

# Bibliography of North American Geology, 1960

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G E O L O G I C A L   S U R V E Y   B U L L E T I N   1 1 9 6



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*The principal contributors to this volume were James W. Clarke, Georgianna D. Conant, Margaret Cooper, Wanda Lee Grimes, Bettie S. Hackman, Virginia M. Jussen, Ruth Reece King, Elisabeth S. Loud, Mildred Challman Mead, Florence V. Oftedahl, Douglas W. Rankin, Virginia E. Rees, and Walter S. White*





**UNITED STATES DEPARTMENT OF THE INTERIOR**

**STEWART L UDALL, *Secretary***

**GEOLOGICAL SURVEY**

**Thomas B. Nolan, *Director***

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# BIBLIOGRAPHY OF NORTH AMERICAN GEOLOGY

1960

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## INTRODUCTION

The current annual volume lists publications that appeared during 1960 concerning the geology of the North American continent, Greenland, the West Indies and adjacent islands, Hawaii, Guam, and other island possessions, but not the trust territories of the United States. Articles by American authors published in foreign journals are cited if they deal with North American localities or are of a general nature, but not if they deal only with foreign areas. Articles on North America by foreign authors are included regardless of place of publication while those of a general nature are included only if they appeared in North American journals.

The citations are listed alphabetically by author, with full title and publication data. There follows a subject index to the papers cited. Geologic names in the index are those used by the individual authors, and their listing here does not imply approval by the Geological Survey.

The principal contributors to this volume were James W. Clarke, Georgiana D. Conant, Margaret Cooper, Wanda Lee Grimes, Bettie S. Hackman, Virginia M. Jussen, Ruth Reece King, Elisabeth S. Loud, Mildred Challman Mead, Florence V. Oftedahl, Douglas W. Rankin, Virginia E. Rees, and Walter S. White.

Assistance was also given by Margaret E. Barcroft, George F. Corchary, A. A. Drake, Jr., Alice E. French, Esther A. Holm, Henry E. Holt, Walter P. Ketterer, P. L. Killeen, Arthur R. Kinkel, Jr., Doris L. Low, Robert G. Luedke, J. P. Minard, J. P. Owens, Roscoe M. Smith, Harold W. Sundelius, Martha S. Toulmin, and Ralph E. Van Alstine.

The Bibliography of North American Geology comprises the following bulletins: 746-747 (1785-1918), 823 (1919-28), 937 (1929-39), 1049 (1940-49), 985 (1950), 1025 (1951), 1035 (1952-53), 1054 (1954), 1065 (1955), 1075 (1956), 1095 (1957), 1115 (1958), and 1145 (1959).



## SERIALS

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The following list gives the abbreviated title of periodicals and serials most commonly cited in this bibliography, their complete titles, as used in library catalogs and the "Union List of Serials," and the place of publication. Periodicals cited only infrequently have been omitted from this list, but for those published in foreign countries, the place of publication has been included in the citation in the bibliography proper. Guidebooks, proceedings, and related types of literature prepared for special conferences, congresses, and symposiums are not listed here as serials but are cited in the bibliography proper under the name of the editor or of the issuing society.

- Acad Sci [Paris] Comptes Rendus -- Comptes Rendus de l'Académie des Sciences Paris, France
- Acta Cryst. -- Acta Crystallographica International Union of Crystallography. Copenhagen, Denmark
- Akad Nauk SSSR, Komm Izucheniyu Chetvertichnogo Perioda Byull -- Akademiia Nauk SSSR, Kommissiia po Izucheniyu Chetvertichnogo Perioda Byulleten Moscow, U.S.S.R.
- Alabama Acad. Sci Jour -- Journal of the Alabama Academy of Science Montevallo, Alabama
- Alabama Geol Survey Bull --
- Alabama Geol Survey County Rept. --
- Alabama Geol Survey Inf Ser --
- Alabama Geol Survey Map --  
     Geological Survey of Alabama Bulletin and Geological Survey of Alabama County Report and Geological Survey of Alabama Information Series and Geological Survey of Alabama Map University, Alabama.
- Alaska Univ Geophys Inst [Rept. Ser] -- Geophysical Institute of the University of Alaska [Report Series]. College, Alaska
- Alberta Dept. Mines and Minerals Mines Div Ann Rept. -- Annual Report of the Mines Division of the Department of Mines and Minerals of Alberta Edmonton, Alberta.
- Alberta Soc Petroleum Geologists Jour -- Journal of the Alberta Society of Petroleum Geologists Calgary, Alberta
- Am Alpine Jour -- American Alpine Journal. American Alpine Club New York, New York
- Am Antiquity -- American Antiquity Society for American Archeology Washington, D. C.
- Am Assoc Adv Sci Pub -- American Association for the Advancement of Science Publication Washington, D. C.
- Am Assoc Petroleum Geologists Bull -- Bulletin of the American Association of Petroleum Geologists Tulsa, Oklahoma
- Am Assoc Petroleum Geologists Pacific Sec Correlation Sec -- American Association of Petroleum Geologists, Pacific Section, Correlation Section Los Angeles, California
- Am Ceramic Soc Bull. --
- Am Ceramic Soc Jour --  
     American Ceramic Society Bulletin and Journal of the American Ceramic Society. Columbus, Ohio
- Am Geog Soc Spec Pub -- American Geographic Society Special Publication New York, New York.
- Am Geophys Union Trans -- American Geophysical Union Transactions. Washington, D. C.
- Am Inst. Mining, Metall., and Petroleum Engineers Trans. -- Transactions of the American Institute of Mining, Metallurgical, and Petroleum Engineers New York, New York

- Am Jour. Botany -- American Journal of Botany Botanical Society of America, Baltimore, Maryland
- Am Jour Phys. Anthropology -- American Journal of Physical Anthropology. Wistar Institute of Anatomy and Biology Philadelphia, Pennsylvania.
- Am Jour. Sci -- American Journal of Science New Haven, Connecticut.
- Am. Jour Sci Radiocarbon Supp -- American Journal of Science Radio-carbon Supplement New Haven, Connecticut
- Am. Mineralogist -- American Mineralogist. Mineralogical Society of America. Washington, D. C.
- Am Mus Nat History Bull -- Bulletin of the American Museum of Natural History. New York, New York
- Am. Mus Novitates -- American Museum Novitates. American Museum of Natural History New York, New York.
- Am Naturalist -- American Naturalist. Arizona State University. Tempe, Arizona
- Am Petroleum Inst. Proc. -- American Petroleum Institute Proceedings. New York, New York.
- Am. Philos Soc Proc. --
- Am Philos Soc. Trans --
- Am Philos. Soc Year Book. --  
 Proceedings of the American Philosophical Society and Transactions of the American Philosophical Society and American Philosophical Society Year Book Philadelphia, Pennsylvania
- Am Scientist -- American Scientist Society of the Sigma Xi New Haven, Connecticut
- Am Soc. Civil Engineers Proc., Jour. Air Transport Div. --
- Am Soc Civil Engineers Proc , Jour. Highway Div --
- Am. Soc Civil Engineers Proc., Jour Hydraulics Div. --
- Am Soc Civil Engineers Proc., Jour Irrigation and Drainage Div. --
- Am Soc Civil Engineers Proc., Jour Sanitary Eng Div --
- Am Soc Civil Engineers Proc., Jour. Soil Mechanics and Found. Div --
- Am. Soc Civil Engineers Proc., Jour Surveying and Mapping Div. --
- Am Soc. Civil Engineers Proc., Jour. Waterways and Harbors Div --  
 Proceedings of the American Society of Civil Engineers, Journal of the Air Transport Division and Highway Division and Hydraulics Division and Irrigation and Drainage Division and Sanitary Engineering Division and Soil Mechanics and Foundations Division and Surveying and Mapping Division and Waterways and Harbors Division. New York, New York.
- Am Soc Civil Engineers Trans. -- Transactions of the American Society of Civil Engineers. New York, New York.
- Am Soc. Testing Materials Spec Tech Pub -- American Society for Testing Materials Special Technical Publication Philadelphia, Pennsylvania
- Am Water Works Assoc Jour --
- Am Water Works Assoc. Southeastern Sec. Jour. --  
 American Water Works Association Journal and American Water Works Association, Southeastern Section, Journal. Birmingham, Alabama.
- Américas -- Américas Pan American Union. Washington, D C
- Anal Chemistry -- Analytical Chemistry. American Chemical Society Washington, D. C.
- Anal Chim. Acta -- Analytica Chimica Acta. Elsevier Publishing Company. Amsterdam, Netherlands.
- Appalachia -- Appalachia. Appalachian Mountain Club. Boston, Massachusetts
- Appl. Spectroscopy -- Applied Spectroscopy Society of Applied Spectroscopy. Plainfield, New Jersey.
- Arctic -- Arctic. Arctic Institute of North America. Montreal, Quebec.
- Arizona Bur Mines Bull. -- Arizona Bureau of Mines Bulletin Tucson, Arizona
- Arizona Geol Soc. Digest -- Arizona Geological Society Digest Tucson, Arizona
- Arizona Highways -- Arizona Highways Arizona Highway Department. Phoenix, Arizona
- Arizona State Land Dept. Water Resources Rept -- Arizona State Land Department Water Resources Report. Phoenix, Arizona
- Arizona Univ Bull -- University of Arizona Bulletin. Tucson, Arizona.
- Arkansas Acad. Sci Proc -- Arkansas Academy of Science Proceedings. Fayetteville, Arkansas.

- Arkansas Archeol Soc Newsletter -- Arkansas Archeological Society Newsletter University Arkansas Museum, Fayetteville, Arkansas
- Arkansas Geol and Conserv. Comm Inf Circ. --
- Arkansas Geol and Conserv Comm Spec. Ground-Water Rept --
- Arkansas Geol and Conserv Comm. Water Resources Circ --
- Arkansas Geological and Conservation Commission Information Circular and Special Ground-Water Report and Water Resources Circular
- Little Rock, Arkansas
- Asoc Mexicana Geofisicos Explor. Bol -- Boletín de la Asociación Mexicana de Geofisicos de Exploración México, D. F.
- Asoc Mexicana Geólogos Petroleros Bol -- Boletín de la Asociación Mexicana de Geólogos Petroleros. México, D F
- Assoc Am Geographers Annals -- Annals of the Association of American Geographers. Washington, D C
- Assoc Canadienne-Française Av. Sci. Annales. -- Association Canadienne-Française pour l'Avancement des Sciences Annales Montreal, Quebec.
- Assoc. Géographes Français Bull -- Bulletin de l'Association de Géographes Français Paris, France.
- Astrophys Jour -- Astrophysical Journal. University of Chicago Chicago, Illinois
- Balneolog Soc Japan Jour -- Journal of the Balneological Society of Japan Chemical Institute of Tokyo University Tokyo, Japan.
- Bol Inf. Petroleras -- Boletín de Informaciones Petroleras Dirección General de Yacimientos Petrolíferos Fiscales. Buenos Aires, Argentina
- Boll. Geofisica Teor ed Appl -- Bollettino di Geofisica Teorica ed Applicata Osservatorio Geofisico Sperimentale, Trieste, Italy.
- Bot. Gaz -- Botanical Gazette. University of Chicago Chicago, Illinois.
- Breviora -- Breviora Harvard College Museum of Comparative Zoology. Cambridge, Massachusetts
- Brigham Young Univ Research Studies Geology Ser. -- Brigham Young University Research Studies Geology Series. Provo, Utah.
- British Columbia Dept. Mines Ann Rept. -- British Columbia Department of Mines Annual Report. Victoria, British Columbia.
- British Columbia Dept Mines and Petroleum Resources Bull. -- British Columbia Department of Mines and Petroleum Resources Bulletin
- Victoria, British Columbia
- Bull Volcanol -- Bulletin Volcanologique Association de Volcanologie de l'Union Géodésique et Géophysique Internationale Naples, Italy.
- Bulls. Am Paleontology -- Bulletins of American Paleontology Paleontological Research Institution Ithaca, New York
- Cahiers Géographie Québec -- Cahiers de Géographie de Québec Laval University Quebec, Canada.
- California Acad Sci Occasional Paper -- Occasional Papers of the California Academy of Sciences San Francisco, California
- California Coop. Oceanic Fisheries Inv Rept -- California Cooperative Oceanic Fisheries Investigations Reports Sacramento, California.
- California Dept. Water Resources Div Resources Plan. Bull -- California Department of Water Resources Division of Resources Planning Bulletin. Sacramento, California
- California Div Mines Bull --
- California Div. Mines Mineral Inf Service --
- California Div. Mines Spec Rept --
- California Division of Mines Bulletin and Mineral Information Service and Special Report San Francisco, California.
- California Div Oil and Gas, California Oil Fields--Summ Operations -- California Division of Oil and Gas, California Oil Fields--Summary of Operations San Francisco, California.
- California Univ Pubs, Geol Sci -- University of California Publications in Geological Sciences Berkeley, California
- California Univ Scripps Inst. Oceanography Contr. -- University of California Scripps Institution of Oceanography Contribution La Jolla, California
- California Univ. Water Resources Center Contr. -- University of California Water Resources Center Contribution, Berkeley, California.

- Canada Dept. Mines and Tech. Surveys Geog. Br. Bibliog. Ser. --  
 Canada Dept. Mines and Tech. Surveys Geog. Br. Geog. Bull. --  
 Canada Dept. Mines and Tech. Surveys Geog. Br. Geog. Paper --  
     Canada Department of Mines and Technical Surveys Geographical Branch  
     Bibliographical Series and Geographical Bulletin and Geographical Paper.  
     Ottawa, Canada.
- Canada Dept. Mines and Tech. Surveys Mineral Resources Div. Mineral  
 Inf. Bull. -- Canada Department of Mines and Technical Surveys, Mineral  
 Resources Division, Mineral Information Bulletin, Ottawa, Canada
- Canada Dept. Mines and Tech. Surveys Mines Br. Research Rept. --  
 Canada Dept. Mines and Tech. Surveys Mines Br. Tech. Bull. TB --  
     Canada Department of Mines and Technical Surveys Mines Branch Re-  
     search Report and Technical Bulletin TB-. Ottawa, Canada.
- Canada Geol. Survey Bull. --  
 Canada Geol. Survey Econ. Geology Ser. --  
 Canada Geol. Survey Geophysics Paper --  
 Canada Geol. Survey Map --  
 Canada Geol. Survey Mem. --  
 Canada Geol. Survey Misc. Rept. --  
 Canada Geol. Survey Paper --  
 Canada Geol. Survey Prelim. Ser. Map --  
     Geological Survey of Canada Bulletin and Economic Geology Series and  
     Geophysics Paper and Map and Memoir and Miscellaneous Report and  
     Paper and Preliminary Series Map. Ottawa, Canada.
- Canada Natl. Advisory Comm. Research Geol. Sci. Ann. Rept. -- Canada  
 National Advisory Committee on Research in the Geological Sciences  
 Annual Report, Geological Survey of Canada, Ottawa, Canada.
- Canada Natl. Mus. Bull. --  
 Canada Natl. Mus., Nat. History Paper --  
     National Museum of Canada Bulletin and Natural History Papers. Ottawa,  
     Canada.
- Canadian Alpine Jour. -- Canadian Alpine Journal. Alpine Club of Canada,  
 Banff, Canada.
- Canadian Audubon -- Canadian Audubon, Audubon Society of Canada, Toronto,  
 Canada.
- Canadian Ceramic Soc. Jour. -- Journal of the Canadian Ceramic Society,  
 Toronto, Canada.
- Canadian Field-Naturalist -- Canadian Field-Naturalist, The Ottawa Field-  
 Naturalists' Club Ottawa, Canada.
- Canadian Geog. Jour. -- Canadian Geographical Journal, Royal Canadian  
 Geographical Society, Ottawa, Canada.
- Canadian Geographer -- Canadian Geographer, Canadian Association of  
 Geographers, Ottawa, Canada.
- Canadian Inst. Mining and Metallurgy Trans. -- Transactions of the Canadian  
 Institute of Mining and Metallurgy and of the Mining Society of Nova  
 Scotia, Montreal, Canada.
- Canadian Jour. Botany -- Canadian Journal of Botany, National Research  
 Council of Canada, Ottawa, Canada.
- Canadian Jour. Chemistry -- Canadian Journal of Chemistry, Natl. Re-  
 search Council of Canada, Ottawa, Canada.
- Canadian Jour. Physics -- Canadian Journal of Physics, Natl. Research  
 Council of Canada, Ottawa, Canada.
- Canadian Jour. Zoology -- Canadian Journal of Zoology, Natl. Research  
 Council of Canada, Ottawa, Canada.
- Canadian Mineralogist -- Canadian Mineralogist, Mineralogical Association  
 of Canada, Ottawa, Canada.
- Canadian Mines Handbook -- Canadian Mines Handbook, Northern Miner Press,  
 Limited Toronto, Ontario.
- Canadian Mining and Metall. Bull. -- Canadian Mining and Metallurgical  
 Bulletin, Canadian Institute of Mining and Metallurgy, Montreal, Canada.
- Canadian Mining Jour. -- Canadian Mining Journal, National Business  
 Publications Limited, Gardenvale, Canada.
- Canadian Mining Manual -- Canadian Mining Manual, National Business  
 Publications Limited, Gardenvale, Canada.
- Canadian Oil and Gas Industries -- Canadian Oil and Gas Industries, Na-  
 tional Business Publications Limited, Gardenvale, Canada.



