL. ACAD. SCI. BIOG. MEM. Biographical Memoirs of the National Academy of Science. Published by the Academy from Washington, D.C.

NATL. SPELEOL. SOC. BULL. Bulletin of the National Speleological Society. Published by the Society from Washington, D.C.

NATURE. Nature. Published by British Association for the Advancement of Science from London, England.

NEBRASKA ACAD. SCI. PROC. Proceedings of the Nebraska Academy of Science. Published by the Academy from Lincoln, Nebraska.

OKLAHOMA GEOLOGY NOTES. Oklahoma Geology Notes. Published by the Oklahoma Geological Survey from Norman, Oklahoma.

PALAEONTOGRAPHICA AMERICANA. Palaeontographica Americana. Published by the Paleontological Research Institute from Ithaca, New York.

PENNSYLVANIA GEOL. SURVEY BULL. Bulletin of the Pennsylvania Geological Survey. Published by the Pennsylvania Bureau of Topographic and Geologic Survey from Harrisburg, Pennsylvania.

RADIOCARBON. Radiocarbon. Published by Yale University from New Haven, Connecticut.

ROCKS AND MINERALS. Rocks and Minerals. Published commercially by the Rocks and Minerals Association from Peekskill, New York.

SCIENCE. Science. Published by the American Association for the Advancement of Science from New York City, New York.

SEDIMENTOLOGY. Sedimentology. Published from the International Association of Sedimentologists from Oxford, England.

SENCKENBERGIANA LETHAEA. Senckenbergiana Lethaea. Published by the Senckenbergische Naturforschende Gesellschaft from Frankfort on Main, Germany.

SMITHSONIAN MISC. COLLNS. Smithsonian Miscellaneous Collections. Published by the Smithsonian Institution from Washington, D.C.

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.

SOUTH 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.

U.S. ATOMIC ENERGY COMM. REPT. Report of the United States Atomic Energy Commission. Published by the Commission from diverse places.

U.S. BUR. MINES BULL.; INF. CIRC.; REPT. INV. Bulletin, Information Circular, and Report of Investigations of the United States Bureau of Mines. Published by the Bureau from Washington D.C.

U.S. GEOL. SURVEY ANN. REPT.; BULL.; GEOPHYS. INVS. MAP; MIN. RES. INVS. MAP; MISC. GEOL. INVS. MAP; OIL AND GAS INVS. CHART; WATER-SUPPLY PAPER. Annual Report, Bulletin, Geophysical Investigations Map, Mineral Resource Investigations Map, Miscellaneous Geological Investigations Map, Oil and Gas Investigations Map, and Water-Supply Paper of the United States Geological Survey. Published by the Survey from Washington, D.C.

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.

BIBLIOGRAPHY, ALPHABETICALLY BY AUTHOR, AND CHRONOLOGICALLY

ABEY, ALBERT EDWARD, 1935- , *see* Giardini, Armando Alphonso, 3

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ALEXIADES, 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

1. (and United States Geological Survey). Basement map of North America between latitudes 24° and 60° N: Tulsa, Amer. Assoc. Petroleum Geologists, scale, 1 inch to 5 million inches, 1967.

ANDERSON, ERNEST CARL, 1920- , *see* Rowe, Marvin Wayne, 1

ANDREASON, GORDON ELLSWORTH, 1924- , *see* Zietz, Isidore, 3

ANIYA, MASAMU, 1944-

1. Morphometric studies of monadnocks on the Georgia Piedmont: MA Thesis, Univ. Georgia, 84 p., illus., 1970.

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.
2. (and Harding, James Lombard). Structure beneath continental shelf, northeastern Gulf of Mexico: Am. Assoc. Petroleum Geologists Bull., v. 49, p. 157-171, illus., 1965. Some of the structural extrapolations include features in southern Georgia. A small-scale structural map includes part of the Atlantic Coastal Plain and continental shelf off Georgia.

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.
2. (and Thomas, Adrian Wesley). Numerical descriptions of watershed subsurface conditions [Tift County] [abstract], *in* Abstracts for 1968: Geol. Soc. America Spec. Paper 121, p. 9, 1969.
3. Quaternary sediment distribution above the Hazelhurst shoreline [Coastal Plain] [abstract]: Georgia Acad. Sci. Bull., v. 27, p. 87-88, 1969.

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] Willder Cave...Grady County: Georgia Spelunker, v. 10, no. 2, scale, 1 inch to 50 feet 1966.

AUDESEY, JOSEPH LEWIS, 1923-

1. Petrographic analysis of the beach sands of Chatham County, Georgia: MS Thesis, Univ. Alabama, 17 p., illus., 1954.

AUSTIN, ROGER SETH, 1940-

1. The geology of southeast Elbert County: MS Thesis, Univ. Georgia, 68 p., illus. incl. geol. map, 1965.

2. Mafic intrusive rocks of southeast Elbert County, Georgia [abstract], *in* Abstracts for 1966: Geol. Soc. America Spec. Paper 101, p. 349-350, 1968.
3. A stratigraphic section in the metamorphic Little River Series in east central [Piedmont] Georgia [abstract]: Georgia Acad. Sci. Bull., v. 27, p. 88, 1969.

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.

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1. (and Ehmann, William Donald). The distribution of some noble metals in meteorites and natural materials: Geochimica et Cosmochimica Acta, v. 29, p. 329-342, illus., 1965. The gold content of a Dodge County tektite is .0067 ppm.

BAGBY, ROBERT WILLIAM, 1930- , *see* Mitchell, Jeffrey Leonard, 1

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2. Geology of the Smith's Crossroad area, Troup County, Georgia: MS Thesis, Univ. Georgia, 52 p., illus. incl. geol. map, 1969.

BARNES, VIRGIL EVERETT, 1903-
1. Tektite localities in southern United States [abstract]: Internatl. Geol. Cong. 20, Resumens de los Trabajos Presentados, p. 274, 1956.

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-
1. (and Muehlberger, William Rudolf). Basement rock map of the United States: Washington, D.C., U.S. Geol. Survey, 2 sheets, scale, 1 inch to 2,500,000 inches, 1968.

BEGEMANN, FRIEDRICH, 1927- *see also* Nyquist, Laurence Elwood, 1
1. (and Vilcsek, Elsa). Chlorine-36 and Argon-39 production rates in the metal of stone and stony-iron meteorites [Wilcox County], *in* Meteorite research: Dordrecht, Holland, D. Reidel Pub. Co., p. 355-362, illus., 1969. The Pitts meteorite, from Wilcox County, contains no chlorine.
2. (and Vilcsek, Elsa and Nyquist, Laurence Elwood, and Signer, Peter). The exposure history of the Pitts [Wilcox County] meteorite: Earth and Planetary Sci. Letters, v. 9, p. 317-321, illus., 1970. The effects of exposure on the Ar^{36}/Ar^{37} ratio and on concentrations of Ar^{39} and Cl^{36} indicate an increase in effective radiation flux since at least 350,000 years ago, and an exposure age of 20-60 my.

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1. Soil erosion, its effect on morphogenesis of the landscape, Greene County, Georgia [abstract]: Georgia Acad. Sci. Bull., v. 27, p. 88-89, 1969.

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.

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1. (and Fairley, William Merle, and Fields, Herbert H., and Power, Walter Robert, Jr., and Smith, James William). The Cartersville Fault 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 cursorily 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.

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1. Stratigraphy and faunas of subsurface lower Paleozoic rocks, Florida and adjacent states [abstract], *in* Abstracts for 1964: Geol Soc. America Spec. Paper 82, p. 10, 1965.

BERGENDAHL, MAXIMILIAN HILMAR, 1921- , *see* Koschmann, Albert Herbert, 1

BERKELEY, DOROTHY SMITH, *see* Crisp, Nicholas, 1

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BERKEY, EDGAR, 1940-

1. (and Fisher, David Elemelech). The chlorine content of iron meteorites [Smithonia meteorite, Oglethorpe County] [abstract]: Am. Geophysical Union Trans., v. 47, p. 132, 1966.
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.

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1. Georgia, *in* Ground-water levels in the United States, 1959-1963, southeastern states: U.S. Geol. Survey Water-Supply Paper 1803, p. 114-132, illus., 1965. Data from numerous wells from numerous counties are tabulated. The elevation of the water level below the surface for various months is given.

BOLE, GEORGE ADDISON, 1889- , *see* Stull, Ray Thomas, 1

BOND, THOMAS ALDEN, 1938- , *see also* Scrudato, Ronald John, 2

1. An Upper Eocene silicified reef deposit from Screven County, Georgia [abstract]: Georgia Acad. Sci. Bull., v. 25, p. 89, 1967.
2. Preliminary pollen analysis and radiocarbon dates from Okefenokee Swamp, Charlton County, Georgia [abstract]: Georgia Acad. Sci. Bull., v. 28, no. 2, p. s18, 1970.
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 $\pm$ 417 years old, and that from a depth of 330 to 360 cm is 5260 $\pm$360 years old. These dates represent the beginning of organic deposition in the area.

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BOUCOT, ARTHUR JAMES, 1924- , *see also* Berry, William Benjamin Newell, 1

1. (and Johnson, John Granville). Appalachian Province Early Devonian paleogeography and branchiopod 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.
2. (and Johnson, John Granville, and Talent, John Alfred). Lower and Middle Devonian faunal provinces based on brachiopods, *in* International symposium on the Devonian System, vol. 2: Calgary, Alberta Soc. Petroleum Geologists, p. 1239-1254, illus., 1967. Small-scale maps show the various Devonian faunal provinces. Northwestern Georgia was in the Appalachian faunal province throughout Devonian time.
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, 1

BRANSON, CARL COLTON, 1906-

1. Chester A[lbert] Reeds, Oklahoma geologist [1882-1968]: Oklahoma Geology Notes, v. 28, p. 192-194, port., 1968.

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-

1. (and Henderson, Edward Porter). The occurrence and origin of lamellar troilite in iron meteorites: Geochimica et Cosmochimica Acta, v. 31, p. 721-730, illus., 1967. Reichenbach structures are described and explained. The Walker County meteorite shows these features.

BRINKMANN, ROLAND, 1898-

1. Memorial to Hans Stille (1876-1966): Geol. Soc. America Proc. 1967, p. 263-267, port., 1970.

BROBST, DONALD ALBERT, 1925-

1. Barite in the United States, exclusive of Alaska and Hawaii: U.S. Geol. Survey Min. Res. Invs. Map MR 43, scale, 1 inch to 3,168,000 inches, 10 p., 1965. References to six distinct deposits in northwestern Georgia are included. None is considered a major deposit, however.

BROWN, HARRISON SCOTT, 1917- , *see* Moore, Carleton Bradley, 1

BROWNING, WILLIAM FLEMING, JR., 1926-

1. (and Welch, Stewart William). [Oil and gas] Developments in southeastern states in 1969: Am. Assoc. Petroleum Geologists Bull., v. 54, p. 1030-1035, illus., 1970. Two dry holes were drilled in the Coastal Plain in 1969. One, in Early County, is 7580 feet deep and bottoms in Paleozoic rocks.

BUIE, BENNETT FRANK, 1910-

1. Stephen Taber [1882-1963]: Geol. Soc. London Proc. 1964-65, no. 1628, p. 206-207, 1965.
2. (and Fountain, Richard Calhoun). Tertiary and Cretaceous age of kaolin deposits in Georgia and South Carolina [abstract], *in* Abstracts for 1967: Geol. Soc. America Spec. Paper 115, p. 465, 1968.

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-

1. (and Johns, William Davis, and Murray, Hayden Herbert). Interrelationships of physical properties of [Georgia] kaolinites, *in* Clays and clay minerals — Proceedings of the fourteenth national conference: New York, Pergamon Press, p. 331-346, illus., 1966. Various physical proper-

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-

1. (and Livingston, John Lee). Brevard Zone compared to Alpine root zones: Am. Jour. Sci., v. 265, p. 241-256, illus., 1967; discussion by David Evan Dunn, James Robert Butler, and Philip Stanley Justus, v. 266, p. 215-219, illus., 1968; reply by authors, p. 219-220. The Brevard Zone, in part in the Piedmont of Georgia, is shown to be, by virtue of structural similarities, analogous to the Unseren and Pusteria Insubric Zones of the Alps. The linear features are the most striking characteristics.

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

1. (and Ragland, Paul Clyde). A petrochemical survey of plutonic intrusions in the Piedmont, southeastern Appalachians, U.S.A.: Contribs. Mineralogy and Petrology, v. 24, p. 164-190, illus., 1969. Details of the Sparta Granite from Hancock County, and the Dansburg Granite from Wilkes County, are included. Their geologic and geographic relationship to belts of country rock are discussed.

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* Wait, William Jeptha, 1

CARLSON, CHARLES GORDON, 1895-

1. Arville Irving Levorsen (1894-1965): Tulsa Geol. Soc. Digest, v. 33, p. 276-277, port., 1965.
2. (and Clark, Frank Rinker, and Berry, Frederick Almet Fulghum). Arville Irving Levorsen (1894-1965): Am. Assoc. Petroleum Geologists Bull., v. 49, p. 1534-1537, port., 1965.

CARLSTON, CHARLES WILLIAM, 1912-

1. Longitudinal slope characteristics of rivers of the Midcontinent and the Atlantic east Gulf slopes: Internatl. 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-

1. (and Guild, Philip White, and Wright, Wilna Brown). Iron in the United States, exclusive of Alaska and Hawaii: U.S. Geol. Survey Min. Res. Invs. Map MR 51, scale, 1 inch to 3,168,000 inches, 20 p., 1967. Iron occurs in Paleozoic rocks in northwestern Georgia and in Paleocene rocks in the Coastal Plain. No data are included.

CARRILO, FRED V., *see* Kingston, Gary Arthur, 1

CARRON, MAXWELL KENNETH, 1910- *see* Cuttitta, Frank, 1

CARSEY, JERRY BEN, SR., 1902-

1. Livingston Pierson Teas [1893-1970]: Houston Geol. Soc. Bull. 13, no. 1, p. 27, 1970.

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 downdip 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.
2. Distribution of hornblende in upper Coastal Plain sediments of Georgia [abstract]: Georgia Acad. Sci. Bull., v. 25, p. 89, 1967.
3. Facies relationships in the Jackson Group of central and eastern Georgia [Coastal Plain] [abstract], *in* Abstracts for 1966: Geol. Soc. America Spec. Paper 101, p. 352, 1968.
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.

5. Sedimentology of microscopic opal in Tertiary rocks of the Atlantic Coastal Plain [abstract]: Geol. Soc. America Abstracts with Programs 1969, part 7, p. 30, 1969.
6. Late Pleistocene and Holocene sediment sources, continental shelf of Georgia [abstract]: Geol. Soc. America Abstracts with Programs, v. 2, p. 200, 1970.

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

1. Florida type phosphorite deposits of the United States — origin and techniques for prospecting, *in* Proceedings of the seminar on sources of mineral raw materials for the fertilizer industry in Asia and the Far East — Economic Commission for Asia and the Far East, Mineral Resource Dev. Ser., no. 32: New York, United Nations, p. 178-186, illus., 1968. A general review of the occurrence of the Florida phosphate deposits includes those of the southern part of the Georgia Coastal Plain; these are Miocene and Pliocene in age.
2. Phosphate in the Atlantic and Gulf Coastal Plains, *in* Proceedings, Fourth forum on geology of industrial minerals: Austin, Texas Bur. Econ. Geology, p. 23-34, illus., 1968. A general review of the occurrence of phosphorite includes a small amount of data about its occurrence in southern Georgia. It is here a northern extension of the well-known Florida phosphate deposits.

CENTINI, BARRY AUSTIN, 1937-

1. (and Grant, Willard Huntington). A tourmaline-quartz dike near Decatur, Dekalb County, Georgia [abstract]: Georgia Acad. Sci. Bull., v. 25, p. 87-88, 1967.

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. Paleoclimatic significance of the bryozoan *Metarhabdotos:* Gulf Coast Assoc. Geol. Socs. 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.
2. Morphology and systematics of the bryozoan genus *Metarhabdotos:* Smithsonian Misc. Collns, v. 153, no. 1, iii, 121 p., illus., 1968. *Metarhabdotos (Rhabdotometra) micropora floridanum* from Oligocene rocks in Pulaski County is described and illustrated.

CHEN, CHIH SHAN, 1929-

1. The regional lithostratigraphic analysis of Paleocene and Eocene rocks of Florida: PhD Thesis, Northwestern Univ., 1964; Florida Geol. Survey Bull. 45, 105 p., illus., 1965. Small-scale but detailed isopach and lithofacies maps include the southern part of the Georgia Coastal Plain. Most are carbonate rocks.

CHOWNS, TIMOTHY MICHAEL, 1942-

1. A chamosite-hematite oolite from the [Ordovician] Sequatchie Formation in [Walker County] northwest Georgia [abstract]: Georgia Acad. Sci. Bull., v. 28, no. 2, p. s19, 1970.

CHRISTENSEN, FREDERICK BURR, 1929-

1. Earthquake frequency in South Carolina and Georgia [abstract]: South Carolina Acad. Sci. Bull., v. 29, p. 49, 1967.

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

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

1. Bauxite deposits of the Springvale District [Randolph and Quitman Counties] Georgia: U.S. Geol. Survey Bull. 1199 F, p. F1-F24, illus. incl. geol. map, 1965. Bauxite occurs as cores in kaolin lenses in the Lower Eocene Nanafalia Formation. Distortion has resulted from slumping following solution of the underlying Paleocene limestone. Cretaceous to Eocene rocks are described, and analyses are included.

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

CLARKE, OTIS MANSON, JR., 1914-

1. Formation of bauxite on karst topography [abstract], *in* Abstracts for 1964: Geol. Soc. America Spec. Paper 82, p. 28-29, 1965.

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-

stracts with Programs, v. 2, p. 200-201, 1970.

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. 1524, 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 1968: 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-

1. Hugh Dinsmore Miser (1884-1969): Am. Assoc. Petroleum Geologists Bull., v. 53, p. 2560-2562, port., 1969.
2. Memorial of Hugh Dinsmore Miser — December 8, 1884 — August 1, 1969: Am. Mineralogist, v. 55, p. 583-591, port., 1970.

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 [1964], p. I-47, [1966].

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 Raymond Bryant Daniels, Erling Edward Gamble, and Forrest Steele, v. 8, p. 89-96, illus., 1967; reply by author, p. 97-104, illus., 1967. Two isostatic 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 Georgia, *in* Quaternary geology and climate — Proceedings of the 7th Congress of the Assoc. Quaternary Research, v. 16: Washington, D.C., Natl. Acad. Sci. Pub. 1701, p. 150-162, illus., 1969. Two gradational sequences, one terrestrial, the other marine, form the Atlantic Coastal Plain terraces. The details of the complexes are described. 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. America Spec. Paper 121, p. 59-60, 1969.

COMERFORD, MATTHIAS FRANCIS, 1925-

1. Phosphide and carbide inclusions in iron meteorites, *in* Meteorite research: Dordrecht, Holland, D. Reidel Pub. Co., p. 780-795, illus., 1969; discussions, p. 840-841. The nature, occurrence, and relationship of these two phases are described. 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 Press, p. 317-330, illus., 1966. Six Fall-Line 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 Abstracts with Programs, v. 2, p. 202, 1970.

COOKE, CHARLES WYTHE, 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. extraordinaire, 203 p., illus.,1970. Acritarchs from the Silurian Red Mountain Formation in northwestern 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-

1. Pelmatozoans from the Silurian Red Mountain Formation in Ringgold Gap, Catoosa County, Georgia [abstract]: Georgia Acad. Sci. Bull., v. 23, p. 67, 1965.
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.
3. (and Falls, Darryl Lee). A Mississippian shark from [Bangor? Limestone] Dade County, Georgia [abstract]: Georgia Acad. Sci. Bull., v. 24, p. 75, 1966.
4. (and Allen, Arthur Thomas, Jr., and Lester, James George). Annotated bibliography of Georgia geology through 1959: Georgia Geol. Survey Bull. 79, 368 p., illus., 1967.
5. Environmental science in early Georgia: Georgia Acad. Sci. Bull., v. 25, p. 215-221, 1967. A summary of the geological investigations and interpretations, related largely to medical problems, and prepared by physicians, is given.
6. Index to the Bulletin and other publications of the Georgia Academy of Science: Atlanta [Georgia Academy of Science], 264 p., 1969.
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-

1. Upper Cretaceous ostracodes of the Gulf Coast region: Micropaleontology, v. 11, p. 191-254, illus., 1965. Ostracodes from the Blufftown, Ripley, and Providence Formations in Clay and Stewart Counties are described and illustrated.

CRAWFORD, THOMAS JONES, 1932- , *see also* Hurst, Vernon James, 1, 2; Sandy, John, Jr., 1, 2, 6

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.
8. Pre-Tuscaloosa and pre-Barnwell erosion in east-central [Coastal Plain] Georgia [abstract]: Georgia Acad. Sci. Bull., v. 27, p. 89, 1969.
9. (and Medlin, Jack Harold). Stratigraphic and structural features between the Cartersville and Brevard Fault Zones [Piedmont] — Georgia 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.

CRESSLER, CHARLES WILLIAM, 1932-

1. Geology 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

1. (edited by Berkeley, Edmund, and Berkeley, Dorothy Smith). Instructions for North American geological investigations — 1756: Econ. Geology, v. 64, p. 569-571, 1969. Kaolin is noted along the banks of the Savannah River as early as 1756.

CRONHEIM, SAMUEL P., 1882-1976, *see* Zodac, Peter, 1

CRUFT, EDGAR FRANK, 1933-

1. Minor elements in igneous and metamorphic apatite: Geochimica et Cosmochimica Acta, v. 30, p. 375-398, illus., 1966. Cerium, yttrium, lanthanum, strontium, and sometimes manganese substitute for the calcium in apatites. Calcium and phosphorous are reasonably constant. An ultrabasic rock from Holly Springs, Monroe County is analyzed along with many others from elsewhere.

CULBERTSON, WILLIAM CRAVEN, 1919-

1. Distribution of coal resources in the southern Appalachians [and northwestern Georgia] [abstract] *in* Abstracts for 1967: Geol. Soc. America Spec. Paper 115, p. 40, 1968.

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

CUTTITTA, 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-

1. Ecology and taxonomy of Ostracoda in the vicinity of Sapelo Island [McIntosh County], Georgia: Ph D Thesis, Univ. Michigan, 202 p., illus., 1964; [abstract], Dissert. Abs., v. 25, p. 7202-7203, 1965.

DARRELL, JAMES HARRIS, 2nd, 1942-

1. The palynology of lignite in [Floyd County] northwest Georgia: MS Thesis, Univ. Tennessee, 83 p., illus., 1966.

DAVIES, WILLIAM EDWARD, 1917-

1. Memorial to Ralph W[alter] Stone, 1876-1964: Natl. Speleol. Soc. Bull., v. 27, no. 1, p. 33-34, 1965.
2. (and Halliday, William Ross). [Map of] Karstlands and caves [of the United States], *in* National Atlas of the United States: Washington, D.C., U.S. Geol. Survey, p. 77, scale, 1 inch to 17 million inches, 1970.

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 WIT, REIN, 1914-

1. Memorial, A[lfred] I[rving] Levorsen, 1894-1965: Bull. Canadian Petroleum Geology, v. 13, p. 363, 1965.

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

DISNEY, RALPH WILLARD, 1923-

1. Louise Jordan (1908-1966): Tulsa Geol. Soc. Digest, v. 34, p. 131-132, port., 1966.

DOGWOOD CITY GROTTO OF THE NATIONAL SPELEOLOGICAL SOCIETY

1. [Map of] Howard's [Waterfall] Cave [Dade County, Georgia]. Georgia Underground, v. 3,

p. 65, scale, 1 inch to 300 feet, 1966.

2. [Map of] Byer's Cave, Dade County, Georgia: Georgia Underground, v. 4, no. 2, scale, 1 inch to 240 feet, 1967.

DOLAN, ROBERT, 1929-

1. (and Bosserman, Kenton, and Felder, Wilson). [Map of] Coastal landforms [of the United States], *in* National Atlas of the United States: Washington, D.C., U.S. Geol. Survey, p. 78-79, scale, 1 inch to 7,500,000 inches, 1970.

DOLCATER, DAVID LEE, 1941-

1. (and Syers, John Keith, and Jackson, Marion Leroy). Titanium as free oxide and substituted forms in kaolinites and other soil minerals: Clays and Clay Minerals, v. 18, p. 71-79, illus., 1970. Kaolin from Twiggs County and elsewhere is analyzed to show the nature of the occurrence of titanium in the clays.

DORF, ERLING, 1905-

1. Climatic changes of the past and present: Michigan Univ. Mus. Paleontology Contribs., v. 13, p. 181-210, illus., 1959. Small-scale maps show the inferred climatic conditions for North America based upon paleobotanical data. Only Tertiary climates are described, and very little of the evidence comes directly from Georgia.

DORMAN, LEROY MYRON, 1938- , *see also* Kaarsberg, Ernest Andersen, 1

1. (and Husted, John Edwin). Crustal [seismic refraction] studies in the [Atlanta area] southeastern U.S. — preliminary studies [abstract]: Georgia Acad. Sci. Bull., v. 24, p. 76, 1966; Am. Geophysical Union Trans., v. 47, p. 194, 1966.

DOYLE, LARRY JAMES, 1943-

1. (and Cleary, William James, Jr.) Distribution of mica on the continental shelf, beaches, and rivers of the southeastern United States [abstract]: Elisha Mitchell Sci. Soc. Jour., v. 82, p. 94, 1966.
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.
3. Black shells and their significance as shoreline indicators [abstract], *in* Abstracts for 1968: Geol. Soc. America Spec. Paper 121, p. 432, 1969.

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.
2. 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.

DRYDEN, LINCOLN, 1903-

1. (and Dryden, Clarissa). Coastal plains and heavy minerals [abstract]: Internatl. Geol. Cong. 20th, Resumenes de los Trabajos Presentados, p. 279-280, 1956.

DRYDEN, CLARISSA, 1909- , *see* Dryden, Lincoln, 1

DUNCAN, WILBUR HOWARD, 1910- , *see* Stanley, Edward Alexander, 1

DUNHAM, DAVID BLAIR, 1938- , *see* Warren, Fielding Thomas, 1

DUNLAP, JOHN CRAWFORD, 1911- , *see* White, Walter Stanley, 2

DUNN, DAVID EVAN, 1935- , *see* Burchfiel, Burrell Clark, 1

DURHAM, CLARENCE ORSON, JR., 1930-

1. (and Murray, Grover Elmer, Jr.). Tectonism of Atlantic and Gulf Coastal Province: Am. Jour. Sci., v. 265, p. 428-441, illus., 1967. A general survey of the tectonic activity of the Coastal Plain includes that of Georgia.
2. (and Murray, Grover Elmer, Jr.). Tectonics and stratigraphy of the Gulf Basin [abstract], *in* Abstracts for 1967: Geol. Soc. America Spec. Paper 115, p. 52, 1968.

EHMANN, WILLIAM DONALD, 1931- , *see also* 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-

1. (and Pickering, Samuel Marion, Jr.). A Cambrian hyolithid fauna from the Conasauga Group of Floyd County, Georgia [abstract]: Georgia Acad. Sci. Bull., v. 25, p. 90, 1967.

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 O^{18}/O^{16} 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^{o}C.

EWAN, JOSEPH ANDORFER, 1909-

1. Roland McMillan Harper (1876-1966): Torrey Bot. Club Bull., v. 95, p. 390-393, port., 1968.

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.
2. Cartersville Thrust [Fault], Georgia, and stratigraphic correlations between the Piedmont and the Appalachian valley [abstract] *in* Abstracts for 1965: Geol. Soc. America Spec. Paper 87, p. 247, 1966.
3. The Cartersville Thrust [Fault] at Cartersville [Bartow County] Georgia, *in* The Cartersville Fault problem — Georgia Geol. Soc. Ann. Field Trip no. 1: Georgia Geol. Survey Guidebook ser. no. 4, p. 28-33, illus., 1966; discussions by Aurelius Sydney Furcron, John Rodgers, and Jarvis Bardwell Hadley, p. 33-36, 1966. A review of the evidence for the Cartersville Fault and the various interpretations is given. The problem centers around the stratigraphic interpretation of the rocks on either side of the fault plane.
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-

1. Memorial to Alfred Carey Hawkins — June 15, 1887-March 30,1954: Am. Mineralogist, v. 54, p. 619-625, port., 1969.

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-

1. Detrital feldspar in beach, river, and shelf samples of the Atlantic southeast United States [abstract]: Elisha Mitchell Sci. Soc. Jour., v. 84, p. 439-440, 1968.
2. (and Pilkey, Orrin Hendren). Feldspar in Atlan-

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, DANIEL JEROME, 1896-

1. Memorial to Albert Dudley Brokaw (1880-1966): Geol. Soc. America Proc. 1966, p. 187-189, port., 1968.

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 County meteorite is used with data from other meteorites to test a model of a silicon-containing planetary core. No useful data came from Smithonia.

FISHER, JOHN JOSEPH, 1932- , *see* Hoyt, John Harger, 10

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 ground waters are variable in fluorine content, but all are under 1.0-1.4 ppm.

FLEISCHER, ROBERT LOUIS, 1930-

1. (and Price, Paul Buford, Jr., and Walker, Robert Mowbray). On the simultaneous origin of tektites and other natural glasses: Geochimica et Cosmochimica Acta, v. 29, p. 161-166, illus., 1965. Fission-track dating of Georgia tektites and others from elsewhere is recorded. Georgia tektites are 34 million years old.

FLOCK, WILLIAM MERLE, 1938-

1. Mineralogy and petrology of the Andersonville [Sumter County] Georgia, bauxite district: Ph D Thesis, Pennsylvania State Univ., 228 p., 1966; [abstract], Dissert. Abs. Part B, v. 27, p. 3205, 1967.

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

1. (and others). [Map of] Hurricane Cave, Dade Co., Georgia.: Georgia Underground, v. 6, no. 2, p. 37, scale, 1 inch to 200 feet, 1969.

FORBES, WARREN CLARENCE, 1939-

1. (and Giardini, Armando Alphonso). Petrographic study of ruby-bearing nodules from Habersham County, Georgia [abstract]: Georgia Acad. Sci. Bull., v. 24, p. 73-74, 1966.

FOUCHÉ, 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

1. The geology of the Metasville area, Wilkes and Lincoln Counties, Georgia: MS Thesis, Univ. Georgia, 61 p., illus. incl. geol. map, 1966.

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.

FRASER, DONALD MC COY, 1903-

1. Reminiscences of Paul F[rancis] Kerr: Am. Mineralogist, v. 50, p. 1552, 1965.

FRENCH, ALICE ELIZABETH, 1933-

1. [Map of] Mineral raw materials for construction [in the United States] *in* National Atlas of the United States: Washington, D.C., U.S. Geol. Survey, scale, 1 inch to 7,500,000 inches, p. 182-183, 1970.

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

1. (and Howard, James Dolan). A profile of biogenic sedimentary structures in a Holocene barrier island-salt marsh complex[McIntosh County] Georgia: Gulf Coast Assoc. Geol. Socs. Trans., v. 19, p. 427-444, illus., 1969; Univ. Georgia Marine Inst. Coll. Reprints, v. 7, 1969. Various lebensspuren examples from different types of sedimentary environments near Sapelo Island are cited.
2. (and Mayou, Taylor Vinton). Decapod burrows in Holocene barrier island beaches, [Coastal Plain] Georgia [abstract]: Geol. Soc. America Abstracts with Programs, v. 2, p. 554, 1970.

FRIEDMAN, GERALD MANFRED, 1921- ,*see*

Sanders, John Essington, 1

FRIZZELL, DONALD LESLIE, 1906-1972.

1. Otolith-based genera and lineages of fossil bonefishes (Clupeiformes, Albulidae): Senckenbergiana Lethaea, v. 46A, p. 85-110, illus., 1965. *Protalbula sohli* from the Cretaceous Blufftown Formation at Blufftown, Stewart County, is described and illustrated.

FULLAGAR, PAUL DAVID, 1938-

1. Age and origin of plutonic intrusions in the Piedmont of the southeastern Appalachians [Hancock County] [abstract]: Geol. Soc. America Abstracts with Programs, v. 2, p. 556-557, 1970.

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

1. Garland Peyton [1892-1964]: State Geologists Jour., v. 17, no. 1, p. 4-6, port., 1965.
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-).
4. Kaolin production in Georgia: Georgia Mineral Newsletter, v. 17, p. 31-32, illus., 1964-1965. A brief summary of the occurrence of kaolin in Georgia Coastal Plain rocks is given. No new details are included.
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-

1. Results of heavy mineral exploration across several [Charlton and Camden Counties] Georgia coastal area shoreline ridges [abstract]: Georgia Acad. Sci. Bull., v. 26, p. 70-71, 1968.
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. 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-

1. (and Thom, Bruce Graham). Deweyville terrace, Gulf and Atlantic coasts: Louisiana State Univ. Coastal Studies Inst. Tech. Rept. no. 39, p. 23-41, illus., 1967 [not seen].

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

1. [and Munoz, Maximo Fernando]. An investigation of the geology and economic possibilities of the Hollis Quartzite on Indian Grave Mountain, Pike County, Georgia: Atlanta, Georgia Dept. Mines, Mining and Geology, and Georgia Inst. Tech., Eng. Exper. Sta., [46 p.], [15 p.], illus., 1967. The Hollis Quartzite is described in great detail with a view toward considering its potential as a glass-sand source — which is very good.
2. Geologic map of Georgia: Atlanta, Georgia Dept. Mines, Mining and Geology, 4 by 6 inches [postcard], 1969.
3. Mineral resource map: Atlanta, Georgia Dept. Mines, Mining and Geology, scale, 1 inch to 500,000 inches, 1969.

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.
2. (and Georgia Dept. Mines, Mining and Geology). Project report no. 3, South Georgia Minerals Program, Brooks, Camden, Clinch, Effingham, Lanier, Lowndes, Thomas, and Ware Counties: Atlanta, Georgia Inst. Tech., Eng. Exper. Sta., 68 p., illus., 1966. Numerous drill holes are logged, and the potential mineral resources are tabulated. Phosphate in the Miocene rocks is common, as is sand.
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 phosphatic sand are recorded, and potential commercial exploitation is discussed. Some data from adjacent counties is also included.
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 for seven holes are given. Glass-sand, heavy-mineral-bearing sand, and phosphatic sand are recorded, and potential commercial exploitation is discussed. Some data from adjacent counties are also included.
5. (and Georgia Dept. Mines, Mining and Geology). Project report no. 9, South Georgia Minerals Program: Atlanta, Georgia Inst. Tech., 95 p., illus., 1967. Numerous holes have been drilled and logged in Chatham, Echols, Lanier, Jeff Davis, Montgomery, Wheeler, Liberty, Long, Wayne, and Lowndes Counties. The data are in tabular form, and phosphate in particular is noted. All the phosphate is in Miocene rocks. Geophysical investigation of the holes is also included.
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 phosphate-bearing sands. Areas of economic potential are described.

GERGEL, THOMAS JOSEPH, 1936-

1. The regionalization of tidal marshes along the eastern coast of the United States: Ph D Thesis, Univ. Georgia, 336 p., 1969; [abstract], Dissert. Abs. Internatl., part B, v. 31, p. 244, 1970.