- Carleton Univ Dept Geology, Geol Paper -- Carleton University Department of Geology, Geological Paper, Ottawa, Canada.
- Carnegie Mus Annals -- Annals of Carnegie Museum, Pittsburgh, Pennsylvania
- Chymia--Ann Studies History Chemistry -- Chymia--Annual Studies in the History of Chemistry, University of Pennsylvania Press Philadelphia, Pennsylvania
- Ciencia [Mexico] -- Ciencia Revista Hispano-Americana de Ciencias Puras y Aplicadas Publicacion del Patronato de Ciencia, Mexico, D. F.
- Clay Minerals Bull -- Clay Minerals Bulletin Mineralogical Society, London, England
- Cleveland Mus. Nat History Mus. News -- The Cleveland Museum of Natural History Museum News Cleveland, Ohio.
- Colorado School Mines Mineral Industries Bull --
- Colorado School Mines Quart. --
- Colorado School of Mines Mineral Industries Bulletin and Quarterly of the Colorado School of Mines Golden, Colorado.
- Colorado Water Conserv. Board, Ground-Water Ser., Basic-Data Rept. --
- Colorado Water Conserv. Board, Ground-Water Ser., Circ. --
- Colorado Water Conservation Board, Ground-Water Series, Basic-Data Report and Circular Denver, Colorado
- Colorado-Wyoming Acad. Sci. Jour -- Journal of the Colorado-Wyoming Academy of Science, Colorado State University Fort Collins, Colorado.
- Columbia Univ. Dept. Geology Tech. Rept -- Columbia University Department of Geology Technical Report New York, New York.
- Compass -- Compass Brigham Young University, Provo, Utah
- Connecticut State Geol. and Nat History Survey Quad Rept -- State Geological and Natural History Survey of Connecticut Quadrangle Report, Middletown, Connecticut.
- Copeia -- Copeia American Society of Ichthyologists and Herpetologists, Northridge, California.
- Copenhagen Univ Mineralog. and Geol Mus. Contr. Mineralogy -- Mineralogical and Geological Museum of the University of Copenhagen Contributions to Mineralogy, Copenhagen, Denmark
- Copenhagen Univ. Mus. Minéralogie et Géologie Commun. Géol -- Muséum de Minéralogie et de Géologie de l'Université de Copenhague Communications Géologiques, Copenhagen, Denmark.
- Costa Rica Dept Geología, Minas y Petróleo Informes -- Costa Rica Departamento de Geología, Minas y Petróleo Informes, Ciudad Universitaria, Costa Rica.
- Cranbrook Inst Sci News Letter -- Cranbrook Institute of Science News Letter Bloomfield Hills, Michigan.
- Current Sci. [India] -- Current Science Indian Institute of Science, Bangalore, India.
- Cushman Found. Foram Research Contr. --
- Cushman Found. Foram. Research Spec. Pub --
- Contributions from the Cushman Foundation for Foraminiferal Research and Cushman Foundation for Foraminiferal Research Special Publication Ithaca, New York
- De Re Metallica -- De Re Metallica, Montana School Mines, Butte, Montana.
- Deep-Sea Research -- Deep-Sea Research, Pergamon Press, London, England
- Delaware Geol Survey Bull -- Delaware Geological Survey Bulletin, Newark, Delaware
- Denison Univ Sci. Lab. Jour -- Denison University Journal of the Scientific Laboratories, Granville, Ohio.
- Denver Mus. Nat History Proc. -- Denver Museum of Natural History Proceedings, Denver, Colorado.
- Desert Mag -- Desert Magazine, Palm Desert, California
- Die Erde [Berlin] -- Die Erde Gesellschaft Führerdkunde zu Berlin, Berlin, Germany.
- Dissert Abs. -- Dissertation Abstracts University Microfilms Ann Arbor, Michigan
- Dominion Observatory Ottawa Pubs. -- Publications of the Dominion Observatory, Ottawa Canada Department of Mines and Technical Surveys, Ottawa, Canada

- Earth Sci -- Earth Science. Earth Science Publishing Company. Chicago, Illinois.
- Eclogae Geol Helvetiae -- Eclogae Geologicae Helvetiae Société Géologique Suisse Basel, Switzerland.
- Ecology -- Ecology. Ecological Society of America. Durham, North Carolina
- Econ. Geology -- Economic Geology Society of Economic Geologists. Urbana, Illinois
- Edmonton Geol. Soc Quart. -- Edmonton Geological Society Quarterly Edmonton, Canada.
- Eiszeitalter u Gegenwart -- Eiszeitalter und Gegenwart. Jahrbuch der Deutschen Quartarvereinigung Ohringen, Germany.
- Elisha Mitchell Sci Soc Jour -- Journal of the Elisha Mitchell Scientific Society. Chapel Hill, North Carolina.
- El Salvador Servicio Geol. Nac Bol. Sismol. -- Boletín Sismológico del Servicio Geológico Nacional de El Salvador San Salvador, El Salvador
- Endeavour -- Endeavour. Imperial Chemical Industries, Limited London, England.
- Energía Geotérmica Informe -- Energía Geotérmica Informe Servicio Geológico Nacional de El Salvador. San Salvador, El Salvador.
- Eng. Mining Jour. -- Engineering and Mining Journal. McGraw-Hill Publishing Company New York, New York.
- Eng. and Sci -- Engineering and Science. California Institute of Technology Pasadena, California.
- Erdkunde -- Erdkunde Ferd. Dümmlers Verlag Bonn, Germany
- Estuarine Bull -- Estuarine Bulletin. University of Delaware. Newark, Delaware
- Evolution -- Evolution. Society for the Study of Evolution. Lancaster, Pennsylvania.
- Fieldiana Geology -- .
- Fieldiana Geology Mem --  
Fieldiana Geology and Memoirs Chicago Natural History Museum. Chicago, Illinois
- Florida Devel Comm Indus. Div Business Research Rept. -- Florida Development Commission Industrial Division Business Research Report Tallahassee, Florida
- Florida Geol Survey Rept Inv -- Florida Geological Survey Report of Investigations. Tallahassee, Florida
- Florida State Mus Bull Biol Sci -- Bulletin of the Florida State Museum Biological Sciences. Gainesville, Florida
- Foote Prints -- Foote Prints Foote Mineral Company Philadelphia, Pennsylvania
- Frontiers -- Frontiers Academy of Natural Sciences of Philadelphia. Philadelphia, Pennsylvania
- Fuel [London] -- Fuel. Butterworths. London, England.
- Gems and minerals -- Gems and Minerals Mentone, California
- Geochem News -- Geochemical News The Geochemical Society Ann Arbor, Michigan
- Geochim et Cosmochim Acta -- Geochimica et Cosmochimica Acta Pergamon Press. London, England
- Geofisica Pura e Appl -- Geofisica Pura e Applicata Instituto Geofisica Italiano Milan, Italy
- Geog Annaler -- Geografiska Annaler. Svenska Sällskapet för Antropologie och Geografi. Stockholm, Sweden
- Geog. Jour. [London] -- Geographical Journal. Royal Geographical Society London, England
- Geog Rev -- Geographical Review American Geographical Society of New York New York, New York
- Geog. Rundschau -- Geographische Rundschau Georg Westerman Verlag Braunschweig, Germany
- Geog. Tidsskr. -- Geografisk Tidsskrift. Kongelige Danske Geografiske Selskab Copenhagen, Denmark
- Geol Assoc Canada Proc -- Proceedings of the Geological Association of Canada. Toronto, Canada
- Geol Foren Stockholm Forh -- Geologiska Föreningens i Stockholm Forhandlingar Stockholm, Sweden

- Geol Mag -- Geological Magazine Stephen Austin and Sons Hertford, England
- Geol Soc America Bull --
- Geol Soc America Mem --
- Geol. Soc America Proc --  
Bulletin of the Geological Society of America and Geological Society of the American Memoir and Proceedings of the Geological Society of America New York, New York.
- Geol Soc London Proc. --
- Geol Soc London Quart Jour --  
Proceedings of the Geological Society of London and Quarterly Journal of the Geological Society of London London, England
- Geol Soc Oregon Country Geol News Letter -- Geological Society of Oregon Country Geological News Letter Portland, Oregon
- Geologi [Finland] -- Geologi Suomen Geologinen Seura, Otaniemi, Finland
- Geonotes -- Geonotes Jamaica Geological Survey, Kingston, Jamaica
- Geophysics -- Geophysics. Society of Exploration Geophysicists Tulsa, Oklahoma
- Georgia Acad Sci Bull -- Bulletin of the Georgia Academy of Science Atlanta, Georgia
- Georgia Geol Survey Inf Circ -- Georgia Geological Survey Information Circular Atlanta, Georgia.
- Georgia Mineral Newsletter - Georgia Mineral Newsletter Georgia Geological Survey Atlanta, Georgia
- Geoscience Abs -- Geoscience Abstracts American Geological Institute, Washington, D C.
- Geotimes -- Geotimes American Geological Institute, Washington, D C.
- Glacier Nat History Assoc Spec Bull -- Special Bulletin, Glacier Natural History Association Kalispell, Montana
- Great Northern Railway Co Mineral Research and Devel Dept Rept. -- Great Northern Railway Company Mineral Research and Development Department Report St Paul, Minnesota
- Grønlands Geol Undersøgelse Bull --
- Grønlands Geol. Undersøgelse Misc. Papers --  
Grønlands Geologiske Undersøgelse Bulletin and Grønlands Geologiske Undersøgelse Miscellaneous Paper Copenhagen, Denmark
- Gulf Coast Assoc. Geol Soc, Trans -- Gulf Coast Association of Geological Societies Transactions, New Orleans, Louisiana.
- Hamburg Geol Staatsinst Mitt. -- Mitteilungen aus dem Geologischen Staatsinstitut in Hamburg Hamburg, Germany
- Harvard Coll Mus Comp Zoology Bull -- Bulletin of the Museum of Comparative Zoology at Harvard College Cambridge, Massachusetts
- Houston Geol Soc Bull -- Houston Geological Society Bulletin Houston, Texas
- Idaho Bur. Mines and Geology Inf Circ --
- Idaho Bur Mines and Geology Pamph --  
Idaho Bureau of Mines Geology Information Circular and Pamphlet, Moscow, Idaho
- Idaho Mining Industry Ann Rept -- Annual Report of the Mining Industry of Idaho Boise, Idaho.
- Idaho State Coll Mus Occasional Paper -- Occasional Papers of the Idaho State College Museum Pocatello, Idaho.
- Illinois State Acad Sci Trans -- Transactions of the Illinois State Academy of Science Springfield, Illinois
- Illinois State Geol Survey Circ. --
- Illinois State Geol Survey Educ Ser. --
- Illinois State Geol Survey Guide Leaflet --
- Illinois State Geol Survey Illinois Indus Minerals Note --
- Illinois State Geol Survey Rept Inv --  
Illinois State Geological Survey Circular and Educational Series and Guide Leaflet and Illinois Industrial Minerals Notes and Report of Investigations Urbana, Illinois
- Illinois State Water Survey Rept Inv. -- Illinois State Water Survey Report of Investigation, Urbana, Illinois
- Illinois Univ. Agr Expt Sta Bull -- University of Illinois Agricultural Experiment Station Bulletin Urbana, Illinois

- India Geol Survey Recs -- Records of the Geological Survey of India. Calcutta, India
- Indian Mineralogist -- Indian Mineralogist. Mineralogical Society of India Madras, India
- Indiana Acad Sci. Proc. -- Proceedings of the Indiana Academy of Science. Indianapolis, Indiana
- Indiana Geol. Survey Bull. --
- Indiana Geol. Survey Directory --
- Indiana Geol Survey Mineral Economics Ser. --
- Indiana Geol Survey Rept Prog. --
- Indiana Geological Survey Bulletin and Directory and Mineral Economics Series and Report of Progress. Bloomington, Indiana.
- Ingenieria Civil -- Ingenieria Civil. Colegio de Ingeniero Civiles de Cuba. Havana, Cuba.
- Inst. Centroamericano Inv. y Tecnol Indus. Noticias ICAITI -- Instituto Centroamericano de Investigación y Tecnología Industrial Noticias del ICAITI Guatemala, Guatemala.
- Inst Inv Geol "Lucas Mallada" Cursos y Conf. -- Instituto de Investigaciones Geológicas "Lucas Mallada" Cursos y Conferencias Madrid, Spain.
- Inst Mining and Metallurgy Bull Trans [London] -- Bulletin of the Institution of Mining and Metallurgy Transactions London, England
- Inst. Natl. Genevois Bull -- Bulletin de l'Institut National Genevois Geneva, Switzerland
- Internat Assoc Sci Hydrology Bull --
- Internat Assoc Sci. Hydrology Pub --
- Bulletin of the International Association of Scientific Hydrology and International Association of Scientific Hydrology Publication Gentbrugge, Belgium
- Interstate Oil Compact Comm. Comm Bull -- Interstate Oil Compact Commission Committee Bulletin Oklahoma City, Oklahoma.
- Iowa Acad Sci Proc. -- Proceedings of the Iowa Academy of Science. Des Moines, Iowa
- Iowa State Highway Comm , Iowa Highway Research Board Bull --
- Iowa State Highway Commission, Iowa Highway Research Board Bulletin. Ames, Iowa
- Iowa State Univ Sci and Technology, Iowa Eng. Expt Sta Bull --
- Iowa State University of Science and Technology, Iowa Engineering Experiment Station Bulletin Ames, Iowa
- Isis -- Isis History of Science Society Seattle, Washington
- Jamaica Geol. Survey Pub. -- Geological Survey Jamaica Publication Kingston, Jamaica
- Johns Hopkins Univ Studies in Geology -- Johns Hopkins University Studies in Geology. Baltimore, Maryland
- Jour Chem and Eng Data -- Journal of Chemical and Engineering Data. American Chemical Society. Washington, D C.
- Jour Chem Physics -- Journal of Chemical Physics American Institute of Physics. New York, New York
- Jour Geography [Tokyo] -- Journal of Geography. Tokyo Geographical Society Tokyo, Japan.
- Jour. Geol Education -- Journal of Geological Education. National Association of Geology Teachers Princeton, New Jersey
- Jour Geology -- Journal of Geology. University of Chicago Press. Chicago, Illinois
- Jour Geophys. Research -- Journal of Geophysical Research. American Geophysical Union. Washington, D C.
- Jour Glaciology -- Journal of Glaciology. British Glaciological Society Cambridge, England.
- Jour. Inorg. Nuclear Chemistry -- Journal of Inorganic and Nuclear Chemistry. Pergamon Press Oxford, England
- Jour. Mammalogy -- Journal of Mammalogy. American Society of Mammalogists Lawrence, Kansas.
- Jour Marine Research -- Journal of Marine Research Yale University. New Haven, Connecticut
- Jour. Paleontology -- Journal of Paleontology Society of Economic Paleontologists and Mineralogists. Tulsa, Oklahoma

- Jour Petroleum Technology -- Journal of Petroleum Technology Society of Petroleum Engineers of AIME Dallas, Texas
- Jour Petrology -- Journal of Petrology Oxford University Press, Oxford, England
- Jour Sed Petrology -- Journal of Sedimentary Petrology Society of Economic Paleontologists and Mineralogists, Tulsa, Oklahoma.
- Jour Soil Sci. [England] -- Journal of Soil Science Clarendon Press Oxford, England
- Kansas Acad Sci Trans. -- Transactions of the Kansas Academy of Science, Lawrence, Kansas
- Kansas State Geol Survey Bull --
- Kansas State Geol Survey Oil and Gas Inv --
- State Geological Survey of Kansas Bulletin and Oil and Gas Investigations. Lawrence, Kansas
- Kansas Univ Mus. Nat History Pub. -- University of Kansas Publications, Museum of Natural History, Lawrence, Kansas
- Kansas Univ. Paleont. Contr --
- Kansas Univ. Sci Bull --
- University of Kansas Paleontological Contributions and Science Bulletin. Lawrence, Kansas
- Kansas Water Resources Board State Water Plan Studies -- Kansas Water Resources Board State Water Plan Studies. Topeka, Kansas
- Kentucky Geol Survey, Rept Inv --
- Kentucky Geol. Survey, Spec Pub. --
- Kentucky Geological Survey, Report of Investigations and Special Publication Lexington, Kentucky
- Koninkl Nederlandsch Aardrijksk. Genoot Tijdschr -- Tijdschrift van het Koninklijk Aardrijkskundig Genootschap Amsterdam, Netherlands
- Koninkl Nederlandse Akad Wetensch. Proc -- Koninklijke Nederlandse Akademie van Wetenschappen Proceedings Amsterdam, Netherlands.
- Kyushu Univ Fac Sci Mem --
- Kyushu Univ Fac Sci, Sci Repts Geology --
- Kyushu University Memoirs of the Faculty of Science and Science Reports of the Faculty of Science, Geology Fukuoka, Japan.
- Limnology and Oceanography -- Limnology and Oceanography American Society of Limnology and Oceanography Ann Arbor, Michigan
- Liverpool and Manchester Geol Jour -- Liverpool and Manchester Geological Journal Liverpool Geological Society and Manchester Geological Association Liverpool, England
- Los Angeles County Mus Contr Sci -- Los Angeles County Museum Contributions in Science Los Angeles, California.
- Louisiana Geol Survey Folio Ser -- Louisiana Geological Survey Folio Series Baton Rouge, Louisiana.
- Louisiana Geol Survey Geol. Bull -- Louisiana Geological Survey Geological Bulletin Baton Rouge, Louisiana
- Louisiana Geol Survey Water Resources Bull --
- Louisiana Geol Survey Water Resources Pamph --
- Louisiana Geological Survey Water Resources Bulletin and Pamphlet. Baton Rouge, Louisiana
- Louisiana State Univ Coastal Studies Inst Caribbean Beach Studies Tech Rept --
- Louisiana State Univ Coastal Studies Inst Contr. --
- Louisiana State University Coastal Studies Institute, Caribbean Beach Studies Technical Report and Contribution Baton Rouge, Louisiana.
- McLean Paleont Lab. Rept -- Reports from the McLean Paleontological Laboratory. Alexandria, Virginia
- Maine Geol. Survey State Park Geol. Ser -- Maine Geological Survey State Park Geologic Series Augusta, Maine
- Maine Water Utilities Assoc Jour. -- Journal of the Maine Water Utilities Association Augusta, Maine.
- Manitoba Dept Mines and Nat Resources Mines Br Ann Rept --
- Manitoba Dept. Mines and Nat Resources Mines Br Map --
- Manitoba Dept Mines and Nat Resources Mines Br Pub --
- Manitoba Department of Mines and Natural Resources Mines Branch Annual Report and Map and Publication Winnipeg, Canada

- Massachusetts Inst Technology Soil Eng Div Pub -- Massachusetts Institute of Technology Soil Engineering Division Publication Cambridge, Massachusetts.
- Massachusetts Water Resources Comm Bull. -- Massachusetts Water Resources Commission Bulletin Boston, Massachusetts
- Medd om Grønland -- Meddelelser om Grønland Kommissionen for Videnskabelige Undersøgelser i Grønland Copenhagen, Denmark.
- México Consejo Recursos Nat no Renovables Bol. -- México Consejo de Recursos Naturales no Renovables Boletín México, D. F
- México Univ. Nac Inst Geofísica Anales --
- México Univ. Nac. Inst. Geofísica Mon. --
- Universidad Nacional Autónoma de México Anales del Instituto de Geofísica and Monografías del Instituto de Geofísica México, D. F
- México Univ. Nac. Inst. Geología Anales --
- México Univ Nac. Inst Geología Bol. --
- México Univ Nac Inst Geología Paleontología Mexicana --
- Universidad Nacional Autónoma de México Instituto de Geología Anales and Boletín and Paleontología Mexicana, México, D. F.
- Michigan Acad Sci, Arts, and Letters, Papers -- Papers of the Michigan Academy of Science, Arts, and Letters Ann Arbor, Michigan.
- Michigan Conserv. -- Michigan Conservation Michigan Department of Conservation, Lansing, Michigan
- Michigan Geol. Survey Div. Prog Rept. -- Michigan Geological Survey Division Progress Report Lansing, Michigan
- Michigan Geol Survey Div Water Supply Rept -- Michigan Geological Survey Division Water Supply Report Lansing, Michigan
- Michigan State Univ. Dept Resource Devel Agr Expt. Sta Water Bull. -- Michigan State University Department of Resource Development Agricultural Experiment Station Water Bulletin East Lansing, Michigan.
- Michigan Univ Great Lakes Research Div. Pub -- University of Michigan Great Lakes Research Division Publication, Ann Arbor, Michigan
- Michigan Univ Mus Paleontology Contr. -- University of Michigan Contributions from the Museum of Paleontology, Ann Arbor, Michigan
- Micropaleontology -- Micropaleontology American Museum of Natural History New York, New York
- Mineral Industries -- Mineral Industries, College of Mineral Industries, Pennsylvania State University, University Park, Pennsylvania
- Mineral Industries Jour -- Mineral Industries Journal Virginia Polytechnic Institute Blacksburg, Virginia.
- Mineralog Mag -- Mineralogical Magazine, Mineralogical Society, London, England
- Mineralog Soc. Utah Bull. -- Bulletin of the Mineralogical Society of Utah, Salt Lake City, Utah.
- Mineralogist -- Mineralogist Mentone, California
- Mines Mag -- Mines Magazine Colorado School of Mines Alumni Association Golden, Colorado.
- Mining and Metall Soc. America Bull -- Mining and Metallurgical Society of America Bulletin, New York, New York.
- Mining Cong Jour -- Mining Congress Journal American Mining Congress, Washington, D. C.
- Mining Eng -- Mining Engineering American Institute of Mining, Metallurgical, and Petroleum Engineers New York, New York
- Mining Jour [London] -- Mining Journal Mining Journal Limited London, England
- Mining Mag. [London] -- Mining Magazine Mining Journal Limited, London, England
- Mining World -- Mining World, San Francisco, California
- Minnesota Acad. Sci Proc -- Proceedings of the Minnesota Academy of Science Minneapolis, Minnesota.
- Minnesota Dept Conserv, Div Waters Bull -- Minnesota Department of Conservation, Division of Waters Bulletin St. Paul, Minnesota
- Mississippi State Geol. Survey Bull -- Mississippi State Geological Survey Bulletin University, Mississippi
- Missouri Div Geol Survey and Water Resources Groundwater Rept -- Missouri Division of Geological Survey and Water Resources Groundwater Report Rolla, Missouri.