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

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

1. Emission and absorption spectrographic study of colorless and blue [Habersham County] Georgia kyanite [abstract], *in* Abstracts for 1968: Geol. Soc. America Spec. Paper 121, p. 438-439, 1969.
2. Emission spectrographic analyses of ruby bearing margarite-anthophyllite-chlorite nodules and smaragdite from Habersham County, Georgia [abstract]: Georgia Acad. Sci. Bull., v. 28, no. 2, p. s20-s21, 1970.
3. (and Abey, Albert Edward, and Liptai, Robert George). The shear strength of 3 Georgia marbles and Solenhofen Limestone to 70 kilobars [abstract]: EOS, v. 51, p. 424, 1970.

GIBBS, JAMES ALLEN, 1936-

1. (and Perkins, Henry Frank). Properties and genesis of the Hayesville and Cecil Series of [Piedmont and Blue Ridge] Georgia: Soil Sci. Soc. America Proc., v. 30, p. 256-260, illus., 1966. Both are from the weathering of acid igneous rocks. Both are similar except for the fine-sand content and the clay mineralogy.

GIBSON, THOMAS GEORGE, 1934- , *see* Towe, Kenneth McCarn, 1

GILCHRIST, JASON, 1936-

1. (and Thorpe, Arthur Nathaniel, and Senftle, Frank Edward). Infrared analysis of water in tektites and other glasses: Jour. Geophysical

Research, v. 74, p. 1475-1483, illus., 1969. A specimen from probably Dodge County has .011 percent water by weight. The distribution is non-uniform and is somewhat lower on the aerodynamically-heated side.

GILES, ROBERT TALMADGE, 1934-

1. (and Pilkey, Orrin Hendren). Atlantic beach and dune sediments of the southern United States: Jour. Sed. Petrology, v. 35, p. 900-910, illus., 1965; Univ. Georgia Marine Inst. Coll. Reprints, v. 5, 1966. Beaches, dunes, and rivers of Georgia are included in the regional study. Various sedimentary parameters are considered. Beach sands contain the most heavy minerals, and sediments coming from Piedmont rivers are different from those coming from Coastal Plain rivers.
2. Petrography and petrology of the Rabun Bald area [Rabun County] Georgia-North Carolina: MS Thesis, Univ. Georgia, 71 p., illus. incl. geol. map, 1966.
3. River, beach, and dune sands of the southeastern Atlantic coast of the United States, *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. 71-76, illus., 1966. Sands of the various environments are compared petrographically, and much material from the Georgia coast is included.

GILLSON, JOSEPH LINCOLN, 1895-1964.

1. Sand deposits of titanium minerals [Charlton County]: Mining Engineering, v. 11, p. 421-429, illus., 1959. A survey of the world-wide occurrences of heavy-mineral-bearing sand includes a cursory description of those from near Folkston, Charlton County.

GLAWE, LLOYD NEIL, 1932-

1. *Pecten perplanus* stock (Oligocene) of southeastern United States: Ph D Thesis, Louisiana State Univ., 242 p., 1966; [abstract], Dissert. Abs., part B, v. 27, p. 209, 1966.

GOEL, PARMATMA SARAN, 1930- , *see* Kohman, Truman Paul, 1

GOLDSTEIN, JOSEPH IRWIN, 1939-

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.
3. The classification of iron meteorites, *in* Meteorite research: Dordrecht, Holland, D. Reidel Pub. Co., p. 721-737, illus., 1969; discussions, p. 838-839. The classification is based upon the cooling rates and the Ga-Ge ratio, and includes data from Sardis, Cedartown, Smithonia, Canton, Putnam County, Social Circle, and Pitts meteorites.

GOLDSTEIN, ROBERT FRITZ, 1944-

1. Correlation of Silurian strata between [northwestern] Georgia, Alabama, and Florida, based on chitinozoan biostratigraphy: MS Thesis, Florida State Univ., 90 p., 1970; [abstract], Am. Assoc. Petroleum Geologists Bull., v. 54, p. 1784, 1970; Gulf Coast Assoc. Geol. Socs. Trans., v. 20, p. 22, 1970.

GOODMAN, DAVID MICHAEL, 1936-

1. A western panorama, 1849-1875 — The travels, writings, and influence of J[ohn] Ross Browne ...: Glendale, California, Arthur H. Clarke Co., 328 p., illus., 1966.

GRAHAM, ROBIN SPEAR, 1943-

1. Structure and stratigraphy of a portion of the Murphy Marble Belt in Gilmer County, Georgia: MS Thesis, Emory Univ., 59 p., illus. incl. geol. map, 1967; [abstract], *in* Abstracts for 1968: Geol. Soc. America Spec. Paper 121, p. 398, 1969.

GRANT, CAROL MERCER, 1941- , *see* Pomeroy, Lawrence Richards, 1

GRANT, WILLARD HUNTINGTON, 1923- , *see also* Centini, Barry Austin, 1; Cramer, Howard Ross, 2; Ostrander, Charles Corliss, 1

1. (and Lester, James George). Feldspar phenocrysts from Ben Hill [Fulton County] Georgia [abstract]: Georgia Acad. Sci. Bull., v. 23, p. 68, 1965.
2. A comparison of red residual clays from the tropics and the subtropics [DeKalb County, Georgia] [abstract]: Georgia Acad. Sci. Bull., v. 24, p. 76, 1966.
3. Kaolinite stability in the central Piedmont of Georgia, *in* Clays and clay minerals — Proceedings of the 13th national conference: New York,

Pergamon Press, p. 131-140, illus., 1966. Kaolin forms, grows, and is stable in saprolite and B horizons, but is not stable in the upper B, A, and weathering horizons.

4. 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.
5. Chemical weathering of actinolite and clinochlore near Vinings, Cobb County, Georgia [abstract], *in* Abstracts for 1966: Geol. Soc. America Spec. Paper 101, p. 360, 1968.
6. Interpretation of Pine Mountain, southwestern Piedmont of Georgia [abstract], *in* Abstracts for 1967: Geol. Soc. America Spec. Paper 115, p. 476, 1968.
7. Weathering, streams, and structure in the central Piedmont of Georgia [abstract]: Georgia Acad. Sci. Bull., v. 26, p. 68, 1968.
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.
9. Apatite weathering in the Panola Granite [DeKalb and Henry Counties] [abstract]: Georgia Acad. Sci. Bull., v. 26, p. 90-91, 1969.
10. The intrusion mechanics and cooling history of Stone Mountain Granite [DeKalb County] [abstract]: Geol. Soc. America Abstracts with Programs 1969, part 4, p. 28-29, 1969.
11. Movements in the Towaliga Fault Zone, Pike and Lamar Counties, Georgia [abstract], *in* Abstracts for 1968: Geol. Soc. America Spec. Paper 121, p. 440-441, 1969.

GRASTY, ROBERT LEONARD, 1939- , *see* Milton, Charles, 2

GREAVES, JOAN

1. Some aspects of modern barrier-beach development, Sapelo Island [McIntosh County] Georgia, *in* Pleistocene and Holocene sediments, Sapelo Island, Georgia and vicinity — Geol. Soc. America Southeastern Sec. Field Trip No. 1: Athens, Univ. Georgia Geol. Dept., p. 40-63, illus., 1966. The form of the Sapelo Island beach and its daily variations are adjusted to both the frequency and intensity of the incident wave energy. Beach ridges migrate, and erosion occurs at the north end of the island, with deposition occuring along the southern end.

GREELEY, RONALD, 1939-

1. Cenozoic and Recent lunulitiform bryozoans of the Gulf and Atlantic coasts: Ph D Thesis, Univ. Missouri, 1966; [abstract], Dissert. Abs., part B, v. 27, p. 3149, 1967.
2. Basally "uncalcified" zoaria of lunulitiform Bryozoa: Jour. Paleontology, v. 43, p. 252-256, illus., 1969. Several specimens from Eocene rocks in Georgia, from unspecified locations, are discussed. The feature is not genetic as once thought.

GREEN, MARTHA ANNE, 1945- , *see also* Smith, James William, 3, 4, 5

1. (and Pickering, Samuel Marion, Jr.). Establishment of a reference fossil repository at the [Georgia] Department of Mines, Mining and Geology [abstract]: Georgia Acad. Sci. Bull., v. 26, p. 70, 1968.

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.
2. Rock movement triggered by water-level change in the Brunswick [Glynn County] area, Georgia, *in* Geological Survey research: U.S. Geological Survey Prof. Paper 700-C, p. C198-C201, illus., 1970. When holiday-shutdown withdrawals ceased, water levels rose, subsurface pressures increased, and some of the rocks responded by moving.

GREMILLION, 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.
2. The origin of attapulgite in Miocene strata of Florida and [Decatur County] Georgia: Ph D Thesis, Florida State Univ., 188 p., 1965; [abstract], Dissert. Abs., v. 26, p. 1590-1591, 1965.

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-

gia: Gulf Coast Assoc. Geol. Socs. Trans., v. 19, p. 189-193, illus., 1969. Data from 33 wells on the Coastal Plain are included. The geothermal trends are northeast-southwest oriented. All of those in Georgia are greater than 1° F per 100 feet.

GRIM, RALPH EARLY, 1902-

1. (and Wahl, Floyd Michael). The kaolin deposits of [Coastal Plain] 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-

1. Joseph L[incoln] Gillson [1895-1964] — an appreciation: Mining and Metallurgical Soc. America Bull. 321, v. 57, no. 2, p. 66-67, 1964.

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-

1. Wisconsinan range changes of birds and mammals in eastern North America [and Bartow County, Georgia] [abstract], *in* Am. Quarternary Assoc. First Mtg. Abstracts: Bozeman, Montana State Univ., p. 57, 1970.

HACK, JOHN TILTON, 1913-

1. The area, its geology-Cenozoic development of the southern Appalachians, *in* The distributional history of the biota of the southern Appalachians — Part 1: Blacksburg, Virginia Polytech. Inst. Research Div. Mon. 1, p. 1-17, illus., 1969. A generalized review of Appalachian Cenozoic history includes allusions to that of northern Georgia. Little detail is given.

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.
3. (and Hoyt, John Harger). The significance and limitations of statistical parameters for distinguishing ancient and modern sedimentary environments of the lower Georgia Coastal Plain: Jour. Sed. Petrology, v. 39, p. 559-580, illus., 1969; Univ. Georgia Marine Inst. Coll. Reprints, v. 7, 1969. The upraised Pleistocene deposits and modern deposits are analyzed, and the sign of the skewness is the most useful parameter for differentiating the different environments.

HALL, DONALD D., 1933-

1. Paleoecology and taxonomy of fossil [Pleistocene] Ostracoda in the vicinity of Sapelo Island [McIntosh County] Georgia: Ph D Thesis, Univ. Michigan, 239 p., illus., 1965; [abstract], Dissert. Abs., v. 26, p. 2687-2688, 1965.

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

HAMMOND, EDWIN HUGHES, 1919-

1. [Map of] Classes of land-surface form [of the United States], *in* National Atlas of the United States: Washington, D.C., U.S. Geol. Survey, scale, 1 inch to 7,500,000 inches, p. 62-63,

1970.

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.

HARDING, JAMES LOMBARD, 1929- , *see* Antoine, John Woodworth, 2

HARRIS, LEONARD DORREAN, 1925-

1. The Clinchport Thrust Fault — a major structural element of the southern Appalachian Mountains, *in* Geological Survey research 1965: U.S. Geol. Survey Prof. Paper 558 B, p. B 49-B 53, illus., 1965. The fault can be traced into northwestern Georgia where it is a continuation of the Taylor Ridge Fault.

HARRISON, RICHARD EDES, 1901-

1. Shaded relief map of the United States, *in* National Atlas of the United States: Washington, D.C., U.S. Geol. Survey, scale, 1 inch to 7,500,000 inches, p. 56-57, 1970.

HARRISON, ROBERT ALAN, 1946-

1. Slump and diapiric structures in the Coastal Plain of Stewart County, Georgia [abstract]: Georgia Acad. Sci. Bull., v. 26, p. 68, 1968.

HARRISS, ROBERT CURTIS, 1941-

1. Geochemical and mineralogical studies on the weathering of granitic rocks: Ph D Thesis, Rice Univ., 130 p., 1965; (and Adams, John Allen Stewart). Am. Jour. Sci., v. 264, p. 146-173, illus., 1966.

HARTNER, FLORINE ELIZABETH, 1914- , *see* Walker, Forrest Eugene, 1

HASSLACHER, ROBERT NEIL, 1931- , *see* Sweeney, John Walter, 1

HATCHER, ROBERT DEAN, JR., 1940-

1. Stratigraphic controls and thrusting along the Brevard Zone [Piedmont] [abstract]: Geol. Soc. America Abstracts with Programs, v. 2, p. 214-215, 1970.
2. A working model for the developmental history of the southern Appalachian Blue Ridge and Piedmont [abstract]: Geol. Soc. America Abstracts with Programs, v. 2, p. 745-747, 1970.

HAZEL, JOSEPH ERNEST, 1933-

1. *Repandocosta*, a new Cretaceous and Tertiary ostracode genus: Jour. Paleontology, v. 41, p. 103-110, illus., 1967. *Repandocosta couleycreekensis* from the Eocene McBean Formation in Burke County is described and illustrated.
2. *Cythereis eaglefordensis* Alexander, 1929 — a guide fossil for deposits of latest Cenomanian age in the Western Interior and Gulf Coast regions of the United States, *in* Geological Survey research 1969: U.S. Geol. Survey Prof. Paper 650 D, p. D 155-D 158, illus., 1969. *Cythereis eaglefordensis* from Cretaceous rocks in a deep well in Echols County is discussed and illustrated.

HEASLIP, WILLIAM GRAHAM, 1928-

1. Cenozoic evolution of the alticostate venericards in Gulf and east coastal North America: Ph D Thesis, Columbia Univ., 243 p., 1963; Palaeontographica Americana, v. 6, no. 39, p. 55-135, illus., 1968. *Venericardia (Rotundicardia) diversidentata vicksburgiana* from the Eocene Barnwell Formation of Bibb County is discussed.

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- , *see also* Brett, Peter Robin, 1

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 Smithonia. Weights, and dates, if known, are included. Smithonia is among the largest.

HENRY, VERNON JAMES, JR., 1931- , *see also* Antoine, John Woodworth, 1; Howard, James Dolan, 1, 2; Hoyt, John Harger, 3, 4, 5, 6, 7, 9, 12, 17; Levy, John Sanford, 2, 3, 5; Logan, Thomas Francis, Jr., 2, 3; Marland, Frederick Charles, 1

1. (and Hoyt, John Harger). Late Pleistocene fluvial and estuarine deposits at Savannah [Chatham County], Georgia [abstract]: Georgia Acad. Sci. Bull., v. 23, p. 67-68, 1065.
2. (and Hoyt, John Harger). Distribution of estuarine and nearshore sediments of the central coast of [McIntosh County] Georgia [abstract],

in Abstracts for 1966: Geol. Soc. America Spec. Paper 101, p. 361, 1968.

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.

HERGENRODER, JOHN DAVID, 1930-

1. The Bays Formation (Middle Ordovician) and related rocks of the southern Appalachians [and northwestern Georgia]: Ph D Thesis, Virginia Polytech. Inst., 1966; [abstract], Dissert., Abs., Part B, v. 27, p. 1186, 1966.
2. Stratigraphy of the Bays Formation (Middle Ordovician) and related rocks [northwestern Georgia] [abstract], *in* Abstracts for 1967: Geol. Soc. America Spec. Paper 115, p. 478, 1968.

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.

HERPERS, ULRICH, 1940-

1. (and Herr, Wilfred, and Woefle, Robert). Evaluation of ^{53}Mn by (n, y gamma) activation, ^{26}Al and special trace elements by y (gamma)-coincidence technique, *in* Meteorite research: Dordrecht, Holland, D. Reidel Pub. Co., p. 387-396, illus., 1969. The Locust Grove, Henry County meteorite contains 134 ± 6.6 ppm Mn.

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

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

1. Foraminiferal fauna of late Miocene age from Georgia and South Carolina [abstract], *in* Abstracts for 1964: Geol. Soc. America Spec. Paper 82, p. 301-302, 1965.
2. (and Wait, Robert Lyle). Subsurface stratigraphy of coastal Georgia and South Carolina [abstract]: Am. Assoc. Petroleum Geologists Bull., v. 49, p. 344, 1965.
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.
4. Buried karst of Tertiary limestones in the Coastal Plain of Georgia [abstract], *in* Abstracts for 1967: Geol. Soc. America Spec. Paper 115, p. 95-96, 1968.
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.
6. (and Pickering, Samuel Marion, Jr., and Sachs, Kelvin Norman, Jr.). An occurrence of middle Oligocene rocks in Pulaski County, Georgia [abstract], *in* Abstracts for 1967: Geol. Soc. America Spec. Paper 115, p. 479, 1968.
7. New data regarding the Okefenokee Swamp in southeastern Georgia [Charlton County] [abstract]: Geol. Soc. America Abstracts with Programs, v. 2, p. 215, 1970.

HESTER, NORMAN CURTIS, 1933-

1. The origin of the [Cretaceous] Cusseta Sand [Coastal Plain]: Ph D Thesis, Univ. Cincinnati, 219 p., 1968; [abstract], Dissert. Abs., Part B, v. 29, p. 1729-1730, 1968.
2. The depositional environment of an Upper Cretaceous deltaic sand in southeastern United States [abstract], *in* Abstracts for 1968: Geol. Soc. America Spec. Paper 121, p. 135, 1969; Am. Assoc. Petroleum Geologists Bull., v. 53, p. 722, 1969.
3. Weathering effects on the mineralogy of Upper Cretaceous sands in Alabama and [Coastal Plain] Georgia [abstract]: Geol. Soc. America Abstracts with Programs, v. 2, p. 215-216, 1970.

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

Thesis, Emory Univ., 141 p., illus. incl. geol. map, 1965.

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 [1966]. 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.
3. Geologic map of the Brevard Fault Zone near Atlanta [Carroll, Cobb, Douglas, and Fulton Counties] Georgia: U.S. Geol. Survey Misc. Geol. Invs. Map I-511, scale, 1 inch to 48,000 inches, 1968.
4. (and Smith, Charles William, and Zietz, Isidore). New aeroradio-activity map of the Georgia Nuclear Laboratory area [northern Georgia] [abstract]: Geol. Soc. America Abstracts with Programs, v. 2, p. 216, 1970.

HILL, RAYMOND LESLIE, 1904-

1. Pleistocene terraces in Georgia: MS Thesis, Univ. Florida, 155 p., 1966.

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

HISEY, WILLIAM MURPHY, 1925-

1. Preliminary faunal study of the [Cretaceous] Providence Sand [Coastal Plain]: MS Thesis, Univ. Alabama, 284 p., 1952.

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.

HOLLENBECK, RONALD PARKER, 1933-

1. (and Tyrrell, Miles Edward). Raw materials for lightweight aggregate in the Appalachian region, Alabama and [northwestern] Georgia: U.S. Bur. Mines Rept. Inv. 7244, 25 p., illus., 1969. Expandable shale from numerous localities and formations in northwestern Georgia is analyzed for its potential as lightweight aggregate. The Pennsylvanian shale in Walker County is cited as one possible source.

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.

HOLMES, RALPH JEROME, 1906-

1. Paul Francis Kerr: Am. Mineralogist, v. 50, p. 1519, 1965.

HOLSER, WILLIAM THOMAS, 1920-

1. Memorial of James Dabney Burfoot, Jr. — October 18, 1896-February 27, 1966: Am. Mineralogist, v. 54, p. 598-600, port., 1969.

HORBACK, HENRY, 1912-1966

1. (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

HORVATH, ALLAN LEO, 1925-

1. A teacher's legacy — Dr. August F[rederick] Foerste [1862-1936]: Explorer, v. 9, no. 4, p. 20-22, 1967.

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

1. (and Henry, Vernon James, Jr.). Studies of Recent and Pleistocene sediments [Georgia coast] using x radiography [abstract], *in* Abstracts for 1966: Geol. Soc. America Spec. Paper 101, p. 362, 1968.
2. (and Henry, Vernon James, Jr.). Use of x radiography in the study of bioturbate textures: Internatl. Sedimentation Congress 7th, England, 1967, looseleaf, 4 p., illus., 1967; Univ. Georgia Marine Inst. Coll. Reprints, v. 6, 1968. Bioturbation of sediments by organisms is

described and illustrated.

3. Bottom sampling of [McIntosh County] Georgia estuaries with N E L spade cores [abstract]: Am. Assoc. Petroleum Geologists Bull., v. 53, p. 723, 1969.
4. Primary physical and biogenic structures of estuarine sediments — Doboy and Sapelo Sounds [McIntosh County] Georgia [abstract]: Geol. Soc. America Abstracts with Programs 1969, part 4, p. 37-38, 1969.
5. Radiographic examination of variations in barrier island facies, Sapelo Island [McIntosh County] Georgia: Gulf Coast Assoc. Geol. Socs. Trans., v. 19, p. 217-232, illus., 1969; Univ. Georgia Marine Inst. Coll. Reprints, v. 7, 1969. Photographs of x-ray radiographs showing various types of sedimentation features are given. Examples from offshore, river-mouth shoals, shoreface, foreshore, backshore, dunes, tidal channels, tidal-creek sandbars, washover fans, and tidal flats are included.
6. Trace fossils as criteria for recognizing shorelines in stratigraphic record [McIntosh County] [abstract]: Am. Assoc. Petroleum Geologists Bull., v. 53, p. 723, 1969.
7. (and Frey, Robert Wayne). Examination of Georgia coastal sediments with N E L spade corer [abstract]: Am. Assoc. Petroleum Geologists Bull., v. 54, p. 853, 1970.

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

1. High-angle beach stratifications, Sapelo Island [McIntosh County], Georgia: Jour. Sed. Petrology, v. 32, p. 309-311, illus., 1962; *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. 3, 1964. Foreshore sandbars typically have a landward slope. Deposition on this slope results in a landward movement of the bar. The deposits are characterized by high-angle cross-bedding with dips as steep as 30 degrees.
2. (and Weimer, Robert Jay). Comparison of modern and ancient beaches, central Georgia coast [McIntosh County]: Am. Assoc. Petroleum Geologists Bull., v. 47, p. 529-531, 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. The modern beach deposits on Sapelo Island are compared with those of Pleistocene age at nearby Sutherland Bluff. Similarities and differences are noted.
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.
4. (and Henry, Vernon James, Jr.). Development and geologic significance of soft beach sand [McIntosh County]: Sedimentology, v. 3, p. 44-51, 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. Soft sand is due to sponge-like bubble development from air trapped in sand by flooding tide. The bubble impressions, if trapped, resemble rain-drop impressions, and can be used as environmental indicators.
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.
6. (and Henry, Vernon James, Jr.). Sediment mixing in coastal estuaries, Sapelo Island [McIntosh County], Georgia [abstract]: Georgia Acad. Sci. Bull., v. 23, p. 68, 1965.

7. (and Henry, Vernon James, Jr.). Significance of inlet sedimentation in the recognition of ancient barrier islands, *in* Sedimentation of Late Cretaceous and Tertiary outcrops, Rock Springs Uplift — Wyoming Geol. Assoc. Guidebook Ann. Field Conf. 19: Casper, Wyoming, Petroleum Information, p. 190-194, illus., 1965; *in* Pleistocene and Holocene sediments, Sapelo Island, Georgia, and vicinity — Geol. Soc. America Southeastern Sec., Field Trip no. 11: Athens, Univ. Georgia Geology Dept., 1966; Univ. Georgia Marine Inst. Coll. Reprints, v. 5, 1966. Unique sedimentation features at tidal inlets between barrier islands on the Georgia coast are described. The effects of longshore drift carrying material into a shifting channel are significant.
8. Air and sand movement to the lee of dunes [McIntosh County]: Sedimentology, v. 7, p. 137-143, illus., 1966; Univ. Georgia Marine Inst. Coll. Reprints, v. 6, 1968. The effects of wind velocity, grain size, sand supply, and dune height all help to determine the nature of the deposition of the sand in the lee of a dune. A lee-eddy is influential.
9. (and Henry, Vernon James, Jr., and Howard, James Dolan). [Field trip guide to] Pleistocene and Holocene sediments, Sapelo Island [McIntosh County], Georgia, and vicinity — Geol. Soc. America Southeastern Sec., [Guidebook] Field trip no. 1: Athens, Univ. Georgia Geology Dept., p. 1-27, illus., 1966. A description of the geology at 9 stops on Sapelo Island and on the nearby mainland are given. All deal with Pleistocene and Holocene shorelines. Illustrations and radiocarbon dates are included.
10. Barrier island formation: Geol. Soc. America Bull., v. 78, p. 1125-1136, illus., 1967; discussion by Charles Wythe Cooke, v. 79, p. 945-946, 1968; reply by author, p. 947; discussion by John Joseph Fisher, p. 1421-1425, illus.; reply by author, p. 1427-1431, illus., 1968; Univ. Georgia Marine Inst. Coll. Reprints, v. 6, 1968. Sapelo Island, McIntosh County, is one example among many used to support the thesis that barrier islands form by the submergence after sea invasion, of beach ridges and dunes which had been originally built upon the shore before the submergence. Later processes alter the islands.
11. Geology of the Golden Isles and lower Georgia Coastal Plain, *in* The future of the marshlands and sea islands of Georgia, edited by David Samuel Maney, Frederick Charles Marland, and Clifford Bates West: [Sapelo Island, Georgia, Univ. Georgia Marine Inst.], p. 18-34, illus. [1967]; Univ. Georgia Marine Inst. Coll. Reprints, v. 7, 1969. This is a semi-popular account of the origin of the barrier islands of the Georgia coastlines as they now exist, and of the origin of the earlier Pleistocene marine deposits farther inland.
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.
13. Intercontinental correlation of Late Pleistocene sea levels: Nature, v. 215, p. 612-614, illus., 1967; Univ. Georgia Marine Inst. Coll. Reprints, v. 6, 1968. Similar shoreline elevations on the Georgia coast and on the northwest African coast are noted, but they have formed differently, however, and are of different ages.
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.
15. (and Hails, John Robert). Pleistocene shoreline sediments in coastal Georgia — deposition and modification: Science, v. 155, p. 1541-1543, illus., 1967; Univ. Georgia Marine Inst. Coll. Reprints, v. 6, 1968. The Pleistocene terraces are not cut-and-fill structures, but are beach-and-marsh complexes deposited at higher elevations.
16. Theory of barrier island facies association: Internatl. Sedimentation Cong. 7th, England, 1967, looseleaf, 4 p., 1967; Univ. Georgia Marine Inst. Coll. Reprints, v. 6, 1968. Examples from the Georgia coast are used to show that barrier islands form by the inundation of beach-dune ridges. The relations of lagoon facies and cheniers to barrier islands are shown.
17. (and Henry, Vernon James, Jr., and Weimer, Robert Jay). Age of late Pleistocene shoreline deposits [McIntosh County], coastal Georgia,

in Means of correlation of Quaternary successions: Salt Lake City, Univ. Utah Press, p. 381-393, 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.

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. Examples from the Georgia coastal islands are cited to show the composition, texture, and geometry of the deposition associated with offshore islands.
19. Pleistocene shore lines — guide to tectonic movements, northern Florida and southern Georgia [abstract], *in* Abstracts for 1967: Geol. Soc. America Spec. Paper 115, p. 104, 1968.
20. (and Hails, John Robert). Pleistocene stratigraphy of southeastern Georgia [abstract], *in* Abstracts for 1967: Geol. Soc. America Spec. Paper 115, p. 480, 1968.
21. Chenier versus barrier, genetic and stratigraphic distinction: Am. Assoc. Petroleum Geologists Bull., v. 53, p. 299-306, illus., 1969; Univ. Georgia Marine Inst. Coll. Reprints, v. 7, 1969. Examples of barrier-island formation from the Georgia coast are cited to show the difference in the origin of these two otherwise similar features.
22. Erosional and depositional estuarine "terraces", southeastern United States [abstract]: Geol. Soc. America Abstracts with Programs 1969, part 4, p. 38, 1969.
23. Late Cenozoic structural movements, northern Florida [and southeastern Georgia]: Gulf Coast Assoc. Geol. Socs. Trans., v. 19, p. 1-9, illus., 1969; Univ. Georgia Marine Inst. Coll. Reprints, v. 7, 1969. Considerable allusion to the Pleistocene terrace deposits and to their correlations in Georgia are made in this description of similar features in Florida.
24. Origin of capes and shoals along the southeastern United States coast [abstract]: Geol. Soc. America Abstracts with Programs 1969, part 7, p. 109, 1969.
25. (and Hails, John Robert). Pleistocene shorelines in a relatively stable area, southeastern Georgia, U.S.A.: Giornale di Geologia, 2d ser. v. 35, no. 4, p. 105-117, illus., 1969; Univ. Georgia Marine Inst. Coll. Reprints, v. 7, 1969; preprint, v. 6, 1968. Six shorelines along the Georgia Coastal Plain are described. They can serve as a reference where tectonism elsewhere has distorted the shorelines. All are below 90 meters and all are relatively undeformed.

HUDDLE, JOHN WARFIELD, 1907- , *see* Oliver, William Albert, Jr., 1, 2

HUGHES, THOMAS CARSON, 1946- , *see also* Carpenter, Robert Heron, 1

1. (and Carpenter, Robert Heron). Magnetite-bearing quartzite in southwestern Jackson County, Georgia [abstract]: Georgia Acad. Sci. Bull., v. 28, no. 2, p. s21, 1970.

HUMPHREY, RONALD CRAWLEY, 1943-

1. The geology of the crystalline rocks of Greene and Hancock Counties, Georgia: MS Thesis, Univ. Georgia, 57 p., illus. incl. geol. map, 1970.
2. (and Radcliffe, Dennis). The petrology of the Siloam Granite, Greene County, Georgia [abstract]: Geol. Soc. America Abstracts with Programs, v. 2, p. 220, 1970.

HUMPHREYS, JOHN SANFORD, 1933-

1. Craig Morris Merrihue, 1933-1965: Am. Alpine Jour., v. 14, p. 401, port., 1965.

HUNEKE, JOHN CLIFTON, 1939- , *see* Nyquist, Laurence Elwood, 1

HUNT, CHARLES BUTLER, 1906-

1. Physiography of the United States: San Francisco, W. H. Freeman and Co., 481 p., illus., 1967. Each of the various physiographic provinces of the United States is described geologically, and those in Georgia are included.

HURST, VERNON JAMES, 1923- , *see also* Crawford, Thomas Jones, 1; Medlin, Jack Harold, 1; Milton, Charles, 1

1. (and Crawford, Thomas Jones, and Sandy, John, Jr.,). Mineral resources of the Central Savannah River Area: U.S. Dept. Commerce, Tech Asst. Program, and Athens, Univ. Georgia Geology Dept., 2 vols., 467 p., 231 p., illus., 1966. Included are those two tiers of counties along the river from Lincoln and Wilkes southward to Screven and Burke. A cursory review of the general geology is given, and is followed by very detailed accounts of mineral resources in the area. Past, present, and future economic mineral deposits are considered, of which there are many. Ground water is also discussed.
2. (and Crawford, Thomas Jones). Sulfide deposits in the Coosa [River] Valley area [Piedmont and northwestern] Georgia: U.S. Dept. Commerce, Econ. Devel. Adm., 190 p., illus. incl. geol. map, 1970. Reconnaisance of the alluvium by geochemical investigations is used

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

1. Factors influencing occurrence of phosphorite in Georgia's Coastal Plain sediments: Ph D Thesis, Florida State Univ., 93 p., illus., 1970.

IANNICELLI, JOSEPH, 1929-

1. (and Millman, Nathan). Relation of viscosity of kaolin-water suspensions to montmorillonite content of certain [Twiggs County] Georgia clays, *in* Clays and clay minerals — Proceedings of the fourteenth national conference: New York, Pergamon Press, p. 347-354, illus., 1966. Transition from low to high viscosity occurs when the montmorillonite content exceeds 5 percent.

ILLING, VINCENT CHARLES, 1890-1969.

1. Arville Irving Levorsen [1894-1965]: Geol. Soc. London Proc. 1965-66, no. 1636, p. 203-204, 1967.

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

JAEGER, 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.

1. (and Lipschutz, Michael Elazar). Implications of shock effects in iron meteorites: Nature, v. 220, p. 139-143, illus., 1968. Reference is made to Social Circle, Walton County meteorite as showing effects of shock.
2. (and Lipschutz, Michael Elazar). Shock histories of hexahedrites and Ga-Ge Group III octahedrites, *in* Meteorite research: Dordrecht, Holland, D. Reidel Pub. Co., p. 827-837, illus., 1969; discussion, p. 842. Included are data from the Cedartown, Polk County, meteorite which was shocked less than 130 kb.
3. (and Lipschutz, Michael Elazar). On preferred disorder and the shock history of chemical group IVA meteorites: Geochimica et Cosmochimica Acta, va. 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-

1. Genesis of some clays in the Altamaha River watershed of [Coastal Plain] Georgia: Ph D Thesis, Univ. Georgia, 103 p., 1969: [abstract], Dissert. Abs., part B, v. 27, p. 3616, 1967.
2. (and Perkins, Henry Frank). Mineralogy of alluvial sediments [Altamaha River] in the [Georgia] Coastal Plain [abstract]: Georgia Acad. Sci. Bull., v. 25, p. 88, 1967.

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-

1. Petrofabric and movement study of faults in Newton and Walton Counties, Georgia: MS Thesis, Emory Univ., 28 p., illus., 1970.

JONES, WALTER BRYAN, 1895-

1. Roland McMillan Harper [1878-1966]: Alabama Acad. Sci. Jour., v. 38, p. 111-113, port., 1967.

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* Burchfiel, Burrell Clark, 1

KAARSBERG, ERNEST ANDERSEN, 1918-

1. (and Dorman, Leroy Myron). Gravity and magnetic investigations of the ultrabasic instrusive body at Conley, DeKalb County, Georgia [abstract]: Georgia Acad. Sci. Bull., v. 23, p. 68, 1965.

KAUSHAL, SUSHIL KUMAR, 1938-
1. (and Wetherill, George West). Rb^{87}-Sr^{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 Vallely, 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-
1. Lower Cambrian stratigraphy of [northwestern] Georgia [abstract], *in* Abstracts for 1964: Geol. Soc. America Spec. Paper 82, p. 302, 1965.

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-
1. Northern source for Devonian Frog Mountain Sandstone in Alabama and [northwestern] Georgia, with palinspastic considerations [abstract], *in* Abstracts for 1966: Geol. Soc. America Spec. Paper 101, p. 363-364, 1968.
2. Pre-Chattanooga Devonian stratigraphy of Alabama and northwest Georgia: Ph D Thesis, Univ. Illinois, 181 p., 1970; [abstract], Dissert. Abs., v. 31, part B, p. 7320, 1970.

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
1. Geology of Dodge County, Georgia: MS Thesis Harvard Univ., 17 p., 1962.
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.
3. Baddeleyite inclusions in a [Dodge County] Georgia tektite [abstract]: Am. Geophysical Union Trans., v. 47, p. 145, 1966.
4. Composition of [Dodge and Irwin Counties] Georgia tektites [abstract]: Meteoritics, v. 3, p. 114, 1967.