- Missouri Speleology -- Missouri Speleology Missouri Speleological Survey. Columbia, Missouri
- Montana Acad. Sci. Proc. -- Proceedings of the Montana Academy of Sciences. Bozeman, Montana
- Montana Bur. Mines and Geology Bull. --
- Montana Bur. Mines and Geology Mem. --
- Montana Bur. Mines and Geology Spec. Pub. --  
Montana Bureau of Mines and Geology Bulletin and Memoir and Special Publication Butte, Montana
- Mus. Observer -- Museum Observer Science Museum, St. Paul, Minnesota.
- Nat. History -- Natural History American Museum of Natural History. New York, New York.
- Natl. Acad. Sci. Biog. Mem. --
- Natl. Acad. Sci. Proc. --  
National Academy of Sciences Biographical Memoirs and Proceedings of the National Academy of Sciences Washington, D. C.
- Natl. Acad. Sci.—Natl. Research Council Highway Research Board Bull. --
- Natl. Acad. Sci.—Natl. Research Council Highway Research Board Spec. Rept. --  
National Academy of Sciences—National Research Council Highway Research Board Bulletin and Special Report. Washington, D. C.
- Natl. Geog. Mag. -- National Geographic Magazine. National Geographic Society. Washington, D. C.
- Natl. Parks Mag. -- National Parks Magazine. National Park Association. Washington, D. C.
- Natl. Petroleum Bibliography -- National Petroleum Bibliography Amarillo, Texas.
- Natl. Speleol. Soc. Bull. --
- Natl. Speleol. Soc. Guidebook Ser. --
- Natl. Speleol. Soc. NSS News --  
Bulletin of the National Speleological Society and National Speleological Society Guidebook Series and NSS News 1229 Allen Avenue, Falls Church, Virginia
- Naturaliste Canadien -- Le Naturaliste Canadien Université Laval Quebec, Canada
- Nature [London] -- Nature Macmillan and Company London, England.
- Naturen -- Naturen Bergen, Norway
- Nautilus -- The Nautilus American Malacological Union Philadelphia, Pennsylvania
- Nebraska Acad. Sci. Proc. -- Proceedings of the Nebraska Academy of Science Lincoln, Nebraska.
- Nebraska Univ. Conserv. and Survey Div., Nebraska Water Survey Test Hole Rept. -- University of Nebraska Conservation and Survey Division, Nebraska Water Survey Test Hole Report Lincoln, Nebraska
- Nebraska Univ. State Mus., Mus. Notes -- Museum Notes from the University of Nebraska State Museum Lincoln, Nebraska
- Neues Jahrb. Geologie u. Paläontologie Abh. --
- Neues Jahrb. Geologie u. Paläontologie Monatsh. --  
Neues Jahrbuch für Geologie und Paläontologie Abhandlungen und Monatshefte. E. Schweizerbart'sche Verlagsbuchhandlung. Stuttgart, Germany.
- Neues Jahrb. Mineralogie Abh. --  
Neues Jahrbuch für Mineralogie Abhandlungen E. Schweizerbart'sche Verlagsbuchhandlung Stuttgart, Germany.
- Nevada Bur. Mines Bull. -- Nevada Bureau of Mines Bulletin. Reno, Nevada.
- Nevada Dept. Conserv. and Nat. Resources Ground-Water Resources—Reconn. Ser. Rept. -- Nevada Department of Conservation and Natural Resources Ground-Water Resources—Reconnaissance Series Report. Carson City, Nevada
- Nevada Highways and Parks -- Nevada Highways and Parks. Nevada Department of Highways Carson City, Nevada
- New Hampshire State Plan. and Devel. Comm. Mineral Resources Survey --  
New Hampshire State Planning and Development Commission Mineral Resources Survey Concord, New Hampshire
- New Jersey Bur. Geology and Topography Bull. -- New Jersey Bureau of Geology and Topography Bulletin. Trenton, New Jersey.

- New Jersey Dept. Conserv and Econ Devel., Div. Water Policy and Supply  
Water Resources Circ -- New Jersey Department of Conservation and  
Economic Development Division of Water Policy and Supply Water Re-  
sources Circular [Trenton, New Jersey]
- New Jersey State Mus. Bull. -- New Jersey State Museum Bulletin, Trenton,  
New Jersey.
- New Mexico Bur Mines and Mineral Resources Bull --
- New Mexico Bur Mines and Mineral Resources Circ. --
- New Mexico Bur Mines and Mineral Resources Geol Map --
- New Mexico Bur Mines and Mineral Resources Mem. --
- New Mexico Bur. Mines and Mineral Resources Scenic Trips Geol. Past --  
New Mexico Bureau of Mines and Mineral Resources Bulletin and Circular  
and Geologic Map and Memoir and Scenic Trips to the Geologic Past  
Socorro, New Mexico
- New Mexico Mag -- New Mexico Magazine New Mexico Department of  
Development Santa Fe, New Mexico.
- New Mexico State Engineer Bienn. Rept -- Biennial Report of the State  
Engineer of New Mexico Santa Fe, New Mexico.
- New Mexico State Engineer Tech Rept -- New Mexico State Engineer  
Technical Report Santa Fe, New Mexico
- New Mexico Univ Pubs Geology -- University of New Mexico Publications  
in Geology Albuquerque, New Mexico.
- New York Acad Sci. Annals --
- New York Acad. Sci Trans --  
Annals and Transactions of the New York Academy of Sciences New York,  
New York
- New York State Mus. and Sci. Service Bull. --
- New York State Mus. and Sci. Service Educ Leaflet Ser --
- New York State Mus and Sci. Service Geol Survey Map and Chart Ser --  
New York State Museum and Science Service Bulletin and Educational  
Leaflet Series and Geological Survey Map and Chart Series Albany, New  
York.
- Nicaragua Servicio Geol. Nac. Bol -- Boletín del Servicio Geológico Nac-  
ional de Nicaragua Managua, Nicaragua
- Norols -- Norols. Instituts de Géographie des Facultés des Lettres de Caen,  
Poitiers, France
- Norsk Geol Tidsskr. -- Norsk Geologisk Tidsskrift Norsk Geologisk  
Forening Oslo, Norway
- North Carolina Dept. Conserv and Devel Bull. -- North Carolina Department  
of Conservation and Development Bulletin Raleigh, North Carolina
- North Carolina Dept. Water Resources Ground-Water Bull. --
- North Carolina Dept. Water Resources Rept Inv --  
North Carolina Department of Water Resources Ground-Water Bulletin and  
Report of Investigations Raleigh, North Carolina.
- North Dakota Coal Mine Inspection Dept Ann Rept -- North Dakota Coal  
Mine Inspection Department Annual Report. Bismarck, North Dakota
- North Dakota Geol Survey Bull --
- North Dakota Geol Survey Circ --
- North Dakota Geol Survey Misc Map --
- North Dakota Geol. Survey Production Statistics and Eng Data Oil North  
Dakota --
- North Dakota Geol Survey Rept. Inv. --  
North Dakota Geological Survey Bulletin and Circular and Miscellaneous  
Map and Production Statistics and Engineering Data, Oil in North Dakota  
and Report of Investigation Grand Forks, North Dakota
- Northwest Sci -- Northwest Science. Washington State University. Pullman,  
Washington.
- Notes, Minerals Franklin and Sterling Hill, New Jersey -- Notes on the  
Minerals of Franklin and Sterling Hill, New Jersey Union, New Jersey
- Nova Scotian Inst. Sci. Proc. -- Proceedings of the Nova Scotian Institute of  
Science. Halifax, Nova Scotia
- Nucleonics -- Nucleonics McGraw-Hill Publishing Co New York, New York.
- Ohio Div Geol Survey Bull --
- Ohio Div Geol Survey Inf Circ --
- Ohio Div Geol. Survey Rept Inv --  
Ohio Division of Geological Survey Bulletin and Information Circular and  
Report of Investigations Columbus, Ohio



- Ohio Div Shore Erosion Tech Rept. -- Ohio Division of Shore Erosion Technical Report, Columbus, Ohio
- Ohio Div. Water Tech. Rept -- Ohio Division of Water Technical Report, Columbus, Ohio
- Ohio Jour. Sci. -- Ohio Journal of Science. Ohio State University, Columbus, Ohio.
- Ohio State Univ. Coll. Eng. News Eng. -- Ohio State University College of Engineering, News in Engineering Columbus, Ohio.
- Ohio State Univ. Eng Expt. Sta Bull. -- Ohio State University Engineering Experiment Station Bulletin, Columbus, Ohio
- Ohio State Univ Research Found. Rept -- Ohio State University Research Foundation Report, Columbus, Ohio
- Oikos—Acta Oecologica Scandinavica [Copenhagen] -- Oikos—Acta Oecologica Scandinavica. Copenhagen, Denmark.
- Oil and Gas Jour. -- Oil and Gas Journal Petroleum Publishing Company, Tulsa, Oklahoma
- Oil in Canada -- Oil in Canada, Stovel-Advocate Publications Ltd, Winnipeg, Canada.
- Oilweek -- Oilweek Myers' Oil News Ltd, Calgary, Canada.
- Oklahoma Geol Survey Bull. --
- Oklahoma Geol Survey Circ. --
- Oklahoma Geological Survey Bulletin and Circular, Norman, Oklahoma.
- Oklahoma Geology Notes -- Oklahoma Geology Notes Oklahoma Geological Survey, Norman, Oklahoma
- Ontario Dept Mines Ann Rept. --
- Ontario Dept. Mines Bull. --
- Ontario Dept. Mines Geol Rept. --
- Ontario Dept Mines Indus Mineral Circ --
- Ontario Dept Mines Prelim Geol. Map --
- Ontario Dept. Mines Prelim Map --
- Ontario Dept Mines Provisional Map --
- Ontario Dept Mines Rept. --
- Annual Report of the Ontario Department of Mines and Ontario Department of Mines Bulletin and Geological Report and Industrial Mineral Circular and Preliminary Geological Map and Preliminary Map and Provisional Map and Report of the Ontario Department of Mines Toronto, Canada.
- Ontario Fuel Board Ann. Rept. -- Annual Report of the Ontario Fuel Board, Toronto, Ontario, Canada.
- Ore -Bin -- The Ore -Bin Oregon Department of Geology and Mineral Industries, Portland, Oregon
- Oregon Dept. Geology and Mineral Industries Bull --
- Oregon Dept. Geology and Mineral Industries Misc. Paper --
- Oregon Department of Geology and Mineral Industries Bulletin and Miscellaneous Paper Portland, Oregon.
- Our Public Lands -- Our Public Lands, U S, Bureau of Land Management Washington, D C
- Pacific Discovery -- Pacific Discovery California Academy of Sciences, Berkeley, California.
- Palaeontographica --Palaeontographica, E. Schweizerbart'sche Verlagbuchhandlung Stuttgart, Germany.
- Palaeontology -- Palaeontology Palaeontological Association, London, England
- Paris Univ. Inst. Hautes Études Amérique Latine Travaux et Mém -- Université de Paris Travaux et Mémoires de l'Institut des Hautes Études de l'Amérique Latine, Paris, France.
- Pennsylvania Acad Sci. Proc. -- Proceedings of the Pennsylvania Academy of Science Grantham, Pennsylvania.
- Pennsylvania Geol Survey Bull --
- Pennsylvania Geol. Survey Inf Circ --
- Pennsylvania Geol. Survey Prog. Rept. --
- Pennsylvania Geol. Survey Well-Sample Rec. --
- Pennsylvania Geological Survey Bulletin and Information Circular and Progress Report and Well-Sample Record Harrisburg, Pennsylvania.
- Petróleo Interamericano -- Petróleo Interamericano, Petroleum Publishing Company Tulsa, Oklahoma.

- Petroleum Engineer for Management -- Petroleum Engineer for Management  
 Petroleum Engineer Publishing Company Dallas, Texas
- Petroleum Rev. -- Petroleum Review, Phifer Petroleum Publications,  
 Houston, Texas.
- Petroleum Today -- Petroleum Today, American Petroleum Institute New  
 York, New York.
- Photogramm. Eng. -- Photogrammetric Engineering American Society of  
 Photogrammetry Washington, D C.
- Phys Rev Letters -- Physical Review Letters American Physical Society,  
 Columbia University, New York, New York
- Physics and Chemistry Solids -- Physics and Chemistry of Solids, Pergamon  
 Press New York, New York
- Phytomorphology -- Phytomorphology, Department of Botany, University of  
 Delhi Delhi, India
- Plateau -- Plateau Northern Arizona Society of Science and Art, Flagstaff,  
 Arizona
- Polarforschung -- Polarforschung, Vesperland-Verlag Holzminden, Germany.
- Postilla -- Postilla, Yale Peabody Museum of Natural History New Haven,  
 Connecticut
- Precambrian -- Precambrian, Stovel-Advocate Publications Ltd Winnipeg,  
 Canada.
- Producers Monthly -- Producers Monthly, Producers Publishing Company,  
 Bradford, Pennsylvania
- Psyche -- Psyche Cambridge Entomological Club Cambridge, Massachusetts.
- Puerto Rico Water Resources Authority Water-Resources Bull -- Puerto  
 Rico Water Resources Authority, Water-Resources Bulletin, San Juan,  
 Puerto Rico
- Purdue Univ Eng Ext Ser -- Purdue University Engineering Extension  
 Series Lafayette, Indiana
- Quebec Dept Mines Geol. Surveys Br. Geol. Rept. --  
 Quebec Dept Mines Geol. Surveys Br. Prelim. Rept --  
 Quebec Department of Mines Geological Surveys Branch Geological Report  
 and Preliminary Report, Quebec, Canada.
- Quebec Dept Mines Mineral Deposits Br. Prelim. Rept -- Quebec Department  
 of Mines Mineral Deposits Branch Preliminary Report, Quebec, Canada.
- Quebec Dept. Nat. Resources Geol. Surveys Br. Prelim. Rept -- Quebec  
 Department of Natural Resources Geological Surveys Branch Preliminary  
 Report, Quebec, Canada
- Research Council Alberta Bull --
- Research Council Alberta Mem --
- Research Council Alberta Prelim. Rept --
- Research Council Alberta Prelim. Soil Survey Rept --  
 Research Council of Alberta Bulletin and Memoir and Preliminary Re-  
 port and Preliminary Soil Survey Report Edmonton, Canada.
- Rev Canadienne Géographie -- Revue Canadienne de Géographie Société  
 de Géographie de Montréal et de l'Institut de l'Université de Montreal,  
 Montreal, Canada.
- Rev. Géographie Phys et Géologie Dynam. -- Revue de Géographie Physique  
 et de Géologie Dynamique, Masson and Cie, Paris, France.
- Rev. Sci. Instruments -- Review of Scientific Instruments American Institute  
 of Physics New York, New York
- Rhode Island Water Resources Coordinating Board Ground-Water Map --  
 Rhode Island Water Resources Coordinating Board Hydrol. Bull. --  
 Rhode Island Water Resources Coordinating Board Ground-Water Map  
 and Rhode Island Water Resources Coordinating Board Hydrologic Bulle-  
 tin, Providence, Rhode Island.
- Rochester Acad Sci. Proc -- Proceedings of the Rochester Academy of  
 Science, Rochester, New York
- Rock Products -- Rock Products, Maclean-Hunter Publishing Company  
 Chicago, Illinois.
- Rocks and Minerals -- Rocks and Minerals, Peekskill, New York.
- Royal Astron. Soc. Geophys. Jour -- Geophysical Journal of the Royal  
 Astronomical Society, London, England.
- Royal Canadian Inst Trans. -- Transactions of the Royal Canadian Institute  
 Toronto, Canada.