KING, PHILIP BURKE, 1903-
1. Tectonics of Quaternary time in middle North America, *in* The Quaternary of the United States: Princeton, Princeton Univ. Press, p. 831-870, illus., 1965. A review of the tectonic events of the United States includes those of Georgia. An earthquake intensity map is given. The relative stability of the southeast, as reflected in the lower marine terraces, is notable.
2. Tectonic map of North America (scale 1: 5,000,000), *in* Scientific communications read to the Commission for the Geological Map of the World: Paris, Internatl. Geol. Cong. 22, p. 17-31, 1966. A summary of the newly-published tectonic map of North America includes some allusions to the tectonics of Georgia.
3. (compiler). Tectonic map of North America: Washington, D.C., U.S. Geol. Survey, 2 sheets, scale, 1 inch to 5,000,000 inches, 1969.
4. The tectonics of North America — a discussion to accompany the 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.

6. [Map of] Tectonic features [of the United States], *in* National Atlas of the United States: Washington, D.C., U.S. Geol. Survey, scale, 1 inch to 7,500,000 inches, p. 70-71, 1970.
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. (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 serpentinized peridotite, and it is not considered to be commercially important.

KINNEY, DOUGLAS MERRILL, 1917-

1. [Map of] Geology [of the United States], *in* National Atlas of the United States: Washington, D.C., U.S. Geol. Survey, scale, 1 inch to 7,500,000 inches, p. 74-75, 1970.

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-

1. The geology of the Talmo area, Jackson and Hall Counties, Georgia: MS Thesis, Univ. Georgia, 66 p., illus. incl. geol. map, 1969.

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.

KOHMAN, TRUMAN PAUL, 1916-

1. (and Goel, Parmatma Saran). Terrestrial ages of meteorites from cosmogenic C^{14}, *in* Radioactive dating: Vienna, Internatl. Atomic Energy Agency, p. 395-409, illus., 1963; discussion, p. 409-411. The Sardis meteorite from Burke County has had more than 10 million years on the earth.

KOSCHMANN, ALBERT HERBERT, 1896-1962.

1. (and Bergendahl, Maximilian Hilmar). Principal gold-producing districts of the United States: U.S. Geol. Survey Prof. Paper 610, *v*, 283 p., illus., 1968. Cursory descriptions of gold occurrences in Cherokee, Lumpkin, and White Counties are included.

KOVER, ALLAN NORMAN, 1922-

1. (and Luttrell, Gwendolyn Lewise Werth). Side-looking radar imagery of southeastern United States [abstract]: Geol. Soc. America Abstracts with Programs 1969, part 4, p. 43, 1969.

KRUMBEIN, WILLIAM CHRISTIAN, 1902-

1. J[oseph] P[oyer] D[eyo] Hull (1889-1967) and the S E P M — a tribute; Jour. Paleontology, v. 41, p. 1542-1543, port., 1967.

KULM, LA VERNE DUANE, 1936- , *see* Neiheisel, 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.
2. (and Hoyt, John Harger). Sedimentation in a meandering estuary [McIntosh County]: Sedimentology, v. 6, p. 191-207, illus., 1966; Univ. Georgia Marine Inst. Coll. Reprints, v. 5, 1966. Sand is deposited on two point bars. The nature of the erosion and sedimentary structures are

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. (and Warren, Walter Cyrus, and Thompson, Raymond Melvin, and Overstreet, Elizabeth Fischer). Bauxite and kaolin deposits of the Irwinton District [Coastal Plain] Georgia: U.S. Geol. Survey Bull. 1199-J, p. J1-J26, illus. incl. geol. map, 1965. The district encompasses Twiggs, Wilkinson, Washington, Baldwin, and Hancock Counties. The bauxite and kaolin occur in Upper Cretaceous sedimentary rocks, and were formed during the erosion interval between the Cretaceous and overlying Eocene rocks. There is more kaolin then bauxite, and the nature of the occurrence of each is described.

LAROQUE, JOSEPH ALFRED AURÈLE, 1909-

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-

1. Map showing distribution of ultramafic and intrusive mafic rocks from northern New Jersey to eastern Alabama: U.S. Geol. Survey Misc. Geol. Invs. Map I 476, scale, 1 inch to 500,000 inches, 3 sheets, 1966.

LAURENCE, ROBERT ABRAHAM, 1908-

1. Ore deposits of the southern Appalachians, *in* Ore deposits of the United States, 1933-1967, vol. 1: New York, Am. Inst. Mining, Metallurgical, and Petroleum Engineers, p. 155-168, illus., 1968. A review of the mineral deposits of the region includes those of Georgia. No new data are included.

LAWTON, DAVID EDWARD, 1942-

1. Geology of the Hard Labor Creek area, in west-central Morgan County, Georgia: MS Thesis, Univ. Georgia, 51 p., illus. incl. geol. map, 1969.

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

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

1. (and Stringfield, Victor Timothy). Development of permeability and storage in the Tertiary limestones of the southeastern U.S.A.: Internatl. Assoc. Scientific Hydrology Bull., v. 11, no. 4, p. 61-73, illus., 1966. Groundwater circulation increases the amount of permeable opening in the various Tertiary limestones of the Coastal Plain. The relationship of sinks, rivers, and groundwater are discussed. Almost all of the limestones have been altered by groundwater in some way.
2. Quantified hydrogeology of crystalline rocks in the southeastern states [abstract], *in* Abstracts for 1966: Geol. Soc. America Spec. Paper 101, p. 366, 1968.
3. Exploitation of subsurface conditions [for ground water] in the Piedmont and Blue Ridge provinces [abstract], *in* Abstracts for 1968: Geol. Soc. America Spec. Paper 121, p. 451-452, 1969.

LEIGHTON, MORRIS MORGAN, 1887-1971.

1. Arthur Charles Bevan [1888-1968]: State Geologists Jour., v. 20, p. 25-26, 1968.

LERMAN, ABRAHAM, 1935-

1. Evolution of *Exogyra* in the Late Cretaceous of the southeastern United States: Ph D Thesis, Harvard Univ., 152 p., 1963; Jour. Paleontology, v. 39, p. 414-435, illus., 1965. Several species from Cretaceous rocks exposed along the Chattahoochee River are described, and their relations to evolutionary sequences are discussed. All are from Stewart County.
2. Rates of evolution and statistical distance [abstract], *in* Abstracts for 1966: Geol. Soc. America Spec. Paper 82, p. 122, 1965.

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

LESURE, FRANK GARDNER, 1927-

1. Residual enrichment and supergene transport of gold, Calhoun Mine, Lumpkin County, Georgia [abstract]: Geol. Soc. America Abstracts with Programs 1969, part 4, p. 45-46, 1969.

LEVY, JOHN SANFORD, 1944-

1. Suspended sediment distribution of Doboy Sound [McIntosh County] Georgia: MS Thesis, Univ. Georgia, 102 p., illus., 1968.
2. (and Henry, Vernon James, Jr.). Distribution of suspended sediment in a central Georgia estuary [McIntosh County] [abstract], *in* Abstracts for 1968: Geol. Soc. America Spec. Paper 121, p. 452-453, 1969.
3. (and Henry, Vernon James, Jr.). A mixed salt marsh estuary [McIntosh County] [abstract]: Geol. Soc. America Abstracts with Programs 1969, part 4, p. 46, 1969.
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 Cartersville, 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? [abstract], *in* Abstracts for 1967: Geol. Soc. America Spec. Paper 115, p. 485-486, 1968.

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 [abstract]: Geol. Soc. America Abstracts with Programs, v. 2, p. 229, 1970.

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

LURIE, EDWARD, 1927-
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

LUTIF, NUMAN A. R. ABDUL, 1932-
1. (and Weaver, Charles Edward). Kinetics of acid-dissolution of palygorskite (attapulgite) and sepiolite: Clays and Clay Minerals, v. 17, p. 169-178, illus., 1969. Attapulgite from Decatur County, Georgia, and other minerals from elsewhere are dissolved in acids to determine the effects of natural chemical weathering and other geochemical relationships.

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

LYONS, PAUL LIGHTNER, 1911-
1. Continental and oceanic geophysics, in Megatectonics of continents and oceans: New Brunswick, 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 Conrad 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, illus., 1966. A general but complete discussion of Trenton-aged rocks in the United States includes those in Georgia. The rocks in Georgia are entirely limestone.

MC CLELLAN, GUERRY HAMRICK, 1939-
1. Petrology of attapulgus clay in north Florida and southwest Georgia: Ph D Thesis, Univ. Illinois, 127 p., 1964; [abstract], Dissert. Abs., v. 25, p. 6539, 1965.

MC COLLUM, MORRIS JOHN, 1936-
1. Ground-water resources and geology of Rockdale County, Georgia: Georgia Geol. Survey Inf. Circ. 33, 17 p., illus. incl. geol. map, 1966. The area is underlain by Precambrian (?) metamorphic rocks which have been intruded by younger igneous rocks of uncertain age; some are diabase of Triassic age. Each unit is described, with emphasis being placed upon the water-bearing properties. 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.

p. 1580, 1967.

MC KOWN, DAVID MELVIN, 1943- , *see* Ehmann, William Donald, 1

MC LAUGHLIN, ROBERT EVERETT, 1919-

1. Palynology of core samples of Paleozoic sediments from beneath the Coastal Plain of Early County, Georgia: Georgia Geol. Survey Inf. Circ. 40, 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.

MC LEMORE, WILLIAM HICKMAN, 1940-

1. The geology of Pollard's Corner area, Columbia County, Georgia: MS Thesis, Univ. Georgia, 49 p., illus. incl. geol. map, 1965.
2. "Cold intrusion" of ultra-basic bodies at Pollard's Corner area, Columbia County, Georgia [abstract]: Georgia Acad. Sci. Bull., v. 26, p. 69, 1968.

MAC NEIL, FRANCIS STEARNS, 1909-

1. Middle Tertiary sedimentary regimen of Gulf Coastal region: Am. Assoc. Petroleum Geologists Bull., v. 50, p. 2344-2365, illus., 1966. Evidence, largely petrographic, is presented to show that the source of the terrigenous sediments in the Tertiary rocks of the Gulf Coast, including those in Georgia, was largely from the uplifted rocks of the Rocky Mountain region and not from the Appalachians. Transgressions and regressions explain the alternations of the various rock types.

MC VAY, THOMAS NEWKIRK, 1891-

1. John Roy Thoenen [1886-1966]: Mining and Metallurgical Soc. America Bull. 325, v. 59, no. 2, p. 70-71, 1966.

MAGEE, MAURICE, 1929-

1. Geology and ore deposits of the Ducktown District, Tennessee [and Fannin County, Georgia], *in* Ore deposits of the United States, 1933-1967, vol. 1: New York, Am. Inst. Mining, Metallurgical, and Petroleum Engineers, p. 207-241, illus., 1968.

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- , *see* Hoyt, John Harger, 11

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- , *see* Griffin, George Melvin, Jr., 1

MANLEY, FREDERICK HARRISON, JR., 1931- , *see* Martin, Benjamin Franklin, 1

MAPPER, DAVID, 1923- , *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.

MARLAND, FREDERICK CHARLES, 1933- , *see also* Hoyt, John Harger 11

1. (and Henry, Vernon James, Jr.). Organic matter budget of a salt marsh watershed [McIntosh County] [abstract]: Geol. Soc. America Abstracts with Programs 1969, part 4, p. 49, 1969.

MARSALIS, WILLIAM EPHRIAM, 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-

1. (and Manley, Frederick Harrison, Jr.). Clay mineralogy of some Ordovician bentonites from the Chickamauga Supergroup, northwest Georgia [abstract]: Georgia Acad. Sci. Bull., v. 28, no. 2, p. s22-s23, 1970.

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

MATTHEWS, VINCENT, 3d, 1942- , *see also* Salotti, Charles Anthony, 4

1. Geology and petrology of the pegmatite district in southwestern Jasper County, Georgia: MS Thesis, Univ. Georgia, 68 p., illus. incl. geol. map, 1967.
2. Use of Iredell Loam as an aid in locating unmapped gabbro-norite bodies in [Piedmont] Georgia [abstract]: Georgia Acad. Sci. Bull., v. 25, p. 87, 1967.
3. The Gladesville Norite [Jasper County] and its relationship to similar mafic plutons in the Georgia Piedmont [abstract]: Geol. Soc. America Abstracts with Programs 1969, part 4, p. 50, 1969.

MAYOU, TAYLOR VINTON, 1942- , *see also* Frey, Robert Wayne, 2; Mikesh, David Leonard, 1

1. (and Howard, James Dolan). Recognizing estuarine and tidal creek sandbars by biogenic sedimentary structures [McIntosh County] [abstract]: Am. Assoc. Petroleum Geologists Bull., v. 53, p. 731, 1969.

MEADE, ROBERT HEBER, 1930-

1. Relations between suspended matter and salinity in estuaries of the Atlantic seaboard, U.S.A.: Internatl. 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.
4. Sediment transport and deposition as controlled by estuarine hydraulics — examples from the Savannah and Mississippi Rivers [abstract]: Geol. Soc. America Abstracts with Programs 1969, part 4, p. 51-52, 1969.

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.

MELLO, JAMES FRANCIS, 1936-

1. Generic-level re-evaluation of Gulf Coastal Plain Cretaceous Foraminifera [abstract], *in* Abstracts for 1967: Geol. Soc. America Spec. Paper 115, p. 433, 1968.

MERTIE, JOHN BEAVER, JR., 1888-

1. Geologic occurrence of monazite and xenotime in the southeastern states [abstract]: Geol. Soc. America Bull., v. 68, p. 1766-1767, 1957.

MEYERHOFF, ARTHUR AUGUSTUS, 1928-

1. Future hydrocarbon provinces of Gulf of Mexico-Caribbean region: Gulf Coast Assoc. Geol. Socs. Trans., v. 17, p. 217-260, illus., 1967. A review of the geologic history of the Gulf of Mexico-Caribbean region includes that of the Georgia Coastal Plain. Little detail is included, however. The Cretaceous terrigenous-sand areas are cited as a possible future province.
2. Memorial to Joseph Poyer Deyo Hull (1889-1967): Am. Assoc. Petroleum Geologists Bull., v. 52, p. 174-175, port., 1968.

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

MIKESH, DAVID LEONARD, 1941-

1. (and Howard, James Dolan, and Mayou, Taylor Vinton). Depositional characteristics of a washover fan — Sapelo Island [McIntosh County] Georgia [abstract], *in* Abstracts for 1968: Geol. Soc. America Spec. Paper 121, p. 201, 1969.

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

1. (and Smith, James William). A guide to the stratigraphy of the Chickamauga Supergroup in its type area [Walker County] [Georgia Geol. Soc. Guidebook 4th Ann. Field Trip]: [Atlanta, Georgia Dept. Mines, Mining and Geology], [11 p.], illus., [1969]. The trip departs from Chattanooga and continues southward for 39 miles. The geology at five stops is described; Ordovician limestone formations are examined.
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-

1. (and Bagby, Robert William). The sedimentary environment of conodonts in the [Devonian] Chattanooga Shale, Catoosa County, Georgia [abstract]: Georgia Acad. Sci. Bull., v. 27, p. 91-92, 1969.

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.

MOODY, CLARENCE LEMUEL, 1888-1963.

1. Gulf of Mexico distributive province: Am. Assoc. Petroleum Geologists Bull., v. 51, p. 179-

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. (and Brown, Harrison Scott). Barium in stony meteorites: Jour. Geophysical Research, v. 68, p. 4293-4296, illus., 1963. The Lumpkin, Stewart County meteorite has 6 ppm barium.
2. (and Lewis, Charles Franklin, and Nava, David Frahas). Superior analyses of iron meteorites, *in* Meteorite research: Dordrecht, Holland, D. Reidel Pub. Co., p. 738-748, illus., 1969; discussions, p. 839. A new technique is used to analyze for Ni, P, C, Ca, S, and Cu; included are the analyses for the Putnam County meteorite.

MOORE, F. C., JR., *see* Petty, Arley Jerry, 1

MOORE, JOSEPH

1. Description of a new species of gigantic beaver-like rodent: Cincinnati Soc. Nat. Hist. Jour., v. 13, p. 26-30, illus., 1890; correction, p. 103; discussion by Edward Drinker Cope, Am. Naturalist, v. 24, p. 772, 1890. Cope calls it a tooth from a *Hippopotamus amphibius.* It comes from somewhere in the Blue Ridge province.

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

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

1. (and Luternauer, John Leland, and Pilkey, Orrin Hendren). Carbonate fraction of beach and dune sands [Coastal Plain] [abstract], *in* Abstracts for 1966: Geol. Soc. America Spec. Paper 101, p. 369, 1968.

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. 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.

1. Geology of the Presley's Mill area, northwest Putnam County, Georgia: MS Thesis, Univ. Georgia, 67 p., illus. incl. geol. map, 1968.

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

NEAL, WILLIAM PETRY, 1936-

1. The southern Piedmont Upland of the southeastern United States — a geomorphic system in a steady state of dynamic equilibrium [Clarke County]: MA Thesis, Univ. Georgia, 81 p., illus., 1967.

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.

5.(and Weaver, Charles Edward). [discussion of] Natural indicators of estuarine sediment movement [by John Vincent Byrne and LaVerne Duane Kulm, 1967]: Am. Soc. Civil Engineers Proc., v. 93 (Jour. Waterways and Harbors Div. Paper WW4), p. 263-265, 1968. Various clay minerals and ratios can be used to study the nature of water movement and sedimentation. The Altamaha estuary, Brunswick Harbor, and the Turtle River are used as examples.

NEWCOMB, LAWRENCE EDWARD, 1921- , *see* Callahan, Joseph Thomas, 1

NICHOLSON, ALEXANDER, JR., 1921-1970.

1. Louise Jordan (1908-1966): Am. Assoc. Petroleum Geologists Bull., v. 52, p. 2058-2059, port., 1968.

NICHOLSON, GEORGE RICHARDSON, JR., 1946- , *see* Schreiber, Richard Walter, 1

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-

1. The Foraminifera and paleoecology of the Blufftown Formation (Upper Cretaceous), of Georgia and eastern Alabama: Ph D Thesis, Louisiana State Univ., 1967; [abstract], Dissert. Abs., part B, v. 28, p. 2902, 1968.

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-

1. Microfractures in brittle rocks — their relationship to larger scale structural features and existing ground stresses [Piedmont]: Ph D Thesis, Ohio State Univ., 169 p., 1967; [abstract], Dissert. Abs., part B, v. 28, p. 5082, 1968.

NORRIS, ROBERT MATHESON, 1921-

1. Robert Baron Guillou (1923-1965): Am. Assoc. Petroleum Geologists Bull., v. 51, no. 3, part 1, p. 434, port., 1967.

NORTH AMERICAN GEOLOGICAL MAP COMMITTEE

1. Geological map of North America: Washington, D.C., U.S. Geol. Survey, scale, 1 inch to 5,000,000 inches, 2 sheets, 1965.

NUNAN, WALTER EDWARD, 1943-

1. (and Lipps, Emma Lewis). A Devonian fauna from the Frog Mountain Sandstone, Floyd County, Georgia [abstract]: Georgia Acad. Sci. Bull., v. 26, p. 71, 1968.

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 $^{36}Ar/^{38}Ar$ 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, MALCOLM CHRISTIE, 1890-

1. Hugh Dinsmore Miser, 1884-1969: Oklahoma Geology Notes, v. 29, p. 129-130, port., 1969.

O'BRIEN, NEAL RAY, 1937-

1. (and Orlopp, 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-

1. Ostracoda from the Paleocene Clayton Formation [Macon County] central Georgia: Georgia Acad. Sci. Bull., v. 28, p. 149-152, illus., 1970. Seventeen species are listed and illustrated.

OKLAHOMA GEOLOGICAL SURVEY

1. Bibliography of Louise Jordan [1908-1966]: Oklahoma Geology Notes, v. 27, p. 107-111, 1967.
2. Louise Jordan, 1908-1966: Oklahoma Geology Notes, v. 27, p. 3-8, port., 1967.

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

Manley, and Hoskins, Donald Martin, and Huddle, John Warfield). Correlation of Devonian rock units in the Appalachian Basin: U.S. Geol. Survey Oil and Gas Invs. Chart OC-64, 1969. The section in Floyd County includes, from bottom to top: Armuchee Chert, Frog Mountain Sandstone, Ragland Sandstone, Chattanooga Shale, and Maury Formation.

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.
4. Indurated [Miocene] rock units in the Georgia Coastal Plain [abstract]: Georgia Acad. Sci. Bull., v. 25, p. 88, 1967.
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.

1. Brown iron ore resources of Quitman County, Ga.: U.S. Bur. Mines Inf. Circ. 8264, 29 p., illus., 1965. Drilling outlines ore bodies of limonite at the Cretaceous-Tertiary boundary. Over 29 million tons of ore remain in reserve. Analyses are included.

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

OSTRANDER, CHARLES CORLISS, 1927-

1. (and Grant, Willard Huntington). Chemical and physical changes caused by weathering of carbonate rocks near White and Rydal [Bartow County] Georgia [abstract]: Georgia Acad. Sci. Bull., v. 23, p. 69, 1965.
2. An approach to geological data storage and retrieval systems [abstract]: Georgia Acad. Sci. Bull., v. 26, p. 69, 1968.
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.
2. (and others). Fluvial monazite deposits in the southeastern United States: U.S. Geol. Survey Prof. Paper 568, *v*, 85 p., illus., 1968. Monazite from Piedmont streams in the drainage basins of the Oconee, Flint, and Chattahoochee Rivers is analyzed. Its occurrence as a heavy mineral and placer is described.
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 ThO_2 and 0.13 to 0.67 percent

U_3O_8. 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

PAKISER, LEWIS CHARLES, JR., 1919-

1. (and Robinson, Rhoda Hayden). Composition of the continental crust as estimated from seismic observations, *in* The earth beneath the continents: Am. Geophysical Union Mon. 10, p. 620-626, illus., 1966. The computations of percentages of major oxides in the crust associate seismic velocities with composition. The crust under the southeastern United States (including Georgia) Coastal Plain is 42 percent mafic by volume, and the Appalachian Highland area is 62 percent mafic.

PALMER, KATHERINE EVANGELINE HILTON VAN WINKLE, 1895-

1. (and Brann, Doris C.). Catalog of the Paleocene and Eocene Mollusca of the southern and eastern United States — Part 1, Pelecypoda, Amphineura, Pteropoda, Scaphopoda, and Cephalopoda: Bulls. Am. Paleontology, v. 48, no. 218, p. 1-443, illus., 1965; Part 2 [as vol. 2], Gastropoda, p. 444-1056, illus., 1966. A check list of mollusks includes nomenclatural history, occurrence, and type location. Many are from Georgia.
2. Paleozoic non-marine bivalve from a deep well in [Early County] Georgia: Georgia Acad. Sci. Bull., v. 28, p. 45-54, illus., 1970.

PARK, RICHARD AVERY, 4th, 1938-

1. Paleoecology of *Venericardia sensu latu* (Pelecypoda) in the Atlantic and Gulf Coastal Province — an application of paleosynecologic methods: Ph D Thesis, Univ. Wisconsin, 161 p., 1967; Jour. Paleontology, v. 42, p. 955-986, illus., 1968. A map indicates that some of the specimens in this statistical study come from Georgia, but no specific details are included.

PASTER, THEODORE PHILIP, 1938-

1. Origin of the Appalachian Mountains [abstract], *in* Abstracts for 1967: Geol. Soc. America Spec. Paper 115, p. 493, 1968.

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-

1. (and Reynolds, John Hamilton). Craig Morris Merrihue, 1933-1965: Meteoritics, v. 4, no. 1, p. 1-6, port., 1968.

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-

1. Titanium resources of the United States: U.S. Bur. Mines Inf. Circ. 8290, 65 p., illus., 1966. Titaniferous heavy-mineral-bearing sand occurs along the shorelines of Georgia, especially in Charlton and Camden Counties. Titanium also occurs in the rutile from Graves Mountain, Lincoln County.

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

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

PETTY, ARLEY JERRY, 1923-

1. (and Petrafeso, Frank A., and Moore, F. C., Jr.). Aeromagnetic map of the Savannah River Plant area, South Carolina and [central eastern] Georgia: U.S. Geol. Survey Geophys. Invs. Map GP 489, scale, 1 inch to 250,000 inches, 1965.

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-

cene river sources or from outcrops on the shelf. Its presence on the beaches suggests landward transport.

3. The provenance and distribution of phosphorite in coastal and shelf sediments of Georgia, *in* Pleistocene and Holocene sediments, Sapelo Island [McIntosh County] Georgia and vicinity — Geol. Soc. America Southeastern Sec., Field Trip no. 1: Athens, Univ. Georgia Geology Dept., p. 67-70, illus., 1966.
   Phosphorite pebbles in the estuaries have come from the landward transport of phosphatic shelf sediments; the rivers are carrying none to the estuaries.
4. Clay mineral relationships in recent river, near-shore marine, continental shelf, and slope sediments of the southeastern United States: Ph D Thesis, Univ. Montana, 175 p., 1968; [abstract], Dissert. Abs., part B, v. 29, p. 3017, 1969; *in* Abstracts for 1966: Geol. Soc. America Spec. Paper 101, p. 447-448, 1968.

PFERD, JEFFREY WILLIAM, 1946-

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

PHILPOTTS, JOHN ALDWYN, 1940- , *see* Pinson, William Hamet, Jr., 2

PICKERING, SAMUEL MARION, JR., 1938- , *see also* Auvil, Jesse Herbert, Jr., 1; Englebright, Steven Cale, 1; Green, Martha Anne, 1; Herrick, Stephen Marion, 6; Smith, James William, 2

1. 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 Oliogocene 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.
2. Biostratigraphically significant echinoids from Eocene and Oligocene sediments of the middle Georgia Coastal Plain [abstract]: Georgia Acad. Sci. Bulls., v. 26, p. 73, 1968.
3. (and Allen, Thomas Erwin). Description of a new Georgia tektite from Washington County [abstract]: Georgia Acad. Sci. Bull., v. 26, p. 71, 1968.

PIERCE, JACK WARREN, 1927- , *see* Colquhoun, Donald John, 3

PILKEY, ORRIN HENDREN, 1934- , *see also* Doyle, Larry James 2; Field, Michael Ehrenhart, 2; Giles, Robert Talmadge, 1; Judd, James Brian, 1; Morton, Robert Wheldon, 1; Pevear, David Reckard, 2

1. (and Richter, Dennis Max). Beach profiles of a [McIntosh County] Georgia barrier island: Southeastern Geology, v. 6, p. 11-19, 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. Seven stations on Sapelo Island were sampled seasonally. Except for accretion on the southern end, most of the island is being eroded. Seasonal and storm changes are slight.
2. (and Morton, Robert Wheldon, and Luternauer, John Leland). The carbonate fraction of beach and dune sands: Sedimentology, v. 8, p. 311-327, illus., 1967. Mineralogy, roundness, and size were investigated in sand from the Little St. Simons Inlet, Glynn County.

PINSON, WILLIAM HAMET, JR., 1919- , *see also* Schnetzler, Charles Carter, 2

1. (and Schnetzler, Charles Carter). Rubidium-strontium correlation of three tektites and their supposed sedimentary matrices: Nature, v. 193, p. 233-234, illus., 1962; *in* Variations in isotopic abundances of Sr, Ca, and argon and related topics: Cambridge, Massachusetts Inst. Tech. Dept. Geology and Geophysics, p. 71-73, illus., 1965. The Rb-Sr ratio of a tektite from Dodge County and the soil in which the tektite was found are determined to test the hypothesis that the tektite is from lightning-fused matrix. The major-element analyses of the two are greatly different.
2. (and Philpotts, John Aldwyn, and Schnetzler, Charles Carter). K/Rb ratios in tektites: Jour. Geophysical Research, v. 70, p. 2889-2894, illus., 1965; *in* Variations in abundance of strontium, calcium, and argon, and related topics: Cambridge, Massachusetts Inst. Tech., Dept. Geology and Geophysics, p. 69-70, illus., 1965. A tektite from Empire, Dodge County, is included. Its K/Rb ratio by weight is 267, higher than most of the others.

PITKIN, JAMES ALFRED, 1931-

1. 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* Ramspott, Lawrence David, 4

PLUSQUELLEC, PAUL LLOYD, 1941-

1. Some ostracod genera of the [Cenozoic] Subfamily Campylo cytherinae [Coastal Plain]: Ph D Thesis, Univ. Illinois, 157 p., 1968; [abstract], Dissert. Abs., part B, v. 29, p. 2496, 1969.

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

1. (and Smith, E. E., and Grant, Carol Mercer). The exchange of phosphate between estuarine water and sediments [McIntosh County]: Limnology and Oceanography, v. 10, p. 167-172, illus., 1965; Univ. Georgia Marine Inst. Coll. Reprints, v. 5, 1966. Sediments in Doboy Sound exchange phosphate with the water in two steps — between the clay and the water and between the interstitial microorganisms and the water.

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

1. Stratigraphic nomenclature and correlations in the Murphy Marble Belt [Piedmont and Blue Ridge] [abstract]: Georgia Acad. Sci. Bull., v. 27, p. 92-93, 1969.

PRATHER, JESSE PRESTON, 1935-

1. (and Radcliffe, Dennis). Petrology of the norites of Monroe County, Georgia [abstract]: Geol. Soc. America Abstracts with Programs, v. 2, p. 238, 1970.

PRATT, WALLACE EVERETT, 1885-

1. Memorial to Arville Irving Levorsen (1894-1965): Geol. Soc. America Bull., v. 77, p. P61-P66, port., 1966.
2. Memorial to Arville Irving Levorsen (1894-1965): Geol. Soc. America Proc. 1966, p. 279-284, port., 1968.

PRESTON, CHARLES DEAN, 1938-

1. The paleocurrents of the [Silurian] Red Mountain Formation of [northwestern] Georgia: MS Thesis, Emory Univ., 45 p., illus., 1965.

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

PRICE, VANEATON, JR., 1942-

1. Distribution of trace elements in plutonic rocks of the southeastern [United States] Piedmont: Ph D Thesis, Univ. North Carolina, 95 p., 1969; [abstract], Dissert. Abs. Internatl., part B, v. 31, p. 254, 1970.

PRIOR, GEORGE THURLAND, 1862-1936.

1. (and Hey, Max Hutchinson). Catalog of meteorites, 2d edition: London, British Mus. Nat. Hist., 432 p., 1953. A list of the then known meteorites includes those from Georgia. Very brief descriptions and some data are included. Only pieces of Canton, Dalton, Forsyth, Holland's Store, Locust Grove, Losttown, Lumpkin, Putnam County, and Union County are present in the museum.

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. Socs. 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. Socs. 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. Socs. 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, LAWRENCE DEWEY, 1934- , *see also* Crawford, Thomas Jones, 1

1. The Danburg Granite [Wilkes and Lincoln Counties] [abstract]: Georgia Acad. Sci. Bull., v. 23, p. 70-71, 1965.
2. Earliest effects of weathering on Elberton Granite [Oglethorpe County]: Georgia Acad. Sci. Bull., v. 23, p. 34-35, 1965. Groundwater, moving along sheeting, has produced alteration of allanite, leaching of iron oxide dust from feldspar, and increased opacity of the feldspars.
3. Tectonic origin of color in pink granites of the Elberton District [Piedmont] Georgia [abstract]: Georgia Acad. Sci. Bull., v. 24, p. 75-76, 1966.
4. (and Plunkett, Erle Lee, Jr.) . Fe/(Fe + Mg) ratio in biotite from [Piedmont] Georgia granitic rocks:Am. Mineralogist, v. 52, p. 902- 908, illus., 1967. Biotites from schist and gneiss xenoliths and from country rock have a different refractive index than does the biotite from the granite. Samples are from the Elberton adamellite (Elbert County), Gray grandiorite (Jones County), Stone Mountain adamellite (DeKalb County), Danburg adamellite (Wilkes and Lincoln Counties), and the Columbia County adamellite.
5. Zeolites in the Georgia Piedmont: Georgia Acad. Sci. Bull., v. 25, p. 18-25, 1967. Mineralogical data are given for zeolites from Clarke, Elbert, Lincoln, and Putnam Counties. All are of a hydrothermal or cavity-filling type. Zeolites are probably more widespread in Georgia than expected, but are obscured by weathering.
6. Nature of the Elberton Batholith [Elbert and Oglethorpe Counties] [abstract], *in* Abstracts for 1966: Geol. Soc. America Spec. Paper 101, p. 372, 1968.

RAND, LENOX HAWES, *see* Kerr, James R., 1

RAY, CLAYTON EDWARD, 1933- , *see also* Lipps, Emma Lewis, 1

1. (and Lipps, Emma Lewis). An assemblage of Pleistocene vertebrates and mollusks from Bartow County, Georgia [abstract]: Georgia Acad. Sci. Bull., v. 23, p. 67, 1965.
2. A new chipmunk, *Tamias aristus* from the Pleistocene of [Bartow County] Georgia: Jour. Paleontology, v. 39, p. 1016-1022, illus., 1965. *Tamias aristus* from a Pleistocene bone-filled fissure from the Ladds Mountain quarry is described and illustrated.
3. Pleistocene mammals from Ladds, Bartow County, Georgia: Georgia Acad. Sci. Bull., v. 25, p. 120-150, illus., 1967. Forty-eight species of mammals are present at least, of which 25 percent are extinct. Lists, tables of data, and some illustrations are included.
4. (and Lipps, Emma Lewis). Additional notes on the Pleistocene mammals from Ladds [Bartow County], Georgia [abstract]: Georgia Acad. Sci. Bull., v. 26, p. 63, 1968.
5. (and Lipps, Emma Lewis). Southerly distribution of porcupine in eastern United States during late Quaternary time [abstract]: Georgia Acad. Sci. Bull., v. 28, no. 2, p. s24, 1970.

READE, ERNEST HERBERT, JR., 1936-

1. The geology of the Tate-Marble Hill area [Pickens County], Georgia [abstract]: Georgia Acad. Sci. Bull., v. 23, p. 69, 1965.

REED, EUGENE CLIFTON, 1901-

1. George Evert Condra (1869-1958), geologist, paleontologist, naturalist, conservationist: Nebraska Acad. Sci. Proc., v. 77, p. 27, 1967.

REED, JOHN CALVIN, JR., 1930-

1. (and Owens, James Patrick, and Stockard, Henry Patton). Interpretation of basement rocks beneath the Atlantic Coastal Plain from reconnaissance aeromagnetic data [abstract], *in* Abstracts for 1967: Geol. Soc. America Spec. Paper 115, p. 182-183, 1968.

REED, STEPHEN JARVIS BRENT, 1937-

1. Phosphorous in meteoritic nickel-iron, *in* Meteorite research: Dordrecht, Holland, D. Reidel Pub. Co., p. 749-762, illus., 1969; discussions, p. 839-840. Included with many others are data from the Locust Grove, Henry County meteorite.

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-

1. (and Pomeroy, Lawrence Richards). The flux of phosphorous through undisturbed salt-marsh ecosystem [abstract]: Geol. Soc. America Abstracts with Programs 1969, part 4, p. 67-68, 1969.

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

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

RICH, MARK, 1932-

1. Mississippian trilobites from [Catoosa County] northwestern Georgia: Jour. Paleontology, v. 40, p. 1381-1384, illus., 1966. *Australosutura georgiana* and two species of *Proteus* from the Mississippian Lavender Shale in Catoosa, County are described and illustrated.