- Royal Soc. Canada Minutes Proc. --  
 Royal Soc. Canada Trans. --  
     Minutes of Proceedings and Transactions of the Royal Society of Canada  
     Ottawa, Canada.
- Royal Soc. Canada "Studia Varia" Ser. -- Royal Society of Canada "Studia  
 Varia" Series University of Toronto Press, Toronto, Canada.
- San Diego Soc. Nat. History Mem. -- Memoirs of the San Diego Society of  
 Natural History, San Diego, California
- Sarracenia -- Sarracenia l'Université de Montreal Montreal, Canada.
- Saskatchewan Dept. Mineral Resources Rept -- Saskatchewan Department  
 of Mineral Resources Report [Regina, Saskatchewan],
- Saskatchewan Research Council Geology Div. Rept. -- Saskatchewan Research  
 Council Geology Division Report, Saskatoon, Saskatchewan
- Sci. Am. -- Scientific American, Scientific American, Inc. New York, New  
 York.
- Sci. March -- Science of the March. Buffalo Museum of Science, Buffalo,  
 New York
- Science -- Science, American Association for the Advancement of Science.  
 Washington, D. C.
- Scottish Geog. Mag. -- Scottish Geographical Magazine, Royal Scottish  
 Geographical Society, Edinburgh, Scotland
- Seismol. Soc. America Bull. -- Bulletin of the Seismological Society of  
 America, Berkeley, California.
- Senckenbergiana Lethaea -- Senckenbergiana Lethaea, Senckenbergischen  
 Naturforschenden Gesellschaft, Frankfurt am Main, Germany
- Shale Shaker -- Shale Shaker, Oklahoma City Geological Society Oklahoma  
 City, Oklahoma.
- Sheffield Univ. Geol. Soc. Jour. -- Journal of the University of Sheffield  
 Geological Society [Sheffield, England]
- Sierra Club Bull. --
- Sierra Club Repr. Ser. --  
     Sierra Club Bulletin and Sierra Club Reprint Series San Francisco, Cali-  
     fornia.
- Smithsonian Inst. Ann. Rept. -- Annual Report of the Smithsonian Institution.  
 Washington, D. C.
- Smithsonian Misc. Colln. -- Smithsonian Miscellaneous Collections Smith-  
 sonian Institution, Washington, D. C.
- Soc. Cubana Historia Nat. Mem. -- Memorias de la Sociedad Cubana de  
 Historia Natural, Havana, Cuba
- Soc. Cubana Ingenieros Rev. -- Revista de la Sociedad Cubana de Ingenieros,  
 Havana, Cuba.
- Soc. Géol. France Bull. -- Bulletin de la Société Géologique de France.  
 Paris, France.
- Soc. Mexicana Historia Nat. Rev. -- Revista de la Sociedad Mexicana de  
 Historia Natural México, D. F.
- Soc. Vertebrate Paleontology Bibliography --
- Soc. Vertebrate Paleontology News Bull. --  
     Society of Vertebrate Paleontology Bibliography and News Bulletin,  
     Chicago, Illinois.
- Soil Sci. -- Soil Science Wilkins and Wilkins Company, Baltimore, Maryland
- Soil Sci. Soc. America Proc. -- Soil Science Society of America Proceedings,  
 Danville, Illinois
- South Carolina State Devel. Board Div. Geology Bull. --
- South Carolina State Devel. Board Div. Geology Geol. Notes --  
     South Carolina State Development Board Division of Geology Bulletin and  
     Geologic Notes South Carolina State Development Board, Division of  
     Geology Columbia, South Carolina
- South Dakota Acad. Sci. Proc. -- Proceedings of the South Dakota Academy  
 of Science, Vermillion, South Dakota
- South Dakota State Geol. Survey Misc. Inv. --
- South Dakota State Geol. Survey Rept. Inv. --  
     South Dakota State Geological Survey Miscellaneous Investigations and  
     Report of Investigations Vermillion, South Dakota.
- Southeastern Geology -- Southeastern Geology Department of Geology,  
 Duke University, Durham, North Carolina.

- Southern California Acad. Sci Bull -- Bulletin of the Southern California Academy of Sciences Los Angeles, California
- Southwestern Federation Geol. Soc's Trans. -- Southwestern Federation of Geological Societies Transactions Lubbock, Texas
- Spectrochim Acta -- Spectrochimica Acta. Pergamon Press, New York, New York
- Stockholm Univ Stockholm Contr. Geology -- University of Stockholm Stockholm Contributions in Geology Stockholm, Sweden
- Systematic Zoology -- Systematic Zoology. Society of Systematic Zoology. Los Angeles, California.
- Tellus -- Tellus. Svenska Geofysiska Föreningen Stockholm, Sweden.
- Tennessee Acad Sci. Jour -- Journal of the Tennessee Academy of Science. Nashville, Tennessee
- Tennessee Div. Geology Geol Map --
- Tennessee Div. Geology Inf Circ. --
- Tennessee Div. Geology Rept Inv --
- Tennessee Division of Geology Geologic Map and Information Circular and Report of Investigations. Nashville, Tennessee.
- Texas Board of Water Engineers Bull. -- Texas Board of Water Engineers Bulletin Austin, Texas
- Texas Jour Sci. -- Texas Journal of Science Texas Academy of Science. Austin, Texas
- Texas Univ. Bur Econ. Geology Guidebook --
- Texas Univ. Bur. Econ Geology Rept Inv --
- University of Texas Bureau of Economic Geology Guidebook and Report of Investigations. Austin, Texas.
- Texas Univ Pub -- University of Texas Publication. Austin, Texas.
- Tohoku Univ. Sci Repts. -- The Science Reports of the Tohoku University Sendai, Japan.
- Torrey Bot Club Bull. -- Bulletin of the Torrey Botanical Club New York, New York.
- Tulsa Geol Soc. Digest -- Tulsa Geological Society Digest. Tulsa, Oklahoma.
- U S. Air Force Cambridge Research Center Geophysics Research Directorate Geophys. Research Paper -- United States Air Force Cambridge Research Center, Geophysics Research Directorate, Geophysical Research Papers. Bedford, Massachusetts
- U. S. Air Force Proj. Rand Research Memo -- United States Air Force Project Rand Research Memorandum. Rand Corporation Santa Monica, California.
- U. S. Army, Corps of Engineers, Cold Regions Research and Eng Lab. Tech Rept. -- United States Army, Corps of Engineers, Cold Regions Research and Engineering Laboratory Technical Report. Hanover, New Hampshire.
- U S. Army, Corps of Engineers, Comm Tidal Hydraulics Tech Bull. -- United States Army, Corps of Engineers, Committee on Tidal Hydraulics Technical Bulletin. Vicksburg, Mississippi.
- U. S Army, Corps of Engineers, Snow Ice and Permafrost Research Establishment Rept --
- U. S. Army, Corps of Engineers, Snow Ice and Permafrost Research Establishment Research Rept --
- U. S. Army, Corps of Engineers, Snow Ice and Permafrost Research Establishment Tech. Rept. --
- United States Army, Corps of Engineers, Snow Ice and Permafrost Research Establishment, SIPRE Report and Research Report and Technical Report. Wilmette, Illinois
- U. S Army, Quartermaster Research and Eng. Center, Environmental Protection Research Div Tech. Rept. -- United States Army, Quartermaster Research and Engineering Center Environmental Protection Research Division Technical Report Natick, Massachusetts
- [U S ] Beach Erosion Board Tech. Memo -- [U S ] Beach Erosion Board Technical Memorandum. [Washington, D C.]
- U S. Bur Mines Bull --
- U S. Bur Mines Inf. Circ --
- U. S. Bur. Mines Rept. Inv. --
- United States Bureau of Mines Bulletin and Information Circular and Report of Investigations. Washington, D C

- U S Bur. Reclamation Eng Mon. -- United States Bureau of Reclamation Engineering Monographs. Denver, Colorado.
- U S Coast and Geod Survey U. S Earthquakes -- United States Coast and Geodetic Survey United States Earthquakes. Washington, D. C.
- U. S. Geol Survey Bull. --
- U S. Geol. Survey Coal Inv. Map --
- U S. Geol. Survey Geophys. Inv. Map --
- U. S. Geol. Survey Hydrol Inv Atlas --
- U. S. Geol Survey Mineral Inv Resource Map --
- U S. Geol. Survey Oil and Gas Inv. Chart --
- U S. Geol Survey Oil and Gas Inv. Map OM- --
- U. S. Geol Survey Prof Paper --
- U S Geol Survey TEI- Rept --
- U. S. Geol Survey Water-Supply Paper --
- United States Geological Survey Bulletin and Coal Investigations Map and Geophysical Investigations Map and Hydrologic Investigations Atlas and Mineral Investigations Resource Map and Oil and Gas Investigations Chart and Oil and Gas Investigations Map OM- and Professional Paper and Trace Elements Investigations Report and Water-Supply Paper. Washington, D. C.
- Uppsala Univ Geol Inst. Bull. -- Bulletin of the Geological Institutions of the University of Uppsala. Uppsala, Sweden.
- Utah Acad Sci., Arts, and Letters Proc -- Proceedings of the Utah Academy of Sciences, Arts, and Letters. Provo, Utah.
- Utah Geol. and Mineralog. Survey Bull. -- Utah Geological and Mineralogical Survey Bulletin. Salt Lake City, Utah
- Veliger -- The Veliger Northern California Malacozoological Club. Berkeley, California
- Venezuela Dirección Geología Bol. Geología Pub. Espec. --
- Venezuela Dirección de Geología Boletín, Geología Publicación Especial. Caracas, Venezuela.
- Virginia Div Mineral Resources Bull --
- Virginia Div. Mineral Resources Inf. Circ. --
- Virginia Div. Mineral Resources, Mineral Resources Rept --
- Virginia Div Mineral Resources Rept. Inv. --
- Virginia Division of Mineral Resources Bulletin and Information Circular and Mineral Resources Report and Report of Investigations. Charlottesville, Virginia.
- Virginia Div Water Resources Bull. -- Virginia Division of Water Resources Bulletin. Richmond, Virginia.
- Virginia Jour Sci. -- Virginia Journal of Science Virginia Academy of Science Blacksburg, Virginia
- Virginia Minerals -- Virginia Minerals. Virginia Division of Mineral Resources. Charlottesville, Virginia.
- Virginia Polytech. Inst. Bull, Eng Expt. Sta. Ser -- Bulletin of the Virginia Polytechnic Institute, Engineering Experiment Station Series Blacksburg, Virginia.
- Washington Acad Sci. Jour. -- Journal of the Washington Academy of Sciences Washington, D. C
- Washington State Div Mines and Geology Bull --
- Washington State Div. Mines and Geology Rept. Inv. --
- Washington State Division of Mines and Geology Bulletin and Report of Investigations Olympia, Washington
- Washington State Div. Water Resources Water Supply Bull. -- Washington State Division of Water Resources Water Supply Bulletin Olympia, Washington
- West Virginia Acad. Sci. Proc. -- Proceedings of the West Virginia Academy of Science Morgantown, West Virginia.
- West Virginia Geol and Econ Survey Bull --
- West Virginia Geol. and Econ. Survey Rept. Inv. --
- West Virginia Geological and Economic Survey Bulletin and Report of Investigations. Morgantown, West Virginia
- Western Miner and Oil Rev. -- Western Miner and Oil Review Vancouver, British Columbia.
- Williston Basin Oil Rev. -- Williston Basin Oil Review E. J Conrad, Publisher. Bismarck, North Dakota.

- Wisconsin Acad. Sci., Arts, and Letters Trans -- Transactions of the Wisconsin Academy of Sciences, Arts, and Letters Madison, Wisconsin.
- Wisconsin Univ Agr Expt Sta Bull -- University of Wisconsin Agricultural Experiment Station Bulletin Madison, Wisconsin
- Woods Hole Oceanog Inst Reference -- Woods Hole Oceanographic Institution Reference. Woods Hole, Massachusetts
- World Oil -- World Oil. Gulf Publishing Company Houston, Texas
- World Petroleum -- World Petroleum World Petroleum. New York, New York
- Wyoming Geol Survey Rept Inv -- Geological Survey of Wyoming Report of Investigations Laramie, Wyoming
- Yale Univ Peabody Mus Nat History Bull. -- Yale University Peabody Museum of Natural History Bulletin New Haven, Connecticut
- Yellowstone Nature Notes -- Yellowstone Nature Notes Yellowstone National Park, Yellowstone Park, Wyoming.
- Yorkshire Geol Soc Proc -- Proceedings of the Yorkshire Geological Society Hull, England.
- Yosemite Nature Notes -- Yosemite Nature Notes Yosemite Natural History Association Yosemite National Park, California.
- Zeitschr Erzbergbau u Metallhüttenwesen -- Zeitschrift für Erzbergbau und Metallhüttenwesen Gesellschaft Deutscher Metallhütten-und Bergleute. Stuttgart, Germany
- Zeitschr Geophysik -- Zeitschrift für Geophysik Deutsche Geophysikalische Gesellschaft Würzburg, Germany
- Zeitschr Kristallographie -- Zeitschrift für Kristallographie Akademische Verlags-Gesellschaft, Frankfurt am Main, Germany.
- Zisin -- Zisin Seismological Society of Japan Tokyo, Japan.

## BIBLIOGRAPHY

---

AADLAND, Arne

- 1-60 Origin of the Monroe Creek (Miocene) sediments in western Nebraska  
Compass, v 37, no 2, p 91-97 incl table, Jan 1960

ABDEL-GAWAD, Abdel-Moneim M

- 1-60 Alteration features associated with some basal Chinle uranium deposits [Colorado Plateau] [abs] Dissert Abs, v 21, no 3, p 590, Sept. 1960

ABEL, John F, Jr

- 1-60 Permafrost tunnel, Camp Tuto, Greenland U S Army, Corps of Engineers, Snow Ice and Permafrost Research Establishment Tech Rept 73, 19 p, illus, Oct 1960

ABELSON, Philip Hauge

- 1-60 (and HOERING, Thomas Carl) Biogeochemistry of the stable isotopes of carbon [abs] Geol Soc America Bull, v 71, no 12, pt 2, p 1811, Dec 1960.

ABILENE GEOLOGICAL SOCIETY

- 1-60 Geological contributions 1960 Abilene, Tex, 201 p, illus, 1960 A symposium including individual papers which are cited separately

ABILENE GEOLOGICAL SOCIETY, Stratigraphic and Study Group

- 1-60 The stratigraphic distribution of hydrocarbon production from 12 counties in the Abilene area [Texas] Abilene, Tex, Abilene Geol Soc [81] p, illus, 1960

ABRAHAM, Earl Michael

- 1-60 (and ROBERTSON, J A, and others) Scarfe township, District of Algoma, Ontario Ontario Dept. Mines Prelim Map P 68, scale 1 in to 1/4 mi, [Nov] 1960  
2-60 (and ROBERTSON, J. A, and others) Mack township, District of Algoma, Ontario Ontario Dept Mines Prelim Map P 69, scale 1 in to 1/4 mi, [Nov] 1960  
3-60 (and ROBERTSON, J A, and others) McGivern township, District of Algoma, Ontario Ontario Dept Mines Prelim Map P 70, scale 1 in to 1/4 mi., [Nov] 1960.  
4-60 (and ROBERTSON, J A, and others) Cobden township, District of Algoma, Ontario Ontario Dept Mines Prelim Map P.71, scale 1 in to 1/4 mi, [Nov] 1960  
5-60 (and ROBERTSON, J A, and others) Striker township, District of Algoma, Ontario Ontario Dept Mines Prelim Map P 72, scale 1 in to 1/4 mi, [Nov] 1960  
6-60. (and ROBERTSON, J A, and others) Long township, District of Algoma, Ontario Ontario Dept Mines Prelim Map P 73, scale 1 in to 1/4 mi, [Nov.] 1960.

ABRAHAM, Herbert

- 1-60 Asphalts and allied substances--Their occurrence, modes of production, uses in the arts, and methods of testing--V 1, Historical review and natural raw materials 6th ed, Princeton, N J., D. Van Nostrand Co, Inc, 370 p. incl sketch maps, sections, diagrams, tables, and illus, Sept 1960

ACHAUER, Charles Woodrow See ASCHENBRENNER, Bert Claus 1-60

## ACKERMAN

ACKERMAN, Walter C See ROBY, Robert Neil 1-60

ADAIR, Donald H

- 1-60. (and STRINGHAM, Bronson Ferrin) Intrusive igneous rocks of east central Nevada, in *Geology of east central Nevada Intermountain Assoc Petroleum Geologists, 11th Ann. Field Conf, 1960 Guidebook*, p 229-231 incl illus, sketch map, 1960

ADAIR, John K, Jr

- 1-60. East Texas oil field, Gregg, Rusk, Upshur, Smith and Cherokee Counties, Texas *Compass*, v 37, no 3, p 174-181 incl diagram and table, Mar 1960

ADAMS, Clark N See NEWTON, Joseph 1-60

ADAMS, Gordon E See MUEHLBERGER, William Rudolph 4-60

ADAMS, John Allan Stewart

- 1-60 (and RICHARDSON, K A) Radioactivity of aluminum metal *Econ Geology*, v 55, no 5, p 1060-1063 incl tables, Aug 1960  
2-60 (and RICHARDSON, K A) Thorium, uranium and zirconium concentrations in bauxite *Econ Geology*, v 55, no 8, p 1653-1675 incl diagrams and tables, Dec 1960  
3-60 (and KLINE, Mary-Cornelia, and ROGERS, John James William) Thorium and uranium content of the Enchanted Rock batholith, Texas [abs.] *Geol Soc America Bull*, v 71, no 12, pt 2, p 1811, Dec 1960  
4-60 (and others) Absolute dating of the Middle Ordovician Nature (London), v 188, no 4751, p 636-638, tables, Nov 19, 1960

ADAMS, John Emery

- 1-60 (and RHODES, Mary Louise) Dolomitization by seepage refluxion *Am Assoc Petroleum Geologists Bull*, v 44, no 12, p 1912-1920 incl diagrams and section, Dec 1960

ADAMS, John Kendal

- 1-60 Note on Lower Tertiary and Upper Cretaceous Ostracoda from New Jersey *Jour Paleontology*, v. 34, no 2, p 371-372 incl table, Mar 1960

ADAMS, William Mansfield See also STAUDER, W V 2-60

- 1-60 (and SWIFT, Lawrence Merton) Effect of geological environment on seismic coupling [abs] *Geol Soc America Bull*, v 71, no 12, pt 2, p 1811-1812, Dec 1960  
2-60. (and others) Ground-motion measurements on underground nuclear detonations [abs] *Geol Soc America Bull*, v 71, no 12, pt 2, p 2045, Dec 1960.

ADELMAN, Frank L

- 1-60 (and BACIGALUPI, Clifford M, and MOMYER, Floyd E) Final report on the Pinot experiment [Colorado] *California, Univ, Livermore, Lawrence Radiation Lab Rept UCRL-6274*, 21 p, illus, Dec 27, 1960

ADKISON, Windsor Lester

- 1-60 Subsurface cross section of Paleozoic rocks from Barber County, Kansas, to Caddo County, Oklahoma U S Geol Survey Oil and Gas Inv Chart OC 61, 2 sheets, scale about 1 in to 6 mi, with text, 1960

ADLER, Alan A

- 1-60 (and LATTMAN, Laurence Harold) Flood-plain sediments of Half Moon Creek, Pennsylvania [abs] *Geol Soc America Bull*, v 71, no 12, pt 2, p 1812, Dec. 1960

ADLER, Frank J

- 1-60 The Paradox Basin of Colorado, Chap 17 in *Mineral resources of Colorado, 1st sequel* Denver, Colorado Mineral Resources Board, p 505, 625-651 incl index maps and table, 1960



ADLER, Hans H. See NININGER, Robert D. 1-60

ADLER, Isidore

- 1-60 Electron-probe identification and analysis of small mineral grains [abs.] Geol Soc America Bull, v. 71, no 12, pt 2, p 1812-1813, Dec 1960
- 2-60 Nondestructive X-ray spectrographic analysis of extraterrestrial substances [abs ] Geol Soc America Bull., v 71, no 12, pt 2, p 2089, Dec. 1960
- 3-60 Application of X-ray spectroscopy to unsolved problems in geochemistry, in Symposium on spectroscopy Am Soc. Testing Materials Spec Tech. Pub 269, p 47-54, illus, June 1960.

AGARWAL, R G See SAWATZKY, Henry B 1-60, 2-60

AGNEW, Allen Francis See also STEECE, F V 1-60

- 1-60 (and GRIES, John Paul) South Dakota oil--Past, present, and future [abs ] Am Assoc Petroleum Geologists Bull, v 44, no 6, p 953, June 1960
- 2-60. (and GRIES, John Paul) Dig deep for South Dakota pays Oil and Gas Jour, v 58, no 12, p. 160-162, 164, 167, 169-170, 172 incl sketch maps, Mar. 21, 1960.
- 3-60 (and GRIES, John Paul) South Dakota oil--past, present, and future. Am. Assoc Petroleum Geologists Rocky Mtn Sec Geol Record 1960, p. 85-94 incl illus [1960]
- 4-60 Oil tests in Black Hills fringe, South Dakota South Dakota Acad Sci. Proc 1959, v 38, p 60-65, illus, Jan 1960

AGOGINO, George A See HAYNES, Vance 2-60

AGRELL, S. O

- 1-60 (and SMITH, Joseph Victor) Cell dimensions, solid solution, polymorphism, and identification of mullite and sillimanite Am Ceramic Soc. Jour, v 43, no 2, p 69-76 incl diagrams, tables, and illus, Feb 1, 1960.

AGUIRRE, A J. M

- 1-60. (and AGUIRRE, F Goico) A first look at the earth New York, N. Y, Franklin Watts, Inc, 72 p, illus, 1960

AGUIRRE, F Goico See AGUIRRE, A J M 1-60

AHMAD, Jaleel

- 1-60 Natural resources in low income countries--An analytical survey of socio-economic research Pittsburgh, Pennsylvania, Univ Pittsburgh Press, 118 p, 1960

AHNERT, Frank O

- 1-60 Estuarine meanders in the Chesapeake Bay area Geog Rev, v 50, no 3, p 390-401 incl sketch map, diagrams, and illus, July 1960.
- 2-60 The influence of Pleistocene climates upon the morphology of cuesta scarps on the Colorado Plateau Assoc Am Geographers Annals, v 50, no 2, p 139-156 incl sketch maps, diagrams, and illus, June 1960

AHO, Aaro E

- 1-60 Graphical statistical analysis of fracture patterns in rock encountered in engineering projects Geol Soc America Bull, v 71, no. 11, p 1719-1720, Nov 1960.

AHRENS, Louis Herman See also TAYLOR, S. R. 2-60

- 1-60 (and FLEISCHER, Michael) Report on trace constituents in granite G-1 and diabase W-1, Pt 4 in Second report on a cooperative investigation of the composition of two silicate rocks U S Geol Survey Bull 1113, p 83-111 incl tables, 1960

AITKEN, James D See CANADA GEOL SURVEY 7-60

## AKERS

### AKERS, Jay P

- 1-60 Ground water in the Red Lake area, Navajo Indian Reservation, Arizona and New Mexico Arizona Geol Soc Digest, v 3, p 41-42, Mar 1960
- 2-60 Geology of the Cameron and Leupp quadrangles, Arizona Arizona Geol Soc. Digest, v 3, p 43-44, Mar 1960

### AKI, Keiti

- 1-60 The use of Love waves for the study of earthquake mechanism Jour Geophys Research, v 65, no 1, p 323-331 incl sketch maps, diagrams, and tables, Jan 1960
- 2-60 Study of earthquake mechanism by a method of phase equalization applied to Rayleigh and Love waves Jour Geophys Research, v 65, no 2, p 729-740 incl. sketch map, diagrams, and table, Feb 1960
- 3-60 Interpretation of source functions of circum-Pacific earthquakes obtained from long-period Rayleigh waves Jour Geophys Research, v. 65, no 8, p 2405-2417 incl sketch maps, diagrams, and tables, Aug 1960
- 4-60 Further study of the mechanism of circum-Pacific earthquakes from Rayleigh waves Jour Geophys Research, v 65, no 12, p 4165-4172 incl sketch maps, diagrams, and tables, Dec 1960.
- 5-60 Use of long-period surface waves for the study of earthquake mechanism [abs] Geol Soc. America Bull, v 71, no 12, pt 2, p 2045 Dec 1960

### ALBANESE, John S

- 1-60 Geology-An infant science Earth Sci, v 13, no 6, p 213-214, Dec 1960
- 2-60 Historical notes Notes, Minerals Franklin and Sterling Hill, New Jersey, v 1, no 2, p 24, Jan. 1960, no 3, p. 38-47, Apr 1960, no. 4, p 61-63, July 1960
- 3-60 Notes on geology Notes, Minerals Franklin and Sterling Hill, New Jersey, v 1, no 2, p. 25-28, Jan 1960, no 3, p 48-50, Apr 1960.
- 4-60 Description of minerals Notes, Minerals Franklin and Sterling Hill, New Jersey, v 1, no 2, p 28-32, tables, Jan. 1960, no 3, p 51-56, tables, Apr 1960, (and FRONDEL, Clifford), no 4, p 71-75, tables, July 1960, no. 5, p 87-98, tables, Oct. 1960
- 5-60 Zincite Notes, Minerals Franklin and Sterling Hill, New Jersey, v 1, no 5, p 79-84, Oct 1960
- 6-60 Fluorescence and phosphorescence Notes, Minerals Franklin and Sterling Hill, New Jersey, v 1, no 5, p 85-86, Oct 1960

### ALBEE, Arden Leroy See also WELLS, J D 1-60

- 1-60 Relationships between the mineral association, chemical composition, and physical properties of the chlorite series [abs.] Geol Soc America Bull, v 71, no. 12, pt. 2, p 1813, Dec. 1960

### [ALBERTA] OIL and GAS CONSERVATION BOARD

- 1-60 Map showing the Paleozoic surface for Area No 4, Alberta Calgary, scale 1 in to 4 mi, July 1960

### ALBERTA SOCIETY of PETROLEUM GEOLOGISTS

- 1-60. Oil fields of Alberta--a reference volume [Calgary] Alberta Soc. Petroleum Geologists, 272 p, illus., 1960.
- 2-60 Lexicon of geologic names in the Western Canada sedimentary basin and Arctic Archipelago [Calgary] Alberta Soc. Petroleum Geologists, 380 p, 1960

### ALBIN, Donald R

- 1-60. Murfreesboro area Arkansas Geol and Conserv Comm. Spec Ground-Water Rept 1, 22 p incl maps, graph, and table, 1960

### ALCOCK, Frederick James See also CANADA GEOL SURVEY 13-60, 15-60, 16-60

- 1-60 Walter Halcro Boyd, 1878-1960 Royal Soc Canada Minutes Proc, 3d ser, v 54, p 95-97, portrait, 1960

ALDRICH, Lyman Thomas

- 1-60 (and WETHERILL, George West) Rb-Sr and K-A ages of rocks in Ontario and northern Minnesota Jour. Geophys. Research, v 65, no. 1, p 337-340 incl sketch map and tables, Jan 1960
- 2-60 (and DAVIS, Gordon Leslie) Age measurements of rocks and minerals in metamorphic regions of northern Michigan [abs ] Jour Geophys. Research, v 65, no. 8, p 2471, Aug 1960
- 3-60 Geochronology Am Geophys. Union Trans , v. 41, no 2, p 287-288, June 1960

ALETAN, George

- 1-60 The significance of microscopic investigation in the course of beneficiation of the "Brunswick Ore" Canadian Mining and Metall Bull., v 53, no 584, p. 945-952 incl. illus , Dec. 1960, Canadian Inst Mining and Metallurgy Trans , v 63, p. 654-661, 1960

ALEXANDER, Corrinne See RUBIN, Meyer 1-60

ALGER, Robert P. See also TIXIER, M. P 1-60, 2-60

- 1-60 Log evaluation at the well Petroleum Engineer for Management, v 32, no 4, p B-78, B-80, B-83, B-88, B-90, B-95, B-98, B-100 incl. diagrams, Apr 1960.

ALLARD, Gilles O

- 1-60. South half of McKenzie township, Abitibi-East electoral district-- Pt 2, South half of southeast quarter Quebec Dept. Mines Mineral Deposits Br Geol. Rept 95, p. 41-71, geol. map, 1960

ALLAWAY, William Hubert

- 1-60 Indiana's geodes are mysterious Earth Sci , v. 13, no 1, p. 19-20 incl illus., Feb 1960.

ALLEN, Alice Standish

- 1-60 Review of the causes of subsidence Art 65 in U S Geol. Survey Prof. Paper 400-B, p B147-B148, 1960

ALLEN, Clarence Roderic

- 1-60 (and others) Structure of the lower Blue Glacier, Washington Jour. Geology, v 68, no. 6, p 601-625 incl. diagrams, sketch maps, sections, and tables, also structure map and illus , Nov 1960
- 2-60 (and SILVER, Leon T , and STEHLI, Francis Greenough) Agua Blanca fault--A major transverse structure of northern Baja California, Mexico Geol. Soc America Bull., v 71, no. 4, p 457-482, illus. incl geol. and sketch maps, and table, Apr 1960
- 3-60 (and KAMB, Walter Barclay, and MEIER, Mark Frederick, and SHARP, Robert Phillip) Structure of the lower Blue Glacier, Washington [abs ] Jour Geophys Research, v 65, no 8, p. 2471, Aug 1960

ALLEN, John Eliot See also CRAWFORD, T. C 1-60

- 1-60 Ideas on the origin of Oregon agate (with some arithmetical notes on silica and iron) Geol Soc Oregon Country Geol News Letter, v 26, no 7, p. 53-55 incl. table, July 1960

ALLEN, Rex V. See BARNES, D. F. 2-60

ALLEN, Rhesa McCoy, Jr

- 1-60. Metamorphic-rock associations of Greene and Madison Counties, Virginia [abs ] Geol. Soc. America Bull., v. 71, no. 12, pt 2, p. 2011, Dec 1960.

ALLEN, Thomas

- 1-60 (and CLARK, Edward Lee) Coal resources of Colorado [abs.] Geol. Soc America Bull , v 71, no 12, pt. 2, p 1814, Dec. 1960

## ALLEN

ALLEN, Victor Thomas See also HOSTERMAN, J W 1-60

1-60 (and JOHNS, William Davis) Clays and clay minerals of New England and eastern Canada Geol Soc America Bull , v 71, no 1, p 75-85 incl. index map and table, Jan 1960

2-60 Comparison of bauxite deposits of Europe with those in U S A Internat Geol Cong , 21st, Copenhagen, 1960, Rept , pt 16, p 230-236, 1960

3-60 Clay minerals in bauxite deposits of Europe [abs ] Geol Soc America Bull , v 71, no 12, pt 2, p 1814, Dec 1960, Econ Geology, v 55, no 6, p 1338-1339, Sept -Oct 1960.

ALLEN, William Burrows See also LANG, S M 1-60

1-60 (and RYAN, Dennis J ) Ground-water map of the Fall River quadrangle, Massachusetts-Rhode Island, showing water-bearing formations and related ground-water data Rhode Island Water Resources Coordinating Board Ground-Water Map GWM 7, scale 1 24,000 (1 in to 2,000 ft ), with sections, 1960

ALLINGHAM, John Wing

1-60 Use of aeromagnetic data to determine geologic structure in northern Maine Art 54 in U S Geol Survey Prof Paper 400-B, p B117-B119 incl profiles, 1960

2-60 Interpretation of aeromagnetic anomalies in southeast Missouri Art 95 in U S Geol Survey Prof Paper 400-B, p B216-B219 incl aeromagnetic map and profiles, 1960

ALLISON, Edwin Chester See DURHAM, John Wyatt 1-60, 3-60

ALLISON, Ira Shimmín See EMMONS, William Harvey 1-60

ALSUP, S A See ANDRETTA, Daniel B 1-60

ALMANZA V , Eliseo See PESZUERA VELÁZQUEZ, Rubén 1-60

ALTENHOFEN, Robert E See DOELL, Richard Rayman 2-60

ALTSCHAEFFL, Adolph G See LEONARDS, Gerald Allen 1-60

ALTSCHULER, Zalman Samuel See also OWENS, J P 1-60

1-60 (and YOUNG, Edward Joseph) Residual origin of the "Pleistocene" sand mantle in central Florida uplands and its bearing on marine terraces and Cenozoic uplift Art 89 in U S Geol Survey Prof Paper 400-B, p B202-B207 incl topographic and isograde contour maps, sections, and diagrams, 1960

ALVAREZ, Manuel, Jr

1-60 Macrosísmos y geología Asoc Mexicana Geofísicos Explor Bol , v 1, no 3, p 287-298, tables, July-Sept 1960

ALVORD, Donald C See DRAKE, Avery Ala, Jr 1-60

AMBRASEYS, Nicols N

1-60 On the seismic behaviour of earth dams World Conf Earthquake Eng , 2d, Tokyo and Kyoto, Japan, July 11-18, 1960, Proc , v 1, p 331-358 incl sketch map, table, and discussion, Tokyo, Sci Council Japan, 1960

AMBROSE, John Willis

1-60 Memorial to Manly Benson Baker (1877-1958) Geol Soc America Proc 1959, p 111-113, portrait, Oct. 1960

2-60 Manly Benson Baker, 1877-1958 Royal Soc Canada Minutes Proc , 3d ser , v 54, p 83-87, portrait, 1960

AMERICAN ASSOCIATION of PETROLEUM GEOLOGISTS See COOPER, Byron Nelson 1-60, GATES, Olcott 1-60, OWENS, James Patrick 4-60

AMERICAN ASSOCIATION of PETROLEUM GEOLOGISTS, Committee on Stratigraphic Correlations

- 1-60 (Sacramento Valley Sub-Committee, Harding, Tod Powell, chairman) Correlation section longitudinally north-south through Sacramento Valley from Red Bluff to Rio Vista, California Am Assoc Petroleum Geologists Pacific Sec Correlation Sec 13, Oct 1960

AMERICAN GEOGRAPHICAL SOCIETY

- 1-60 Nine glacier maps, northwestern North America, to accompany nine separate map sheets on scale of 1:10,000 Am Geog. Soc Spec Pub 34, 22 p, illus, 1960.

AMERICAN GEOLOGICAL INSTITUTE

- 1-60 GeoScience abstracts Washington, D C, v 2, nos 1-12, pagged separately, Jan-Dec 1960

AMERICAN GEOLOGICAL INSTITUTE, Glossary Review Committee

- 2-60 (Weller, James Marvin, chairman) Supplement to the Glossary of geology and related sciences Washington, D. C, Am Geol Inst., 72 p, 1960 (Glossary was published in 1957)

AMERICAN INSTITUTE of MINING, METALLURGICAL, and PETROLEUM ENGINEERS

- 1-60 (Gillson, Joseph Lincoln, and others, editors) Industrial minerals and rocks--nonmetallics other than fuels 3d ed, completely revised, New York, N Y, Am Inst. Mining, Metall., and Petroleum Engineers, 934 p, illus, 1960, originally published 1937 Includes papers by numerous authors which are cited individually.

AMERICAN SOCIETY of PHOTOGRAMMETRY

- 1-60 Manual of photographic interpretation Washington, D C, 868 p incl sketch map, diagrams, tables, and illus, 1960. Includes individual papers which are cited separately.