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.
2. Pleistocene shorelines of North and South America: INQUA Cong. 6th, Rept., vol. 1, p. 299-309, 1965. An extremely cursory review of the current research being conducted on the Quaternary shorelines of the United States includes those of Georgia. Two terraces are recognized.
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. Socs. 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-

1. A morphometric comparison of drainage basins in the southeastern [Georgia] Coastal Plain: MA Thesis, Univ. Georgia, 127 p., illus., 1965.

RIFE, DAVID LEROY, 1941-

1. Barite fluid inclusion geothermometry, Cartersville Mining District [Bartow County], northwestern Georgia: MS Thesis, Univ. Tennessee, 69 p., 1969.

RISTOW, WALTER WILLIAM, 1908-

1. Erwin [Josephus] Raisz, 1893-1968: Spec. Libraries Assoc. (New York), Geography and Map Div. Bull. 75, p. 9-10, 1969.

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

1. Chronology of tectonic movements in the Appalachian region of eastern North America: Am. Jour. Sci., v. 265, p. 408-427, 1967. A review of tectonic activity alludes to some of that in Georgia. Late Precambrian, Mississippian, and post-Pennsylvanian orogenies have left evidence in Georgia.
2. The tectonics of the Appalachians: New York, Wiley Interscience Press, 271 p., illus., 1970. A review of the structural and historical geology of the entire Appalachian Mountain region includes that part in Georgia. Many sketch maps are included.

ROSS, ARNOLD, 1936-

1. A new cirriped from the Eocene of [Burke County] Georgia: Florida Acad. Sci. Quart. Jour., v. 28, p. 59-67, illus., 1965. *Kathpalmeria georgiana* from the Eocene Barnwell Formation at Shell Bluff Landing, Burke County, is described and illustrated.

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*

Herrick, Stephen Marion, 6

SALOTTI, CHARLES ANTHONY, 1927-

1. (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.
3. Behavior of trace amounts of specific elements in ground water from crystalline rocks, central Savannah River area [Piedmont], Georgia [abstract], *in* Abstracts for 1967: Geol. Soc. America Spec. Paper 115, p. 499, 1968.
4. (and Matthews, Vincent, 3d). 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.], 30 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

SCHAIRER, JOHN FRANK, 1904-1970.

1. Leason Heberling Adams [1887-1969]: Am. Jour. Sci., v. 267, p. 1256, 1969.

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* Pinson, William Hamet, Jr., 1, 2

1. The composition and origin of tektites [abstract]: Massachusetts Inst. Tech. Abstracts of Theses 1961-1962, p. 207-208, 1963.

2. (and Pinson, William Hamet, Jr.). Variation of strontium isotopes in [Dodge County] tektites: Geochimica 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-

1. (and Young, David Anderson, and Foote, Erick Ensign, and Nicholson, George Richardson, Jr.). [Map of] Rusty's Cave, Dade Co., Ga.: Georgia Underground, v. 3, after p. 34, scale, 1 inch to 100 feet, 1966.
2. (and Holland, Walter Fox, Jr., and Sturrock, James Caffey). [Map of] Cemetery Pit [cave], Dade Co., Ga.: Georgia Underground, vol. 5, no. 1, scale, 1 inch to 100 feet, 1968.
3. (and Stafford, Elizabeth Ann). [Map of] Four Kings Cave, Walker Co., Ga.: Georgia Underground, v. 5, no. 2, scale, 1 inch to 80 feet, 1968.
4. (and Stafford, Elizabeth Ann, and Lee, Jerry Jeffrey, and Resager, Jon Christian). [Map of] Mtn. Cove Farm Cave, Walker Co., Ga.: Georgia Underground, v. 5, p. 115, scale, 1 inch to 40 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.
6. (and Reeves, Jerry Lynn, and Reese, Edward Joseph). [Map of] J. T.'s Cave, Dade Co. Ga.: Georgia Underground, v. 6, no. 1, [p. 11], scale, 1 inch to 20 feet, 1969.
7. (and Holland, Walter Fox, Jr., and Reese, Edward Joseph, and Pennington, Kenneth Eugene). [Map of] Little Nicka Cave, Dade Co., Ga.: Georgia Underground, v. 6, no. 1 [p. 13], scale, 1 inch to 40 feet, 1969.
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* Colquhoun, Donald John, 3

SCRUDATO, RONALD JOHN, 1940-

1. Origin of east-central Georgia kaolin deposits [abstract]: Geol. Soc. America Abstracts with Programs 1969, part 7, p. 203, 1969; Econ. Geology, v. 64, p. 834, 1969.
2. (and Bond, Thomas Alden). Cretaceous-Tertiary boundary of east-central Georgia [Coastal Plain] [abstract]: Geol. Soc. America Abstracts with Programs, v. 2, p. 240, 1970.
3. Kaolin and associated sediments [Cretaceous and Eocene] of east-central [Coastal Plain] Georgia: Ph D Thesis, Univ. North Carolina, 97 p., illus., 1969; [abstract], Dissert. Abs. Internatl., part B, v. 31, p. 256, 1970.

SENFTLE, 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.
3. Geologic evidence of a buried Miocene fault in Thomas County, southwestern Georgia [abstract], *in* Abstracts for 1964: Geol. Soc. America Spec. Paper 82, p. 181-182, 1965.
4. Ground-water resources and geology of Seminole, Decatur, and Grady Counties, Georgia: U.S. Geol. Survey Water-Supply Paper 1809Q, p. 1-30, illus., 1965. A complete geological description

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 south-central 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 limestones 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

SHROCK, ROBERT RAKES, 1904-

1. Memorial to Hervey Woodburn Shimer (1872-1965): Geol. Soc. America Bull., v. 77, p. P73-P79, port., 1966.
2. Memorial to Hervey Woodburn Shimer (1872-1965): Geol. Soc. America Proc. 1966, p. 379-385, port., 1968.

SHRUM, REBECCA ALLEEN, 1949-

1. [Map of] Distribution of kaolin and fuller's earth mines and plants in Georgia and north Florida: Atlanta, Georgia Dept. Mines, Mining and Geology, scale, 1 inch to 250,000 inches, 1970.

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

SIMMONS, WILLIAM BRUCE, JR., 1943-

1. Mineralogy of south Georgia [Echols and Charlton Counties] and North Carolina phosphorite: MS Thesis, Univ. Georgia, 77 p., illus., 1968.
2. (and Radcliffe, Dennis). Composition of apatite from North Carolina and [Echols County] south Georgia phosphorites [abstract]: Geol. Soc. America Abstracts with Programs 1969, part 4, p. 75-76, 1969.

SIPLE, GEORGE ELMER, 1914-

1. Artesian aquifer systems of the central Savannah River area, South Carolina-[Coastal Plain] Georgia [abstract], *in* Abstracts for 1966: Geol. Soc. America Spec. Paper 82, p. 187, 1965.
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. (and Mapper, David, and Fouché, Karel Frederick). The distribution of some trace elements in iron meteorites, as determined by neutron activation: Geochimica et Cosmochimica Acta, v. 31, p. 673-720, illus., 1967. Ten trace elements are sought, and their relationships to a classification of iron meteorite is discussed. Included are meteorites from Walker County and the Canton iron, from Cherokee County.
2. (and Mapper, David and Fouché, Karel Frederick). A comparison of trace element distribution in the metal phase of chondrites and iron meteorites, *in* Origin and distribution of the elements: New York, Pergamon Press, p. 329-344, illus., 1968. Thirteen trace elements are measured, and there are distinct differences between the chondrite-metal phases and the irons. Various relationships are discussed. Included are data from Walker and Cherokee County iron meteorites.

SMEDLEY, JACK ELWOOD, 1919-

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-

1. (and Sohl, Norman Frederick, and Yochelson, Ellis Leon). New Upper Cretaceous Amphineura (Mollusca) [Quitman County]: U.S. Geol. Survey Prof. Paper 593 G, p. G1-G9, illus., 1968. *Chiton (Chiton) berryi* from the Ripley Formation in Quitman County is described and illustrated.

SMITH, CHARLES WILLIAM, 1920- , *see* Higgins, Michael Wicker, 4

SMITH, DAVID HUSTON, 1937- , *see* Wampler, Jesse Marion, 1

SMITH, E. E., *see* Pomeroy, Lawrence Richards, 1

SMITH, JAMES WILLIAM, 1934- , *see also* Bentley, Robert Donald, 1; Judd, James Brian, 1; Milici, Robert Calvin, 1, 2

1. (and Spalvins, Karlis). The [Cambrian] Conasauga Formations in Bartow County, Georgia, compared with the formations near the type localities [abstract]: Georgia Acad. Sci. Bull., v. 25, p. 89-90, 1967.
2. (and Pickering, Samuel Marion, Jr., and Landrum, Joe Roger). 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], 68 p., illus., 1967. Numerous holes are drilled in most of the counties of the eastern Coastal Plain, and the data are presented in tabular form; heavy minerals, in particular, are noted. All of the holes are in surficial material, and the areas of potential concentration are outlined. Analyses are included.
3. (and Green, Martha Anne). Geologic map of Georgia: Atlanta, Georgia Dept. Mines, Mining and Geology, scale, 1 inch to 7,500,000 inches, 1968.
4. (and Wampler, Jesse Marion, and Green, Martha Anne). Isotopic dating and metamorphic isograds of the crystalline rocks of [Blue Ridge and Piedmont] Georgia, *in* Precambrian-Paleozoic Appalachian problems: Georgia Geol. Survey Bull. 80, p. 121-139, illus., 1969. Mica dates of 350 my to the northwest, and of 250 my to the southeast, are shown. The metamorphic isograds show one period of metamorphism of upper Paleozoic age. Two older mica dates may be Precambrian or lower Paleozoic. Zircon dates of 450 my reflect Taconic igneous activity or some other thermal event.
5. (and Green, Martha Anne). Large granitic exposures in [Piedmont] Georgia [abstract]: Georgia Acad. Sci. Bull., v. 27, p. 93, 1969.
6. Mineral resource map of Georgia: Atlanta, Georgia Dept. Mines, Mining and Geology, scale, 1 inch to 7,500,000 inches, 1969.

SMITH, MARION OTIS, 1942-

1. (and others). [Map of] Gypsy Cave, Dade County, Georgia: Georgia Underground, v. 7, no. 1, p. 13, scale, 1 inch to 15 feet, 1970.

SMITH, WILLIAM CAREY, 1944- , *see* Judd, James Brian, 1

SNIPES, DAVID STRANGE, 1928-

1. Stratigraphy and sedimentation of the [Cretaceous] Middendorf Formation between the Lynches River, South Carolina, and the Ocmulgee River [Coastal Plain] Georgia: Ph D Thesis, Univ. North Carolina, 140 p., illus., 1965; [abstract], Dissert. Abs., part B, v. 27, p. 213-214, 1966.

SOCOLOW, ARTHUR ABRAHAM, 1921-

1. In memoriam, Ralph W[alter] Stone [1876-1964]: State Geologists Jour., v. 17, no. 2, p. 32, 1965.

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

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

1. Recent arkosic alluvium at Mt. Arabia, DeKalb County, Georgia [abstract]: Georgia Acad. Sci. Bull., v. 24, p. 75, 1966.
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-

1. Memorial to Marcellus H[enry] Stow — May 19, 1902 - November 27, 1957: Am. Mineralogist, v. 55, p. 603-607, port., 1970.

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

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

STANLEY, EDWARD ALEXANDER, 1929-

1. (and Duncan, Wilbur Howard, and Montgomery, Florence). Paleobotanical investigation of a [Eocene] lower Tertiary clay from [Bartow County] northwestern Georgia [abstract]: Georgia Acad. Sci. Bull., v. 24, p. 57-58, 1966.

STEARNS, RICHARD GORDON, 1927-

1. (and Milici, Robert Calvin). Structure of the southern Appalachian coal field and its origin [and northwestern Georgia] [abstract], *in* Abstracts for 1967: Geol. Soc. America Spec. Paper 115, p. 212, 1968.

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

STEPHENSON, RICHARD ALLEN, 1931-

1. Channel response on the upper Hiwassee River [Blue Ridge] [abstract]: Georgia Acad. Sci. Bull., v. 28, no. 2, p. s24-s25, 1970.

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

STEVENSON, FRANK JAY, 1922-

1. Chemical state of the nitrogen in rocks: Geochimica et Cosmochimica Acta, v. 26, p. 797-809, illus., 1962. Nitrogen occurs in the ammonium ions within the lattice work of silicates. Granite from Stone Mountain, DeKalb County, is analyzed along with many others from elsewhere.

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-

1. (and Colly, Wallace Henry Clifton, Jr.). [Map of] Major Pullim Cave, Murray Co., Ga.: Georgia Underground, v. 1, no. 4, p. 39, scale, 1 inch to 50 feet, 1964.
2. (and Colly, Wallace Henry Clifton, Jr.). [Map of] Pine Chapel Cave, Gordon Co., Ga.: Georgia Underground, v. 1, no. 5, p. 54, scale, 1 inch to 50 feet, 1964.

STRALEY, HARRISON WILSON, 3d, 1906-

1. Magnetic map of the Georgia Coastal Plain [abstract]: Am. Geophysical Union Trans., v. 46, p. 70, 1965.
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.

STUIVER, MINZE, 1929-

1. Yale natural radiocarbon measurements [Part] 9: Radiocarbon, v. 11, p. 545-658, 1969. Organic silt from Quicksand Pond in Bartow County is 20,000$\pm$240 years old. Gytta, from Lake Louise in Lowndes County, is 8510$\pm$100 years old.

STULL, RAY THOMAS, 1875-1944.

1. (and Bole, George Addision). Beneficiation and utilization of Georgia clays: U.S. Bur. Mines Bull. 252, 72 p., illus., 1926. Extremely cursory descriptions of the occurrence and origin of bauxite and kaolin clays are included.

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, Mining 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.

SWEENEY, 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-

1. (and Ehmann, William Donald). The abundance of antimony in meteorites, tektites, and rocks by neutron activation analysis: Geochimica et Cosmochimica Acta, v. 31, p. 2007-2026, illus., 1967. The antimony content of the troilite in the Sardis meteorite is included.

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 Appalachicola 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.
3. Multiple influences on sea-level changes in the Tertiary [Coastal Plain] [abstract], *in* Abstracts for 1967: Geol. Soc. America Spec. Paper 115, p. 501-502, 1968.

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.
2. Oxygen isotope studies of hydrothermal mineral deposits, *in* Geochemistry of hydrothermal ore deposits: New York, Holt, Rinehart, and Winston, p. 109-142, illus., 1967. A discussion of the technique and use of oxygen-isotope geothermometry includes data from the Elberton Granite in Elbert County. The granite formed at 785° C.

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-

1. Supratidal origin of Appalachian Basin [Paleozoic] dolostone [abstract], *in* Abstracts for 1968: Geol. Soc. America Spec. Paper 121, p. 470-471, 1969.

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

THOM, BRUCE GRAHAM, *see* Gagliano, Sherwood 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-

1. Compilation of Phanerozoic geochronological data for eastern North America, *in* Geochronology of North America: Natl. Acad. Sci.-Natl. Research Council, Nuc. Sci. Ser. Rept. 41, p. 181-220, 1965. Data in tabular form include 16 different dates from Georgia, all in the Piedmont. They vary from 235 to 347 my.

TIWARI, SURESH CHANDRA, 1932-

1. Source and behavior of potassium in Cecil soils [Piedmont]: Ph D Thesis, Univ. Georgia, 1970; [abstract], Dissert. Abs., part B, v. 30, p. 2985-2986, 1970.

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. Socs. 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-

1. (and Gibson, Thomas George). Stratigraphic evidence for widespread early Eocene volcanism, eastern North America [abstract], *in* Abstracts for 1968: Geol. Soc. America Spec. Paper 121, p. 299-300, 1969.

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.
2. Culturally accelerated sedimentation on the middle Georgia Piedmont: MA Thesis, Univ. Georgia, 110 p., illus., 1969; [abstract], Georgia Acad. Sci. Bull., v. 28, no. 2, p. s25, 1970.

TUREKIAN, KARL KAREKIN, 1927-

1. The meteorite and tektite collections of Yale University: Postilla, no. 101, 16 p., 1966. Parts of Canton, Dalton, Forsyth, Holland's Store, Losttown, Putnam County, and Union County meteorites are present in the Yale collection.

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

UCHUPI, ELEAZAR, 1928-

1. Map showing relation of land and submarine topography, Nova Scotia to Florida: U.S. Geol. Survey Misc. Geol. Invs. Map I 451, 3 sheets, scale, 1 inch to 1,000,000 inches, 1965.

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

Corps of Engineers, Office of Appalachia Studies, p. III7-51 -69, illus., 1969. The geologic conditions for the damsite on the North Oconee River are satisfactory. Four cores show the foundation rock to be predominantly metamorphic.

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 Whitfield 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. II9-2-18, 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

1. Potential sources of aluminum: U.S. Bur. Mines Inf. Circ. 8335, 148 p., 1967. Cursory descriptions of various sources of aluminum in the United States include bauxite, bauxitic clay, and kaolin from the Georgia Coastal Plain. Analyses are included.
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 GEODETIC SURVEY, *see also* U.S. Geological Survey, 5

1. [Map of] The horizontal intensity of the earth's magnetic force expressed in centimeter-gram-second units, epoch 1965.0 — H.O. 1701 (8th edition): Washington, D.C., U.S. Naval Oceanographic Office, scale, 1 inch to 39,000,000 inches. 1966.
2. [Map of] The magnetic inclination, or dip, epoch 1965.0 — H.O. 1700 (8th edition): Washington, D.C., U.S. Naval Oceanographic Office, scale, 1 inch to 39,000,000 inches, 1966.
3. [Map of] The total intensity of the earth's magnetic force expressed in centimeter-gram-second units, epoch 1965.0 — H.O. 1703 (3rd edition): Washington, D.C., U.S. Naval Oceanographic Office, scale, 1 inch to 39,000,000 inches, 1966.
4. [Map of] The vertical intensity of the earth's magnetic force expressed in centimeter-gram-second units, epoch 1965.0 — H.O. 1702 (5th edition): Washington D.C., U.S. Naval Oceanographic Office, scale, 1 inch to 39,000,000 inches, 1966.
5. [Map] Isogonic chart for the United States (and Alaska and Hawaii), 1970.0...: Washington D.C., U.S. Dept. Commerce, scale, 1 inch to 5,000,000 inches, revised, 1970.
6. [Map of] Seismicity of the United States — NEIC 3012: Washington D.C., U.S. Dept. Commerce, Envir. Sci. Servs. Adm., 1 sheet, 1970.
7. [Map of] World seismicity, 1961-1969 — NEIC 3005: Washington, D.C., U.S. Dept. Commerce, Envir. Sci. Servs. Adm., 1970.

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.
2. [Map of] Concentration of dissolved minerals in the ground water [of the United States], *in* National Atlas of the United States: Washington, D.C., U.S. Geol. Survey, scale, 1 inch to 17,000,000 inches, p. 124, 1970.
3. [Maps of] Energy raw materials [of the United States], *in* National Atlas of the United States: Washington, D.C., U.S. Geol. Survey, scale, 1 inch to 34,000,000 inches, p. 185, 1970.
4. [Map of] Industrial and chemical minerals [of the United States], *in* National Atlas of the United States: Washington, D.C., U.S. Geol. Survey, scale, 1 inch to 17,000,000 inches, p. 184, 1970.
5. (and U.S. Coast and Geodetic Survey, and Environmental Science Services Administration). [Map of] Major recorded earthquakes [in the United States], *in* National Atlas of the United States: Washington, D.C., U.S. Geol. Survey, scale, 1 inch to 7,500,000 inches, p. 66-67, 1970.
6. [Map of] Organic fuel deposits [of the United States], *in* National Atlas of the United States: Washington, D.C., U.S. Geol. Survey, scale, 1

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

7. [Map of] Productive aquifers and withdrawals from wells [in the United States], *in* National Atlas of the United States: Washington, D.C., U.S. Geol. Survey, scale, 1 inch to 7,500,000 inches, p. 122-123, 1970.

VALLELY, JAMES LEO, 1904- , *see* Kerr, James R., 1

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

VICKERS, MICHAEL ALAN, 1943-

1. Paleontology of the Blufftown Formation (Upper Cretaceous), Chattahoochee River region, Georgia-Alabama: MS Thesis, Florida State Univ., 1967.

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-

1. An Eocene sea-cow tooth from Twiggs County, Georgia [abstract]: Georgia Acad. Sci. Bull., v. 27, p. 93-94, 1969.

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.
2. Ground-water data from the Prince William Sound [Alaska] earthquake: Georgia Mineral Newsletter, v. 17, p. 46, illus., 1964-1965. Twenty-four water wells responded to the passage of earthquake waves, and the largest fluctuation was over 10 feet.
3. Relation of the [Oligocene] Suwanee Limestone to the [Oligocene] Flint River Formation, Mitchell County, Georgia [abstract], *in* Abstracts for 1966: Geol. Soc. America Spec. Paper 82, p. 311, 1965.
4. Notes on the stratigraphy of Pulaski County, Georgia [abstract], *in* Abstracts for 1965: Geol. Soc. America Spec. Paper 87, p. 265, 1966.
5. Hydrologic effects of the [1964] Alaska earthquake in the southeastern United States [abstract], *in* Abstracts for 1967: Geol. Soc. America Spec. Paper 115, p. 503-504, 1968.
6. Depositional structure in the Georgia Coastal Plain [abstract]: Georgia Acad. Sci. Bull., v. 27, p. 94, 1969.

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).

WADA, 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^3COO has been injected. There is a structural control over the intercalation phenomena.
2. (and Yamada, Hiroshi). Hydrazine intercalation — intersalation for differentiation of kaolin minerals [Bibb County] from chlorites: Am. Mineralogist, v. 53, p. 334-339, illus., 1968. Kaolinite from near Macon, Bibb County and others from elsewhere, if intercalated with hydrazine, can be easily distinguished by DTA, from chlorite.

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.
3. Submergence along the Atlantic coast of [Glynn County] Georgia, *in* Geological Survey research 1968: U.S. Geol. Survey Prof. Paper 600 D, p.

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.

4. Notes on the position of a phosphate zone and its relation to ground water in coastal Georgia, *in* Geological Survey research 1970: U.S. Geol. Survey Prof. Paper 700C, p. C202-C205, illus., 1970. Gamma radiation logs from numerous wells along the coast show that the phosphate-bearing Miocene rocks are at or near the water table. Caution is urged for mining the phosphate below the sea floor for fear of salt-water intrusion.

WALKER, FORREST EUGENE, 1924-

1. (and Hartner, Florine Elizabeth). Forms of sulfur in U.S. coals [Walker County]: U.S. Bur. Mines Inf. Circ. 8301, 51 p., illus., 1966. Coal from the Durham seam in Walker County is included. There is 3.92 percent sulfur present.

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

WALL, WILLIAM JEPTHA, 1904-

1. Influence of soil types on stabilization of the Savannah River: Am. Soc. Civil Engineers Proc., v. 91, paper 4430 (Jour. Waterways and Harbors Div., no. WW3, part 1), p. 7-23, illus., 1965; discussions by Walter Culpin Carey, v. 92, (WW1), p. 134-136, 1966; reply by author, (WW3), p. 89-90, 1966. Water velocity in the river is shown to be the major influence on the nature of the bed load of the river. Many samples are taken.

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.

1. Marine and non-marine facies of the Upper Carboniferous of North America, *in* Sixieme Congres International de Stratigraphie et de Geologie du Carbonifiere, vol. 1: Maastrict, Ernest Van Aelst, p. 293-336, illus., 1969. A review of the Pennsylvanian rocks of North America includes those from northwestern Georgia. Those from Georgia are part of the delta-cycle facies and are entirely Morrowan in age.

WARR, JESSE JAMES, JR., 1921- , *see* Overstreet, William Courtney, 3

WARREN, FIELDING THOMAS, 1931-

1. (and Dunham, David Blair). [Map of] White River Cave, Polk Co., Georgia: Georgia Underground, v. 1, no. 2, scale, 1 inch to 60 feet, 1964; Speleo Digest [1964], p. I-48, [1966].

WARREN, WALTER CYRUS, 1907- , *see* Lang, Walter Barnes, 1

WASSON, JOHN TAYLOR, 1934-

1. The chemical classification of iron meteorites — [Part] 1, A study of iron meteorites with low concentrations of gallium and germanium: Geochimica et Cosmochimica Acta, v. 31, p. 161-180, illus., 1967. Putnam County iron has 0.51 ppm Ge and 2.00 ppm Ga. Its position in a suggested classification based on the ratios of these elements with the nickel is described.
2. (and Kimberlin, Jerome). The chemical classification of iron meteorites — [Part] 2, Irons and pallasites with germanium concentrations between 8 and 100 ppm: Geochimica et Cosmochimica Acta, v. 31, p. 2065-2093, illus., 1967. The concentrations of Ni, Ga, Ge, and Ir in the Social Circle meteorite are determined, and inferences about the parent body are made.
3. The chemical classification of iron meteorites — [Part] 3, Hexahedrites and other irons with germanium concentrations between 80 and 200 ppm: Geochimica et Cosmochimica Acta, v. 33, p. 859-876, illus., 1969. The Smithonia meteorite from Oglethorpe County has 5.86 percent Ni, 65.3 ppm Ga, 182 ppm Ge, and 34 ppm Ir.
4. The chemical classification of iron meteorites — [Part] 4, Irons with Ge concentration greater then 190 ppm and other meteorites associated with Group I: Icarus, v. 12, p. 407-423, illus., 1970. Included in this group are Pitts, from Wilcox County, and the Union County meteorites.
5. Ni, Ga, Ge, and Ir in the metal of iron-meteorites-with-silicate inclusions: Geochimica et Cosmochimica Acta, v. 34, p. 957-964, illus., 1970. The Pitts meteorite, from Wilcox County is analyzed, with many others from elsewhere, to show these elements and various relationships between them. They conform to another classification based upon mineralogy and texture of the inclusions.

WATTS, WILLIAM ARTHUR, 1930-

1. The full-glacial vegetation of [Bartow County] northwestern Georgia: Ecology, v. 51, p. 17-33, illus., 1970. Pollen from ponds in Bartow County has been dated at 22,900 years by radiocarbon. Pine dominates, but other trees are

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-

1. [Map of] Resources and production of major metals [in the United States], *in* National Atlas of the United States: Washington, D.C., U.S. Geol. Survey, scale, 1 inch to 7,500,000 inches, p. 178-179, 1970.

WEIGAND, PETER WOOLSON, 1943-

1. Major and trace element geochemistry of the Mesozoic dolerite dikes of eastern North America: Ph D Thesis, Univ. North Carolina, 172 p., 1970 [not seen].

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

1. (and Hoyt, John Harger). Burrows of *Callianassa major* Say, geologic indicators of littoral and shallow neritic environments [McIntosh County]: Jour. Paleontology, v. 38, p. 761-767, 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.

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.
2. [Arthur] Remington Kellogg, October 5, 1892-May 8, 1969: Soc. Vertebrate Paleontology News Bull. 87, p. 48-49, 1969.

WHITE, AMOS MC NAIRY, 1921- , *see* Overstreet, William Courtney, 3

WHITE, CHARLES DAVID, 1862-1935.

1. The stratigraphic succession of the fossil floras of the Pottsville Formation in the southern anthracite coal field, Pennsylvania [and Dade County, Georgia]: U.S. Geol. Survey Ann. Rept. 20, 1898-1899, Part 2, p. 755-918, illus., 1900. Plants from Dade County are used to correlate the Georgia coal beds with those in Pennsylvania, particularly the *Mariopteris pottsvillea* zone. Several of the species are new, and all are described and illustrated.

WHITE, WALTER STANLEY, 1915-

1. Bauxite deposits of the Warm Springs District, Meriwether County, Georgia: U.S. Geol. Survey Bull. 1199-I, p. I1-115, illus. incl. geol. map, 1965. The origin and occurrence of bauxite in vein-like bodies in Cretaceous rocks, on the down-dropped blocks of faults, are described. The reserves are negligible; analyses are included.
2. (and Denson, Norman McLaren, and Dunlap, John Crawford, and Overstreet, Elizabeth Fischer). Bauxite deposits of northwest Georgia: U.S. Geol. Survey Bull. 1199-M, p. M33-M41, illus. incl. geol. maps, 1966. Most of the bauxite deposits are in Floyd, Polk, and Bartow Counties, and occur in pockets of residual clays from the Knox Group. Numerous individual deposits are described. They are related to faulting. Analyses are included.

WHITLOW, JESSE WILLIAM, 1915- , *see* Overstreet, William Courtney, 2

WIGLEY, PERRY BRASWELL, JR., 1941-

1. Geology of the Hemp area, Fannin County, Georgia: MS Thesis, Univ. Virginia, 1965.

WIIK, HUGO BIRGER, 1916-

1. (and Mason, Brian Harold). Analyses of eight iron meteorites: Geochimica et Cosmochimica Acta, v. 29, p. 1003-1005, illus., 1965. The iron, nickel, and cobalt percentages for Canton, Cherokee County meteorite, are included.

WILLMAN, LEON DWIGHT, 1923-

1. Gem and mineral localities of southeastern United States, vol. 2: Jacksonville, Alabama, privately published, 271 p., illus., 1970. Many minerals are listed alphabetically and are located on the maps of the various states. Many are from the Georgia Piedmont and Blue Ridge provinces.

WILLOUGHBY, RALPH HENRY, 1945-

1. Report on the [Cambrian] archaeocyathids from near Emerson [Bartow County] Georgia [abstract]: Georgia Acad. Sci. Bull., v. 27, p. 94-95, 1969.

WILSON, LEONARD RICHARD, 1906-

1. Charles David White [1862-1935]: Oklahoma Geology Notes, v. 25, p. 246, port., 1965.

WILSON, ROBERT LAKE, 1924-

1. Pennsylvanian stratigraphy of the northern part of Sand Mountain, Alabama, [Dade County] Georgia and Tennessee: Ph D Thesis, Univ. Tennessee, 135 p., 1967; [abstract], Dissert. Abs., part B, v. 28, p. B2488, 1967.

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

WOLDSTEDT, PAUL, 1888-1973.

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.
3. Tectonic activity in North America as indicated by earthquakes, *in* The earth's crust and upper mantle: Am. Geophysical Union Mon. 13, p. 125-133, illus., 1969. A small-scale map shows earthquake epicenters in the United States and their relationship to geological-structure patterns. Most of those in Georgia are in the southern part.

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

WRIGHT, NANCY ELIN PECK, 1941-

1. New data on the petrography and petrology of the Stone Mountain Granite [DeKalb County] Georgia [abstract], *in* Abstracts for 1964: Geol. Soc. America Spec. Paper 82, p. 314, 1965.
2. Mineralogic variation in the Stone Mountain Granite [DeKalb County] Georgia: Geol. Soc. America Bull., v. 77, p. 207-210, illus., 1966. The variability of quartz, feldspar, microcline-oligoclase ratio, and muscovite-biotite ratio show parallelism with the east-west structural trend of the body. They suggest two distinct intrusions.

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 as example.

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

YARBOROUGH, HUNTER, JR.

1. Geologic history of the Gulf Basin [abstract], *in* Abstracts for 1967: Geol. Soc. America Spec. Paper 115, p. 244, 1968; Houston Geol. Soc. Bull., v. 10, no. 9, p. 22, 1968.

YEDLIN, NEAL L., 1908-

1. Memorial of Peter Zodac (Sept. 14, 1894-Jan. 27, 1967): Am. Mineralogist, v. 53, p. 619-622, port., 1968.

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

1. Charles Doolittle Walcott, March 31, 1850-February 9, 1927: Natl. Acad. Sci. Biog. Mem., v. 39, p. 471-540, port., 1967.
2. Charles Doolittle Walcott's [1850-1927] early life and budding career, 1850-1879 [abstract]: Geol. Soc. America Abstracts with Programs 1969, part 1, p. 65-66, 1969.

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

YOUNG, DAVID MARTIN, 1941-

1. [Map of] Johnson's Crook Cave (Dade County, Georgia): Speleo Digest [1964], p. I 45-46, illus., [1966]

ZAEHRINGER, JOSEF, 1929-1970.

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.

ZAPP, ALFRED DEXTER, 1916-1962.

1. Bauxite deposits of the Andersonville District [Macon, Schley, and Sumter Counties] Georgia: U.S. Geol. Survey Bull. 1199-G, p. G1-G37, illus. incl. geol. map, 1965. Bauxite occurs in lenses of kaolin in the Nanafalia Formation of lower Eocene age. Numerous deposits are described, as are the rocks which enclose them. Analyses are included.
2. (and Clark, Lorin Delbert). Bauxite in areas adjacent to and between the Springvale [Quitman County] and Andersonville [Sumter County] Districts, Georgia: U.S. Geol. Survey Bull. 1199H, p. H1-H10, illus. incl. geol. map, 1965. Bauxite occurs in kaolin beds in the lower Eocene Nanafalia Formation, and sporadically in sinkholes in the underlying Paleocene limestone; it is accordingly, very irregularly distributed. Paleocene and Eocene stratigraphy is discussed.

ZEITNER, 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 wherein 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

1. (and Taylor, Patrick Timothy, and Dennis, Leonard S.). Geologic implications of aeromagnetic data for the eastern continental margin of the United States [abstract], *in* Transactions of the National Symposium on Ocean Sciences & Engineering of the Atlantic Shelf: Philadelphia, Marine Tech. Soc., Delaware Valley Sec., p. 283 [1968]; *in* Abstracts for 1967: Geol. Soc. America Spec. Paper 115, p. 247, 1968; Am. Geophysical Union Trans., v. 49, p. 330, 1968.
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 paralleling the coast which bends westward, trending east-west, to cross the southern part of Georgia. Other anomalies in Georgia are terminated by this east-west trending anomaly. Structural and possibly crustal control is discussed as a possible source for this anomaly.
3. (and Andreason, Gordon Ellsworth, and Cain, Joseph Carter). Magnetic anomalies from satellite magnetometer: Jour. Geophysical Research, v. 75, p. 4007-4015, illus., 1970. A map of the United States made from proton-magnetometer measurements from *Cosmos* 49 is given. Georgia shows a low (less than 10 gammas) in the northeast, a high (0 gammas) in the northwest, and between 0 and -10 gammas elsewhere.

ZODAC, PETER, 1894-1967.

1. Garnet sands from Georgia [letter from Samuel P. Cronheim]: Rocks and Minerals, v. 28, nos. 1-2, p. 56-57, 1953. Gold-bearing rubellite (tourmaline) sand from Dukes Creek and the Chattooga River in White County, is described. Garnets are common.

ZUBOVIC, PETER, 1915-

1. (and Stadnichenko, Taisia Maximovna, and Sheffey, Nola Bewley). Distribution of minor elements in coals of the Appalachian region [Walker County]: U.S. Geol. Survey Bull. 1117-C, p. C1-C37, illus., 1966. Spectrochemical analyses of coal ash from three sites in Walker County are included. Fifteen minor elements are present.

ANONYMOUS, Y.B., 1930-

1. In Memoriam — Wilbur Armistead Nelson, 1890-1969: State Geologists Jour., v. 21, p. 30-31, 1969.

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BY COUNTY, SUBJECT, AND GEOLOGICAL AGE