AMERICAN SOCIETY for TESTING MATERIALS

- 1-60 Symposium on technical developments in the handling and utilization of water and industrial waste water--3d Pacific area national meeting, San Francisco, Calif., October 15, 1959 Am Soc Testing Materials Spec. Tech Pub 273, 92 p incl sketch maps, sections, diagrams, tables, illus, and discussion, 1960 Includes individual papers which are cited separately

AMES, H Tate See KREMP, Gerhard Otto Wilhelm 3-60

AMES, Lloyd Leroy, Jr See also PEARCE, D W. 1-60

- 1-60. The cation sieve properties of clinoptilolite Am Mineralogist, v 45, nos 5-6, p 689-700 incl diagrams and tables, May-June 1960  
2-60. Some cation substitutions during the formation of phosphorite from calcite Econ Geology, v 55, no 2, p 354-362 incl diagrams, Mar-Apr 1960

AMORUSO, John Joseph See LANDES, Kenneth Knight 2-60

AMPIAN, Sarkis G

- 1-60 Preferential stain of beryl [abs] Geol Soc America Bull., v 71, no. 12, pt 2, p 1814-1815, Dec 1960

AMSDEN, Thomas William

- 1-60 Stratigraphy and paleontology of the Hunton group in the Arbuckle Mountain region--Pt 6, Hunton stratigraphy Oklahoma Geol Survey Bull. 84, 311 p, illus incl geol map, Jan 14, 1960.  
2-60 Lissatrypoidea concentrica (Hall), emend Boucot and Amsden--Illustrations of the lectotype Oklahoma Geology Notes, v 20, no 6, p 138-139, illus, June 1960.  
3-60 Silurian and Devonian strata in the Marble City area, Sequoyah County, Oklahoma, in North-eastern Oklahoma Kansas Geol Soc., 25th Field Conf, Sept 1960, Guidebook, p 110-112, illus, 1960

## AMSTUTZ

- AMSTUTZ, Gerhardt Christian See also KRISHNASWAMY, D S 1-60,  
LIGASACCHI, Attilio 1-60
- 1-60 The preparation and use of polished thin sections Am Mineralogist, v 45, nos 9-10, p 1114-1116 incl illus, Sept-Oct 1960
  - 2-60 Genesis of the spilite-keratophyre association (progress report) [abs] Geol Soc. America Bull, v 71, no 12, pt 2, p 1815, Dec 1960
  - 3-60. (and DORAI-BABU, P) Geometric criteria for deuteric mineralization in the Michigan copper deposits [abs] Geol Soc America Bull, v 71, no 12, pt 2, p 1815-1816, Dec 1960
  - 4-60 Geometric classification of rocks and mineral deposits, AGI Data Sheet 21 GeoTimes, v 5, no 4, p 23-24 incl diagrams, Nov-Dec 1960
  - 5-60. Genetische Zusammenhänge zwischen Erzlaggestätten und ring-oder polygonal-Strukturen im Präkambrium und Paläozoikum von Missouri (USA) und anderen Schildgebieten Zeitschr Erzbergbau u Metallhüttenwesen (Stuttgart, Germany), Band 13, Heft 9, p 430-434, illus incl geol sketch map, Sept 1960.
- ANANIA, John See COHEN, Alvin Jerome 2-60
- ANDEREGG, Ralph Charles. See HEALD, Milton Tidd 1-60
- ANDERS, Edward See also FISH, R A 1-60, GOLES, G G 1-60
- 1-60 (and STEVENS, Charles Martin) Search for extinct lead 205 in meteorites Jour Geophys Research, v 65, no 10, p. 3043-3047 incl tables, Oct 1960.
  - 2-60 (and others) Cosmic-ray-induced radioactivity in a fresh meteorite [abs] Jour Geophys Research, v 65, no 8, p 2471, Aug 1960
  - 3-60 (and STEVENS, Charles Martin) Thallium-205 and the age of the solar system [abs] Jour Geophys Research, v 65, no 8, p 2471-2472, Aug 1960
- ANDERS, Robert Bernard
- 1-60 Ground-water geology of Karnes County, Texas Texas Board of Water Engineers Bull 6007, 107 p, illus incl geol map, July 1960
- ANDERSEN, Harold V
- 1-60 Geology of Sabine Parish Louisiana Geol Survey Geol Bull 34, 164 p, illus. incl geol map, Feb 1960
- ANDERSON, Alfred L See also NEWTON, Joseph 1-60
- 1-60 Genetic aspects of the monazite and columbium-bearing rutile deposits in northern Lemhi County, Idaho Econ Geology, v 55, no 6, p. 1179-1201 incl index sketch map and illus, Sept-Oct 1960
- ANDERSON, Alfred T, Jr
- 1-60 Diagnostic textures of some welded tuffs from southeastern Idaho Illinois State Acad Sci. Trans 1960, v 53, nos 1-2, p 25-35, illus, Oct 15, 1960
- ANDERSON, Arthur L See BENNETT, Walter P 1-60
- ANDERSON, Charles Alfred
- 1-60 Mining geology Mining Cong Jour., v 46, no 2, p 38-41 incl illus, Feb 1960
- ANDERSON, Donald Thomas
- 1-60 The distribution of copper and nickel in magmatic sulphides [abs] Canadian Mining Jour., v 81, no 6, p 169, June 1960
- ANDERSON, Lennart A.
- 1-60. Electrical properties of sulfide ores in igneous and metamorphic rocks near East Union, Maine Art 57 in U S Geol Survey Prof Paper 400-B, p B125-B128 incl diagrams, 1960.
  - 2-60 (and EKREN, Einar Bartlett, and FRISCHKNECHT, Frank Conrad) Electromagnetic and induced polarization studies in Maine [abs.] Mining Eng, v 12, no 1, p 23, Jan 1960.

ANDERSON, Richard Charles

- 1-60. Sand and gravel resources of Champaign County, Illinois Illinois State Geol Survey Div Circ 294, 15 p. incl. index map, diagrams, and tables, resource map, 1960

ANDERSON, Robert Wylie

- 1-60. Fluvanna multi-pay field, Borden and Scurry Counties, Texas, in Abilene Geol Soc , Geological contributions 1960, p 43-49, illus., 1960

ANDERSON, Roger Yates

- 1-60. (and KIRKLAND, Douglas W ) Origin, varves, and cycles of Jurassic Todilto formation, New Mexico Am. Assoc Petroleum Geologists Bull , v 44, no 1, p 37-52 incl. sketch map, diagrams, chart, and illus , Jan. 1960
- 2-60. Evidence of seasonal lamination [abs ] Geol Soc America Bull., v 71, no 12, pt 2, p. 1816, Dec 1960
- 3-60 Cretaceous-Tertiary palynology of the eastern side of the San Juan Basin, New Mexico [abs ]. Dissert Abs , v. 20, no 11, p 4366, May 1960
- 4-60 Cretaceous-Tertiary palynology, eastern side of the San Juan Basin, New Mexico New Mexico Bur Mines and Mineral Resources Mem 6, 58 p , illus , 1960.

ANDERSON, Sidney Bakken

- 1-60 (and MENDOZA, Herbert A ) Contour map of the pre-Mesozoic surface in North Dakota North Dakota Geol Survey Misc Map 6, scale about 1 in to 15 mi , Jan 1960
- 2-60 (and MENDOZA, Herbert A ) Pre-Mesozoic paleogeologic map of North Dakota North Dakota Geol Survey Misc Map 7, scale about 1 in to 16 mi , Jan 1960
- 3-60 (and HANSEN, Dan Erick, and EASTWOOD, William Parker) Sub-surface studies, in Oil fields in the Burke County area, North Dakota-- Geological, magnetic, and engineering studies North Dakota Geol. Survey Rept Inv 36, p 1-25, illus., 1960

ANDERSON, Sonia Ruth

- 1-60 The collection, study and classification of some eastern Nebraska fossils, in Science projects handbook, Moore, S., ed Washington, D C., Sci Service, p. 88-91 incl diagram, 1960

ANDERSON, V H.

- 1-60 A technique for photographing snow-pit stratigraphy Jour. Geophys. Research, v 65, no 3, p. 1080-1082 incl. chart and illus , Mar 1960.

ANDERSON, Warren L

- 1-60. (and SCHAEFFER, Frederick E, Jr ) Introduction, in Geology of the Silver Island Mountains, Box Elder and Tooele Counties, Utah, and Elko County, Nevada Utah Geol Soc , Guidebook to the Geology of Utah, no 15, p 7-12 incl index and sketch map, 1960
- 2-60 Igneous rocks of the northern Silver Island Mountains, in Geology of the Silver Island Mountains, Box Elder and Tooele Counties, Utah, and Elko County, Nevada Utah Geol Soc , Guidebook to the Geology of Utah, no 15, p 114-120 incl section and illus , 1960
- 3-60 Structural geology of the northern Silver Island Mountains, in Geology of the Silver Island Mountains, Box Elder and Tooele Counties, Utah, and Elko County, Nevada Utah Geol. Soc , Guidebook to the Geology of Utah, no 15, p 125-130 incl diagrams, 1960.
- 4-60. Geomorphology of the Silver Island Mountains, in Geology of the Silver Island Mountains, Box Elder and Tooele Counties, Utah, and Elko County, Nevada Utah Geol. Soc , Guidebook to the Geology of Utah, no 15, p 150-158 incl illus., 1960
- 5-60 Economic geology of the northern Silver Island Mountains, in Geology of the Silver Island Mountains, Box Elder and Tooele Counties, Utah, and Elko County, Nevada Utah Geol Soc , Guidebook to the Geology of Utah, no. 15, p 159-161, 1960.

## ANDRAU

ANDRAU, William Evert See HINDS, G. W 1-60

ANDREASEN, Gordon Ellsworth See also ZIETZ, Isidore, 1-60

1-60 (and ZIETZ, Isidore) Magnetic evidence for the attitude of a buried magnetic mass Art. 53 in U S. Geol. Survey Prof. Paper 400-B, p. B114-B116 incl. aeromagnetic map and diagrams, 1960

2-60. (and KANE, Martin Francis, and ZIETZ, Isidore) Regional geological interpretation of aeromagnetic and gravity data for the Rowe-Mora area, New Mexico Art. 107 in U S. Geol. Survey Prof. Paper 400-B, p. B238-B239 incl. structure contour map, 1960

ANDRESEN, Marvin John

1-60. Geology and petrology of the Trivoli sandstone (Pennsylvanian) in the Illinois basin [abs ] Dissert Abs , v 21, no. 6, p 1522, Dec 1960

ANDRETTA, Daniel B.

1-60 (and ALSUP, S. A.) Geology and Cenozoic history of the Norris-Elk Creek area, southwest Montana, in West Yellowstone--Earthquake area Billings Geol Soc , 11th Ann Field Conf., Sept 1960, [Guidebook] p. 185-190 incl profiles and illus., 1960

ANDREWS, Donald Irvin

1-60 Louann salt and its relation to Gulf Coast salt domes--Compilation and review of selected papers and associated data [abs ] Am Assoc Petroleum Geologists Bull , v 44, no. 9, p 1599-1600, Sept. 1960

2-60 The Louann salt and its relationship to Gulf Coast salt domes Gulf Coast Assoc Geol Soc Trans , v 10, p. 215-240 incl sketch maps, sections, diagrams, and tables, 1960.

ANDRICHUK, John Michael

1-60 Facies analysis of Upper Devonian Wabamun group in west-central Alberta, Canada Am. Assoc Petroleum Geologists Bull., v 44, no 10, p 1651-1681 incl. index map, isopach and lithofacies maps, sections, and illus , Oct. 1960

2-60. Stratigraphic evidence for tectonic and current control of Upper Devonian reef sedimentation, Duhamel area, Alberta [abs ] Canadian Oil and Gas Industries, v 13, no 4, p. 105, Apr 1960.

ANGONA, Frank Anthony

1-60. Two-dimensional modeling and its application to seismic problems Geophysics, v. 25, no 2, p. 468-482 incl diagrams and table, Apr 1960.

ANISGARD, Harry Williams. See BILLINGS GEOL SOC 1-60

ANNEAR, R. C.

1-60. (and COLE, Willard A.) Iron mining methods and costs, Greenwood mine, Ishpeming, Mich U. S Bur Mines Inf. Circ 7971, 36 p incl. index map, sections, diagrams, and tables, 1960

ANNELL, Charles Sylvester

1-60. (and HELZ, Armin Werner) Spectrochemical analysis using controlled atmospheres with a simple gas jet Art 227 in U S Geol. Survey Prof. Paper 400-B, p. B497-B499 incl illus , 1960

ANTHONY, John Williams

1-60. A note on the probability of assimilation of rocks intruded by the central Arizona diabase Arizona Geol Soc. Digest, v 3, p 99-102 incl diagram, Mar. 1960

ANTOINE, John Woodworth. See EWING, John Isaac 2-60

APPLEMAN, Daniel Everett See also CLARK, J R 4-60, 5-60, MORIMOTO, Nobuo 4-60, MROSE, M. E 1-60

1-60 The crystal structure of bikitaite,  $\text{LiAlSi}_2\text{O}_6 \cdot \text{H}_2\text{O}$  [abs ] Acta Cryst , v 13, pt 12, p. 1002, Dec. 1960



APPLEYARD, Edward C.

- 1-60 Metasomatic or magmatic origin of nepheline-bearing gneisses at Wolfe, Lyndoch township, Ontario [abs] Canadian Mining Jour , v 81, no 3, p 127, Mar 1960

APPLIN, Esther English Richards

- 1-60. A tropical sea in central Georgia in late Oligocene time Art 90 in U. S. Geol Survey Prof Paper 400-B, p B207-B209 incl index map and log, 1960

APPLIN, Paul Livingston

- 1-60. Significance of changes in thickness and lithofacies of the Sunniland limestone, Collier County, Fla Art 91 in U. S. Geol Survey Prof Paper 400-B, p B209-B211 incl index map and sections, 1960

ARAUJO QUEIROZ, Lincoln See WALKER, Fred C. 1-60

ARCHIBALD, G M

- 1-60 Preliminary report on the southwest quarter of Lévy township, electoral district of Abitibi-East Quebec Dept. Mines Geol Surveys Br. Prelim. Rept 419, 11 p., geol map, 1960, also French ed

ARCINIEGA, Victor M

- 1-60 Mineral identification [Pt 1] Mineralogist, v. 28, nos. 11-12, p. 203-204, 206, Nov.-Dec. 1960.

ARCTIC INSTITUTE of NORTH AMERICA

- 1-60 (Tremaine, Marie, editor) Arctic bibliography, V 9 Washington, D. C., [U S] Dept. Defense, 1599 p , 1960.

ARKLE, Thomas, Jr

- 1-60 Regional aspects of the Monongahela series of the Appalachian basin [abs] Geol Soc America Bull , v 71, no 12, pt 2, p 1817, Dec 1960.  
2-60 Regional aspects of the Monongahela series (Pennsylvanian system) of the Appalachian Basin [abs] West Virginia Acad Sci Proc 1959, v 31, p. 58, Dec 1960.

ARMITAGE, Jack Howard

- 1-60 Nature and occurrence of Triassic oil and gas in northeastern British Columbia [abs] Canadian Oil and Gas Industries, v 13, no. 4, p 104, Apr 1960

ARMS, Bernard C.

- 1-60 A silica depressant method for concentrating fossil pollen and spores Micropaleontology, v 6, no 3, p 327-328, illus., July 1960

ARMSTRONG, Augustus Keathly

- 1-60. Mississippian system of southwestern New Mexico and southeastern Arizona [abs] Geol. Soc America Bull , v 71, no 12, pt 2, p 1817, Dec 1960

ARMSTRONG, Chuck

- 1-60 (and ARMSTRONG, Patricia) Niagarensis versus celebra EarthSci , v 13, no 4, p 137-138 incl illus , Aug. 1960

ARMSTRONG, Herbert Stoker

- 1-60 Marbles in the "Archean" of the southern Canadian Shield Internat. Geol Cong , 21st, Copenhagen, 1960, Rept , pt 9, p 7-20 incl index map, 1960  
2-60 Township of Glamorgan, county of Haliburton, Ontario Ontario Dept. Mines Prelim Geol Map P 59, scale 1 in to 1/2 mi [June 14, 1960]  
3-60 (and others) Township of Monmouth, Ontario Ontario Dept Mines Prelim Geol Map P 60, scale 1 in to 1/2 mi [June 14, 1960]

## ARMSTRONG

ARMSTRONG, John Edward See also CANADA GEOL SURVEY 26-60

- 1-60. Geology of proposed Columbia River dam sites, British Columbia [abs.] Geol Soc America Bull, v. 71, no 12, pt 2, p 2046, Dec 1960.
- 2-60 Field trip to illustrate geology of Coast Mountains, North Vancouver, B C., in Geol. Discussion Club, Guidebook for geological field trips in southwestern British Columbia Vancouver, B. C., p 15-19 incl. geol. sketch map, Mar 1960.
- 3-60. Surficial geology of Sumas map-area, British Columbia Canada Geol Survey Paper 59-9, 27 p, illus. incl geol map, 1960
- 4-60. Soils of the coastal area of southwest B. C. [abs] Royal Soc. Canada Minutes Proc., 3d ser., v 54, App C, p. 38, 1960

ARMSTRONG, Patricia. See ARMSTRONG, Chuck 1-60

ARMSTRONG, Richard L. See TUREKIAN, Karl K 2-60

ARNAL, Robert Emile See BANDY, Orville Lee 1-60

ARNDT, Harold Harry

- 1-60 (and WOOD, Gordon Harry, Jr.) Late Paleozoic orogeny in eastern Pennsylvania consists of five progressive stages Art. 81 in U. S Geol. Survey Prof Paper 400-B, p B182-B184 incl. geol sketch map and sections, 1960

ARNDT, Robert See BOUCOT, Arthur James 3-60

ARNOLD, Chester Arthur

- 1-60. A lepidodendrid stem from Kansas and its bearing on the problem of cambium and phloem in Paleozoic lycopods Michigan Univ. Mus Paleontology Contr, v 15, no 10, p 249-267, illus., Aug 1, 1960.

ARNOLD, G. W., Jr

- 1-60 Defects in natural and synthetic quartz, in Symposium on defect structure of quartz and glassy silica Physics and Chemistry Solids, v. 13, nos 3-4, p 306-320, illus, June 1960.

ARNOLD, James Richard See also MERRILL, J R. 1-60

- 1-60 Cosmic-ray-induced radioactivity in meteorites [abs] Jour Geophys. Research, v 65, no. 8, p 2472, Aug 1960.

ARNOW, Theodore. See also BOGART, D B. 1-60

- 1-60 (and BOGART, Dean Butler) Water problems of Puerto Rico and a program of water-resources investigations Caribbean Geol Conf, 2d, Mayagüez, Puerto Rico, Jan 4-9, 1959, Trans, p 120-129 incl sketch maps and table, with discussion, 1960
- 2-60 (and CROOKS, James Walker) Public water supplies in Puerto Rico Puerto Rico Water Resources Authority Water-Resources Bull. 2, 34 p, illus, 1960

ARNTSON, R. H

- 1-60. (and DICKSON, Frank Wilson, and TUNELL, George) Systems  $S-Na_2O-H_2O$  and  $S-H_2O$ --Application to the mode of origin of natural alkaline polysulfide and thiosulfate solutions Am Jour. Sci, v 258, no 8, p 574-582 incl. diagram and tables, Oct 1960

ARRINGTON, J. R

- 1-60. Predicting the size of crude reserves is key to evaluating exploration programs--And here's a practical way to evaluate reserves Oil and Gas Jour, v 58, no 9, p 130-132, 134 incl. diagram and charts, Feb 29, 1960

ARTUSY, Raymond Longino

- 1-60 Ostracoda of the Stone City beds at Stone City bluff, Texas [abs.] Dissert Abs, v. 21, no 3, p 590-591, Sept 1960

## ASCHENBRENNER, Bert Claus

- 1-60 (and ACHAUER, Charles Woodrow) Minimum conditions for migration of oil in water-wet carbonate rocks Am Assoc. Petroleum Geologists Bull., v. 44, no 2, p. 235-243 incl diagrams, tables, and illus., Feb 1960.
- 2-60 (and CHILINGAR, George Varos) Teodorovich's method for determining permeability from pore-space characteristics of carbonate rocks Am. Assoc. Petroleum Geologists Bull , v. 44, no. 8, p 1421-1424 incl tables, Aug 1960.

## ASIMOV, Isaac

- 1-60 The physical sciences, V 1 of The intelligent man's guide to science 1st ed., New York, N Y., Basic Books, Inc , 382 p., illus , 1960

ASSELSTINE, Erwin Sumner See WELD, Betsy Anne 1-60

## ASSITER, Edward J

- 1-60. Electronic computers aid many exploration phases World Oil, v. 150, no 5, p 105-111 incl. diagrams, tables, and illus , Apr 1960
- 2-60 Electronic computers aid in exploration decisions and interpretations [abs.] Am Assoc Petroleum Geologists Bull., v. 44, no 1, p. 125, Jan. 1960

## ASSOCIATION INTERNATIONALE de SÉDIMENTOLOGIE

- 1-60 Symposium--Sedimentology and the oil industry [and] Bibliographie des travaux récents de sédimentologie, [presented at] 5th World Petroleum Congress, New York, 1959 Paris, Éd. Technip, 164 p incl sketch maps, 1960

## ASSOCIATION of MISSOURI GEOLOGISTS

- 1-60 Middle Mississippian and Pennsylvanian stratigraphy of St. Louis and St Louis County, Missouri, [Guidebook] 7th annual meeting, October 7-8, 1960 St Louis, [12] p , illus , sponsored by Dept Geology and Geol Eng , Inst Technology, St Louis Univ , 1960

ATCHISON, Carl Hayden. See VERTREES, Charles David 1-60

## ATHERTON, Elwood

- 1-60 (and others) Differentiation of Caseyville (Pennsylvanian) and Chester (Mississippian) sediments in the Illinois Basin Illinois State Geol. Survey Div Circ. 306, 36 p , illus., 1960

## ATKINS, E R, Jr

- 1-60 (and SMITH, G H ) The influence of particle shape on the formation resistivity of sandstone and shales [abs ] Jour Petroleum Technology, v 12, no 9, p. 56, Sept 1960.

## AUBERGER, Michel

- 1-60 (and RINEHART, John Sargent) Energy loss associated with impact of steel spheres on rocks Jour Geophys Research, v 65, no. 12, p 4157-4164 incl diagrams and tables, Dec 1960.
- 2-60 (and RINEHART, John Sargent) Attenuation of acoustic waves in rocks [abs ] Colorado-Wyoming Acad Sci. Jour , v. 5, no. 1, p 22-23, Dec 1960

## AUGER, Paul Émile

- 1-60 Les gites de manganèse de Virginie et leurs possibilités économiques [abs ]. Assoc Canadienne-Française Av Sci. Annales, v 26, p 108, 1960

AULT, Ronald Keith. See MacFARLANE, Robert M 1-60

## AULT, Wayne Urban

- 1-60 (and KULP, J. Laurence) Sulfur isotopes and ore deposits Econ. Geology, v 55, no. 1, p 73-100 incl sketch map, diagrams, and tables, Jan -Feb. 1960
- 2-60 Geochemical research during the 1959-60 activity of Kilauea volcano [Hawaii] Geochem. News, no. 25, p 1-5, illus., Dec 1960.

## AUNE

### AUNE, Quintin A

- 1-60. The geologic map California Div Mines Mineral Inf Service, v 13, no 8, p. 1-8, illus., Aug 1960

### AUSTIN, Carl Fulton See also SLAWSON, W F 1-60

- 1-60. (and SLAWSON, William Francis) Lead-isotope variations within a single crystal of galena [abs.] Geol Soc America Bull, v 71, no 12, pt 2, p 1818, Dec 1960.  
2-60 Some scheelite occurrences in the Magdalena mining district of New Mexico New Mexico Bur Mines and Mineral Resources Circ 55, 17 p, illus, 1960

### AUSTIN, Charles R.

- 1-60. Earthquake fluctuations in wells in New Jersey New Jersey Dept Conserv and Econ Devel, Div Water Policy and Supply Water Resources Circ. 5, 13 p incl sketch maps, tables, and diagrams, 1960

### AUSTIN, S Ralph

- 1-60 Ilmenite, magnetite, and feldspar alteration under reducing conditions Econ Geology, v 55, no 8, p 1758-1759, Dec 1960, discussion of discussion by Dorothy Carroll, no 3, p 618-619, May 1960, of paper by J W Gruner, v 54, p. 1215-1323, 1959  
2-60. "Replacement" by grain cavity filling [abs.] Geol Soc America Bull, v 71, no 12, pt 2, p 1818-1819, Dec 1960.

### AVERITT, Paul

- 1-60 Coal reserves of the United States, January 1, 1960 Art 39 in U S. Geol Survey Prof Paper 400-B, p B81-B82 incl table, 1960

### AWALD, Clifford J.

- 1-60 Quartz "diamonds" of New York State Sci March, v 41, no. 1, p 23-24 incl illus, Oct 1960  
2-60 Fluorescence and other luminescence phenomena of minerals Sci March, v 41, no 2, p 40-45 incl. table, Dec. 1960

### AXELROD, Daniel Isaac. See also PUTNAM, W C 4-60

- 1-60 (and TING, William Su) Pleistocene floras from the Chagoopa surface, southern Sierra Nevada [abs.] Geol Soc America Bull., v. 71, no 12, pt. 2, p 1819, Dec 1960  
2-60 (and TING, William Su) Late Pliocene floras east of the Sierra Nevada [California-Nevada] California Univ Pubs Geol Sci, v 39, no. 1, p 1-117, illus, Nov. 7, 1960.  
3-60. The evolution of flowering plants, in Tax, S, ed, Evolution after Darwin, V 1 Chicago, Ill, Univ Chicago Press, p. 227-305 incl illus., 1960

### AXELROD, Joseph Meyer. See FAHEY, Joseph John 1-60, MILTON, Charles, 1-60

### AYALA-CASTAÑARES, Agustín

- 1-60 *Orbitolina morelensis* sp. nov de la formación Morelos del Cretácico Inferior (Albiano) en la región de Huetamo, Michoacán, México México Univ Nac Inst Geología Paleontología Mexicana, no 6, 16 p., illus, 1960

### AYERS, Marshall G

- 1-60 Regional geology of the Cook Inlet area, Alaska [abs.] Alaskan Sci. Conf, 10th, Juneau, Aug. 25-28, 1959, Proc, p 105-106, Dec 1960.

### AYRES, Gilbert H

- 1-60 (and JOHNSON, Fred L, Jr.) Spectrophotometric determination of rhodium with sym-diphenylcarbazone Anal Chim Acta (Amsterdam), v 23, no 5, p 448-457 incl diagram and tables, Nov. 1960.

AYUB M , Alejandro R

- 1-60. Minerales de manganeso en los estados de Sonora, Durango, Zacatecas y San Luis Potosí México Consejo Recursos Nat no Renovables Bol 49, 136 p , illus., 1960

AZÁROFF, Leonid Vladimirovich

- 1-60. The structure of crystals, Chap 3 of Introduction to solids, by author. New York, N Y , McGraw-Hill Book Co , Inc , p 43-73, illus., 1960.  
2-60 Formation of crystals, Chap 7 of Introduction to solids, by author New York, N Y , McGraw-Hill Book Co , Inc , p 140-165, illus , 1960.  
3-60. A one-dimensional Fourier analogue computer and its application to the refinement of the structure of cubanite [abs ] Massachusetts Inst Technology Abs Theses 1953-54, p 91, 1960

AZMON, Emanuel

- 1-60. Heavy minerals in sediments of Southern California [abs ] Dissert. Abs , v. 21, no 6, p. 1522-1523, Dec 1960.

BAADSGAARD, Halfdan See also FOLINSBEE, R E 1-60

- 1-60 (and FOLINSBEE, Robert Edward, and LIPSON, Joseph Isaac) Caledonian or Acadian granites of the northern Yukon [abs ] Oil in Canada, v. 12, no 16, p 33, Feb. 15, 1960

BAADSGAARD, P H

- 1-60 Barbados, W. I --Exploration results 1950-1958 Internat Geol Cong. 21st, Copenhagen, 1960, Rept., pt 18, p 21-27 incl. sketch map, sections, and illus., 1960.

BAAS BECKING, Lourens Gerhard Marinus

- 1-60. (and KAPLAN, Ian R., and MOORE, Derek) Limits of the natural environment in terms of pH and oxidation-reduction potentials Jour Geology, v 68, no 3, p. 243-284 incl diagrams and tables, May 1960

BABER, Kenneth D

- 1-60 (and PETERSEN, N S ) The mineral industry of Idaho in 1959 Idaho Mining Industry, 60th Ann Rept 1959, p 106-113 incl tables [1960]

BACHMAN, George Odell

- 1-60 Southwestern edge of late Paleozoic landmass in New Mexico Art 108 in U. S. Geol. Survey Prof Paper 400-B, p B239-B241 incl geol map and section, 1960

BACHMANN, Hans Gert

- 1-60 The origin of ores Sci Am., v 202, no 6, p 146-150, 152, 154, 156 incl diagrams and illus , June 1960.

BACIGALUPI, Clifford M See ADELMAN, Frank L. 1-60

BACK, William

- 1-60 Electrode for simplified field determination of chloride in ground water Am. Water Works Assoc Jour , v 52, no 7, p 923-926 incl diagrams and illus., July 1960.  
2-60 Origin of hydrochemical facies of ground water in the Atlantic Coastal Plain Internat Geol Cong , 21st, Copenhagen, 1960, Rept , pt 1, p. 87-95 incl index map and diagrams, 1960.  
3-60. Hydrochemical facies and ground-water flow patterns in northern Atlantic Coastal Plain [abs.] Am. Assoc Petroleum Geologists Bull., v. 44, no 7, p 1244-1245, July 1960.  
4-60 (and BARNES, Ivan) Field measurements of oxidation potentials related to iron in ground water [abs.] Jour Geophys Research, v 65, no 8, p 2473, Aug 1960

BACON, Charles F

- 1-60 New interpretation of relationships of Pliocene sediments to adjacent formations, Stanislaus County, California [abs ] Geol Soc America Bull , v 71, no 12, pt 2, p 2046, Dec. 1960

BADER

BADER, Richard George See SMITH, James B 1-60

BADGLEY, Peter Coles

- 1-60. (and PENTTILLA, William Charles, and TRIMBLE, James K) Geologic aspects of fractured reservoirs [abs ] Mining Eng , v 12, no 10, p 1057, Oct 1960
- 2-60 Tectonic relationships of central Colorado, in Rocky Mtn Assoc Geologists, Guide to the geology of Colorado Denver, p 165-169, tectonic maps, 1960
- 3-60 (and PENTILLA, William Charles, and TRIMBLE, J K.) Geologic aspects of fractured reservoirs [abs ] Jour Petroleum Technology, v 12, no 9, p 54, Sept 1960

BADO, John Tama See JONES, Cecil L , Jr 1-60

BAGNOLD, Ralph A See also LEOPOLD, L B 2-60

- 1-60 Some aspects of the shape of river meanders U S Geol Survey Prof Paper 282-E, p 135-144, illus , 1960

BAILEY, Edgar Herbert

- 1-60. (and STEVENS, Rollin Elbert) Selective staining of K-feldspar and plagioclase on rock slabs and thin sections Am Mineralogist, v. 45, nos 9-10, p 1020-1025 incl illus , Sept -Oct 1960
- 2-60 Franciscan formation of California as an example of eugeosynclinal deposition [abs ] Geol Soc America Bull , v 71, no 12, pt 2, p 2046-2047, 1960
- 3-60. (and STEVENS, Rollin Elbert) Selective staining of plagioclase and K feldspar on rock slabs and thin sections [abs ] Geol. Soc America Bull., v 71, no. 12, pt 2, p 2047, Dec 1960
- 4-60 The Franciscan formation--its distribution and peculiarities [abs ] California Assoc Eng Geologists, 3d Ann Mtg , Berkeley, Oct 14-16, 1960, p 6 [1960]

BAILEY, Harry P See PUTNAM, William Clement 4-60

BAILEY, Jack H See REYNOLDS, C H 1-60

BAILEY, Roy Alden See SMITH, R L 2-60

BAILEY, Sturges Williams See also BROWN, B E 1-60

- 1-60 (and TYLER, S. A ) Clay minerals associated with the Lake Superior iron ores Econ Geology, v 55, no 1, p 150-175 incl tables, Jan -Feb 1960

BAIN, George

- 1-60 The geology of the intrusives and associated contact rock of the Nokesville, Virginia quadrangle [abs.] West Virginia Acad Sci. Proc. 1959, v 31, p 57, Dec 1960

BAIN, George William

- 1-60 Patterns to ores in layered rocks Econ Geology, v. 55, no. 4, p. 695-731 incl geol sketch maps, sections, and table, June-July 1960
- 2-60 Climatic zones of the Paleozoic era Internat Geol Cong , 21st, Copenhagen, 1960, Rept., pt 12, p 84-93 incl climatic maps, 1960.

BAIRD, David McCurdy See also CANADA GEOL SURVEY 22-60

- 1-60. A guide to geology for visitors in Canada's National Parks Ottawa, Dept Northern Affairs and Nat Resources, Natl. Parks Br , Education and Interpretative Sec , 144 p , illus , 1960.
- 2-60. Observations on the nature and origin of the Cow Head breccias of Newfoundland Canada Geol Survey Paper 60-3, 26 p., illus., 1960.
- 3-60 Graham Stewart MacKenzie, 1905-1960 Royal Soc. Canada Minutes Proc , 3d ser , v 54, p 129-131, portrait, 1960
- 4-60. Massive sulphide deposits in Newfoundland, in Symposium on the occurrence of massive sulphide deposits in Canada Canadian Mining and Metall. Bull., v. 53, no 574, p. 77-80 incl. sketch map and table, Feb. 1960, Canadian Inst Mining and Metallurgy Trans , v 63, p 39-42, 1960

- 5-60. Contributed discussion on Origin of the New Brunswick gypsum deposits, by J. Olaf Sund Canadian Mining and Metall Bull , v 53, no 574, p 107-108, Feb 1960 (Original paper published in 1959 )
- BAKER, Arthur, 3d
- 1-60 Chalcopyrite blebs in sphalerite at Johnson Camp, Arizona Econ. Geology, v 55, no 2, p 387-398 incl. geol sections and illus , Mar -Apr, 1960
  - 2-60. (and SCOTT, William C.) Geology at the Pitch mine [Colorado] [abs ] Mining Eng., v 12, no 12, p 1248, Dec. 1960
- BAKER, Bruce L
- 1-60 (and HODGSON, Gordon Wesley) Geochemical significance of nickel complex of pheophytin [abs ] Am Assoc Petroleum Geologists Bull., v 44, no 7, p 1245, July 1960
- BAKER, Donald Roy
- 1-60 (and FERGUSON, William Sidney) Organic geochemistry of Cherokee group in southeastern Kansas and northeastern Oklahoma [abs ] Am Assoc. Petroleum Geologists Bull , v. 44, no 7, p. 1245, July 1960
  - 2-60 (and TRIMBLE, James K ) Cyclic deposition of the Cherokee group in the subsurface of southeastern Kansas and northeastern Oklahoma [abs ] Geol Soc America Bull , v 71, no 12, pt 2, p 1819-1820, Dec 1960
- BAKER, E G
- 1-60. Distribution of hydrocarbons in crude oil [abs ] Geol Soc America Bull , v 71, no. 12, pt 2, p 1820, Dec 1960
- BAKER, Ernest T , Jr.
- 1-60 Geology and ground-water resources of Grayson County, Texas. Texas Board of Water Engineers Bull 6013, 152 p illus. incl geol maps, Sept 1960
- BAKER, F J.
- 1-60 (and SCHAFER, George Miles, and HOLOWAYCHUK, N.) Surficial materials and soils of Paulding County, Ohio Ohio Jour Sci , v. 60, no 6, p 365-377 incl sketch maps, diagram, and table, Nov 1960.
- BAKER, Jack See SITLER, Robert Francis 1-60
- BAKER, James K
- 1-60 Animals of the past [Carlsbad Caverns, New Mexico] Natl Speleol. Soc Guidebook Ser , no 1, p 26-27, 1960.
- BAKER, Richard C See WALLACE, Stewart Raynor 1-60
- BAKKEN, Wallace Eugene See CARLSON, Clarence G 1-60
- BALDWIN, Brewster See also WALTON, M S , Jr 1-60
- 1-60 Ground-water reports for outside reading in the beginning geology course Jour Geol Education, v 8, no. 1, p 9-10, spring 1960
- BALDWIN, Robert W
- 1-60 A decade of development in overvoltage surveying Am Inst Mining, Metall , and Petroleum Engineers Trans 1959, v 214, p 307-314 incl sketch maps, diagrams, and illus , 1960
- BALL, Mahlon Marsh
- 1-60 Gravity and magnetic measurements in eastern Kansas [abs ] Dissert. Abs , v 21, no 5, p 1162, Nov 1960
- BALL, T K
- 1-60. A petrofabric analysis of a fold Am Jour Sci , v 258, no 4, p 274-281 incl diagrams, Apr 1960
- BALLINGER, Dwight G See KRONER, Robert Charles 1-60

## BALLMANN

BALLMANN, Donald Lawrence

- 1-60 Geology of the Knight Peak area, Grant County, New Mexico New Mexico Bur. Mines and Mineral Resources Bull 70, 39 p, illus incl. geol map, 1960

BALSLEY, James Robinson, Jr See also BROMERY, R W 2-60

- 1-60 (and BUDDINGTON, Arthur Francis) Magnetic susceptibility anisotropy and fabric of some Adirondack granites and orthogneisses [New York] Am Jour Sci, v 258-A (Bradley Volume), p 6-20 incl geol. sketch map, diagram, and table, 1960.  
2-60. (and BROMERY, Randolph Wilson, and REMINGTON, Edward Wade, and others) Aeromagnetic map of the Kerby and part of the Grants Pass quadrangles, Josephine and Curry Counties, Oregon U S. Geol Survey Geophys Inv. Map GP-197, scale 1:96,000 (about 1 in. to 1 1/2 mi.), 1960.  
3-60. (and BUDDINGTON, Arthur Francis) Puzzles in the interpretation of paleomagnetism. Indian Geol. Survey Recs, v 86, pt 4, p 553-580 incl table, diagram, Calcutta, India, 1960.

BALTZ, Elmer Harold, Jr See also JOHNSON, R B 1-60

- 1-60. (and READ, Charles Brian) Rocks of Mississippian and probable Devonian age in Sangre de Cristo Mountains, New Mexico Am Assoc. Petroleum Geologists Bull, v 44, no 11, p 1749-1774 incl index maps, chart, sections, and illus, Nov 1960

BANCROFT, Alfred M See also WILLMORE, P. L, 1-60

- 1-60. Gravity anomalies over a buried step [Ontario] Jour Geophys Research, v 65, no 5, p 1630-1631 incl sketch map, diagram, May 1960, further information, no 12, p 4218, Dec 1960.

BANDY, Orville Lee

- 1-60 (and ARNAL, Robert Emile) Concepts of foraminiferal paleoecology Am. Assoc Petroleum Geologists Bull, v 44, no 12, p 1921-1932 incl sketch maps and diagrams, Dec 1960  
2-60. The geologic significance of coiling ratios in the foraminifer Globigerina pachyderma (Ehrenberg) [California] Jour Paleontology, v 34, no 4, p 671-681 incl. index and sketch maps, sections, diagrams, tables, and illus, July 1960  
3-60 General correlation of foraminiferal structure with environment Internat Geol Cong, 21st, Copenhagen, 1960, Rept, pt 22, p 7-19 incl. charts, 1960  
4-60. Foraminiferal ecology of the Gulf of California [abs] Geol Soc America Bull., v 71, no 12, pt. 2, p 2047-2048, Dec 1960  
5-60 Planktonic foraminiferal criteria for paleoclimatic zonation Tohoku Univ. Sci. Repts., 2d ser, Geology, Spec V, no. 4, p 1-8, illus, May 1960

BANKS, Harlan Parker

- 1-60. Notes on Devonian lycopods Senckenbergiana Lethaea (Frankfurt am Main, Germany), Band 41, Nr 1-6, p 59-88, illus, Aug 29, 1960

BANKS, Harvey Oren

- 1-60 The relationship of geologists and engineers planning public works projects [abs.] California Assoc Eng. Geologists, 3d Ann. Mtg, Berkeley, Oct. 14-16, 1960, p 5 [1960]

BANKS, Joseph Edwin

- 1-60 Petroleum in Comanche (Cretaceous) section, Bend area, Florida Am. Assoc Petroleum Geologists Bull., v 44, no. 11, p 1737-1748 incl. sketch map, diagrams, sections, tables, and illus, Nov 1960.

BANNATYNE, Barry B.

- 1-60. Potash deposits, rock salt, and brines in Manitoba Manitoba Dept. Mines and Nat Resources Mines Br. Pub 59-1, 30 p, illus., 1960



BANNER, F T. See also STAINFORTH, R M 1-60

- 1-60. (and BLOW, W H ) Some primary types of species belonging to the superfamily Globigerinaceae Cushman Found Foram Research Contr., v 11, pt 1, p 1-41, illus , Jan 1960, further taxonomic note, pt. 2, p 53, Apr 1960

BANNERMAN, Harold MacColl

- 1-60 Research and minerals resources Canadian Mining Jour , v 81, no 1, p 45-49, Jan 1960

BAPTIST, Oren Cecil

- 1-60 Oil production from frozen reservoir rocks, Umiat, Alaska Am. Inst Mining, Metall , and Petroleum Engineers Trans. 1959, v. 216, p 437-440 incl diagrams and tables, 1960  
2-60. Oil recovery and formation damage in permafrost, Umiat field, Alaska U S. Bur. Mines Rept Inv 5642, 22 p incl sketch map, diagrams, and tables, 1960

BARAGAR, William Robert

- 1-60 Petrology of basaltic rocks in part of the Labrador trough Geol. Soc America Bull , v 71, no. 11, p 1589-1643 incl. sketch maps, diagrams, and tables, also geol map and illus , Nov 1960

BARBER, R C See ISENER, N R 1-60

BARBY, Boardman Gene

- 1-60. Gas reserve study of the Morrow sand, Light Field, Beaver County, Oklahoma Shale Shaker, v 10, no 10, p 9, 11-16 incl index and sketch maps, section, diagram, and tables, June 1960. (Slightly revised from Oil and Gas Jour , v 57, no 38, p 94-98, Sept 14, 1959 )

BARD, Allen J

- 1-60. Controlled potential coulometric determination of tin Anal Chim Acta (Amsterdam), v 22, no 6, p 577-582 incl diagrams and tables, June 1960

BARDEEN, James Maxwell

- 1-60. The thermoluminescence of rocks and minerals, in Science projects handbook, Moore, S , ed Washington, D C , Sci Service, p 91-93, 1960.

BARGHOORN, Elso Sterrenberg See also SCOTT, R A. 1-60, WOLFE, J. A 1-60

- 1-60 Palynological studies of organic sediments and of coated slides, in Bushnell, V C , ed , Scientific studies at Fletcher's ice island, T-3, 1952-1955, V 3 U S Air Force Cambridge Research Center Geophysics Research Directorate Geophys Research Paper 63, p 86-91, tables, Apr 1960

BARGHUSEN, Herbert Richard

- 1-60 Functional-anatomical changes in the Chelonian temporal region Chicago, Illinois, Univ Chicago, 67 p , illus , Mar 1960

BARKER, Daniel S

- 1-60. Alkalic rocks at Litchfield, Maine [abs ] Geol Soc America Bull , v 71, no 12, pt 2, p 1820, Dec 1960

BARKER, Franklin Brett

- 1-60 Determination of radioactive materials in water, in Symposium on technical developments in the handling and utilization of water and industrial waste waters Am Soc Testing Materials Spec. Tech Pub 273, p 22-32 incl table and discussion by A. O Walker, 1960

BARKLEY, Richard A

- 1-60. (and THOMPSON, Thomas Gordon) Determination of chemically combined iodine in sea water by amperometric and catalytic methods Anal Chemistry, v 32, no 2, p. 154-158 incl. diagrams and tables, Feb 1960

## BARKSDALE

BARKSDALE, Henry Compton See REMSON, Irwin 1-60

BARKSDALE, Julian Devreau

- 1-60 Late Mesozoic sequences in the northeastern Cascade Mountains of Washington [abs] Geol Soc America Bull, v 71, no 12, pt 2, p. 2049, Dec 1960

BARNES, Carleton P

- 1-60 Hugh Hammond Bennett, 1881-1960, Assoc Am Geographers Annals, v 50, no. 4, p 506-507 incl. portrait, Dec 1960

BARNES, D

- 1-60. (and FINOS, S.) Blanca--A study of the maximum vertical earth motion of the mesa slope U. S Atomic Energy Comm Rept AECU-4681, 16 p, illus, Feb. 1960

BARNES, David Fitz

- 1-60. (and HOBBIE, John E) Rate of melting at the bottom of floating ice Art. 181 in U. S Geol Survey Prof Paper 400-B, p B392-B394 incl diagrams, 1960.  
2-60. (and ALLEN, Rex V, and BENNETT, Hugh F.) Gravity surveys in interior Alaska [abs] Geol. Soc. America Bull., v 71, no. 12, pt 2, p 2085, Dec. 1960.  
3-60. Seismic velocity measurements at the Ogotoruk Creek Chariot site, northwestern Alaska U. S. Geol. Survey Rept TEI-753, p 62-72 incl index map and diagrams, Jan. 1960  
4-60 An investigation of a perennially frozen lake U. S Air Force Cambridge Research Labs Geophysics Research Directorate Air Force Surveys Geophysics, no 129, 134 p, illus, Dec 1960.

BARNES, Farrell Francis

- 1-60. Coal-bearing strata of the Matanuska coal field, Alaska [abs.] Geol Soc America Bull, v 71, no 12, pt. 2, p 1820-1821, Dec 1960

BARNES, Hubert Lloyd

- 1-60 Sphalerite solubilities in sulfide solutions [abs] Geol. Soc America Bull, v 71, no. 12, pt. 2, p. 1821, Dec 1960

BARNES, Ivan See BACK, William 4-60

BARNES, Robert C See GRUBBS, Donald K 1-60

BARNES, Virgil Everett

- 1-60. Significance of inhomogeneity in tektites Internat. Geol Cong, 21st, Copenhagen, 1960, Rept, pt. 13, p 328-338 incl tables and illus., 1960.

BARNES, William Howard. See KELSEY, C. H. 1-60

BARNETT, C C See MOORE, John Marshall 1-60

BARNETT, Lincoln. See LIFE MAGAZINE 1-60

BARNETT, Paul Redmond. See BASTRON, Harry 1-60, HANSHAW, Penelope M 1-60

BARNETT, Ray Hosmer. See VAUGHN, William Wendall 2-60

BAROSH, Patrick James

- 1-60. Beaver Lake Mountains, Beaver County, Utah--Their geology and ore deposits Utah Geol. and Mineralog. Survey Bull 68, 89 p, illus incl. geol map, Mar 1960.

BARR, Frank Theodore See LANGENHEIM, Ralph Louis, Jr 7-60

- BARR, James Allen, Jr  
1-60 Phosphate rock, in Am Inst. Mining, Metall., and Petroleum Engineers, Industrial minerals and rocks, p 649-668 incl maps and tables, 1960
- BARR, K G See ROBSON, Geoffrey Robert 2-60
- BARR, Kenneth William  
1-60 Geological map, Toco district, Trinidad, W I Directorate Overseas Surveys, scale about 1 in to 4,000 ft., 1960  
2-60. The occurrence of Choffatella decipiens in Trinidad Micropaleontology, v 6, no 3, p 323, July 1960.
- BARRABÉ, Louis Camille  
1-60 Bassins sédimentaires et provinces pétrolifères Internat Geol Cong , 21st, Copenhagen, 1960, Rept , pt 11, p 113-123 incl sketch map, 1960
- BARRETT, Edward  
1-60 Mississippian or Pennsylvanian--That is the question [Oklahoma] Shale Shaker, v 11, no. 2, p 14-17, Oct. 1960.
- BARRY, G S  
1-60 Geology of the Western Oxford Lake-Carghill Island area, Oxford Lake Mining Division, 53L/13 Manitoba Dept Mines and Nat Resources Mines Br Pub 59-2, 37 p , illus. incl geol. maps, 1960
- BARRY, Gerald See FISHER, James 1-60
- BARRY, R. G.  
1-60 The application of synoptic studies in palaeoclimatology--a case study for Labrador-Ungava Geog Annaler, v 42, no 1, p 36-44, illus., Stockholm, 1960.
- BARSHAD, Isaac. See also TABIKH, A A 1-60  
1-60 Significance of the presence of exchangeable magnesium ions in acidified clays Science, v 131, no 3405, p 988-990 incl table, Apr 1, 1960  
2-60. X-ray analysis of soil colloids by a modified salted paste method, in Swineford, Ada, ed , Clays and clay minerals Natl. Conf Clays and Clay Minerals, 7th, Washington, D C , Oct 1958, Proc , p 350-364 incl tables, 1960 (Issued as Internat Earth Science Ser Mon 5 of Pergamon Press, New York )  
3-60 Thermodynamics of water absorption and description on montmorillonite, in Swineford, Ada, ed , Clays and clay minerals, V 8 Natl Conf Clays and Clay Minerals, 8th, Norman, Okla., Oct 1959, Proc , p 84-101 incl diagrams, 1960 (Issued as Internat Earth Science Ser. Mon 9 of Pergamon Press, New York )
- BARTH, Thomas Fredrik Weiby See LARSEN, Ole 1-60
- BARTHOLOMÉ, P  
1-60. Genesis of the Gore Mountain garnet deposit, New York Econ Geology, v 55, no 2, p 255-277 incl. mineral index map, diagrams, tables, and illus , Mar -Apr 1960
- BARTLETT, Z W See LEE, Clarence O. 1-60
- BARTON, Paul Booth, Jr See also BETHKE, P. M. 1-60, SKINNER, B J. 1-60  
1-60. (and BETHKE, Philip Martin) Thermodynamic properties of some synthetic zinc and copper minerals Am. Jour. Sci., v 258-A (Bradley Volume), p 21-34 incl. diagrams and table, 1960.  
2-60 (and TOULMIN, Priestley, 3d, and SIMS, Paul Kibler) Role of chemical potential of sulfur in controlling mineral assemblages in sulfide deposits [abs ] Geol Soc America Bull., v 71, no 12, pt 2, p 1821-1822, Dec 1960, Econ Geology, v 55, no 6, p 1336, Sept -Oct 1960

## BARTON

BARTON, Robert H

- 1-60. (and BROSCOE, Andy Joe) The geomorphic expression of selected concealed structures in western Canada [abs ] Canadian Oil and Gas Industries, v 13, no 4, p 107, Apr 1960

BASCOM, Willard Newell

- 1-60 Experimental drilling in deep water [abs ] Geol Soc America Bull , v. 71, no. 12, pt. 2, p 2089, Dec. 1960  
2-60. Beaches Sci Am , v 203, no 2, p 80-92, 94 incl diagrams and illus , Aug. 1960  
3-60 Operation Mohole Mines Mag , v. 50, no 2, p. 15-19 incl sections, Feb. 1960

BASKIN, Yehuda

- 1-60. (and HARADA, Yoshiro, and HANDWERK, Joseph Henry) Crystalline thorium borate [abs ] Am. Ceramic Soc. Bull , v 39, no 4, p 231, Apr 1960.

BASS, Manuel Nathan See also TILTON, G R. 2-60

- 1-60 Grenville boundary in Ohio Jour Geology, v 68, no. 6, p 673-677 incl. index map and tables, Nov 1960.  
2-60. (and DAVIS, Gordon Leslie, and TILTON, George Robert, and WETHERILL, George West) Occurrence of 1000-million-year-old minerals in eastern United States and Canada [abs ] Geol Soc America Bull , v 71, no 12, pt 2, p 1822, Dec 1960.

BASSETT, Allen Mordorf. See BASSETT, W A. 3-60

BASSETT, Henry Gordon

- 1-60 Devonian stratigraphy, central Mackenzie River region, NWT [abs ] Oilweek, v. 10, no 49, p. 23, 25, Jan 23, 1960

BASSETT, William A.

- 1-60 Role of hydroxyl orientation in mica alteration Geol. Soc America Bull., v. 71, no 4, p 449-455 incl diagrams and table, illus , Apr. 1960.  
2-60 (and KERR, Paul Francis, and SCHAEFFER, Oliver Adam, and STOENNER, Raymond William) K Ar ages, Marysville, Utah--Tertiary volcanic rocks [abs.] Geol. Soc America Bull., v 71, no 12, pt 2, p 1822-1823, Dec 1960.  
3-60. (and BASSETT, Allen Mordorf) Hexagonal stalactite from Rushmore Cave, South Dakota [abs.] Geol Soc America Bull , v 71, no 12, pt 2, p 2089-2090, Dec 1960

BASTRON, Harry. See also JACKSON, E. D. 2-60

- 1-60. (and BARNETT, Paul Redmond, and MURATA, Kiyuma Jack) Method for the quantitative spectrochemical analysis of rocks, minerals, ores, and other materials by a powder d-c arc technique U.S Geol Survey Bull. 1084-G, p 165-182, tables, 1960

BASURTO GARCÍA, Jesús

- 1-60 (and MURIEDAS PAVÓN, Alfonso) Velocidades sísmicas en el area de Tampico Asoc Mexicana Geofísicos Explor Bol , v 1, no 4, p. 315-328, illus , Oct -Dec 1960.

BATEMAN, John Danvers

- 1-60. Saskatchewan focal point of search for rare helium Oilweek, v. 11, no 9, p 34-36, Apr 16, 1960.

BATES, Beth H See BATES, John D. 1-60

BATES, John D

- 1-60 (and BATES, Beth H ) Evaluation of heavy mineral separations using artificial samples Jour Sed Petrology, v. 30, no 1, p. 148-153 incl tables, Mar. 1960

- 2-60 (and BIEMESDERFER, George K ) Stratigraphy and paleontology of an occurrence of diatomaceous earth in Nebraska. Jour. Paleontology, v 34, no. 4, p 759-761 incl index map, July 1960.
- BATES, Junior Lambert See BRENDEN, Byron, B 1-60
- BATES, Robert Glenn See JOHNSON, Robert William, Jr 1-60
- BATES, Robert Latimer  
1-60 Geology of the industrial rocks and minerals New York, N. Y , Harper and Brothers, 441 p , illus incl. geol. maps, 1960.
- BATES, Thomas Fulcher See also HINCKLEY, D N 1-60, 2-60, SILVERMAN, E N 1-60  
1-60 (and O'NEIL, Robert L ) An investigation of the mineralogy, petrography, and paleobotany of uranium-bearing lignites--Analyses of lignite samples U. S Atomic Energy Comm Rept. NYO-7949, 50 p incl tables, Mar 1, 1960.  
2-60 Rock weathering and clay formation in Hawaii Mineral Industries, v. 20, no 8, p. 1, 4-6 incl illus , May 1960
- BATH, Gordon D  
1-60 Magnetization of volcanic rocks in the Lake Superior geosyncline Art 93 in U S. Geol Survey Prof. Paper 400-B, p B212-B214 incl. geol sketch map and diagrams, 1960
- BÄTH, Markus See BEN-MENACHEM, Ari 1-60
- BATTEN, Roger Lyman. See also KNIGHT, J B 2-60, 3-60  
1-60 The need to classify Smithsonian Inst. Ann Rept 1959, p 509-522, illus , 1960.
- BAUER, Herman L., Jr  
1-60 (and COOPER, James J., and BREITRICK, Richard A ) Porphyry copper deposits in the Robinson Mining District, White Pine County, Nevada, in Geology of east central Nevada Intermountain Assoc Petroleum Geologists, 11th Ann. Field Conf , 1960 Guidebook, p 220-228 incl sketch map, sections, and illus , also geol sketch map and diagram, 1960
- BAUER, R F.  
1-60 (and FIELD, A J ) Drilling from floating vessels in the open sea [abs ] Geol Soc America Bull , v 71, no 12, pt 2, p 2090, Dec. 1960.
- BAULEKE, Maynard Paul See also PLUMMER, N V 1-60  
1-60 Mineral wool from volcanic ash? Rock Products, v 63, no 6, p 110, 112 incl tables and illus., June 1960
- BAUM, John L. See HURLBUT, Cornelius Searle, Jr. 1-60
- BAUSCHMANN, Walter W  
1-60. (and RASE, Daniel Edward) Nonequilibrium phase relations--Data in the system  $MgO-Al_2O_3-SiO_2$  [abs.] Am. Ceramic Soc. Bull , v 39, no. 4, p 247, Apr 1960
- BAXTER, James Watson  
1-60. Calcsiphaera from the Salem (Mississippian) limestone in southwestern Illinois Jour Paleontology, v 34, no. 6, p 1153-1157, illus , Nov 1960.  
2-60 Salem limestone in southwestern Illinois Illinois State Geol. Survey Div Circ 284, 32 p incl geol sketch map, cross section, tables, and illus , 1960
- BAXTER, Robert Wilson  
1-60 A first report of coal balls from the Pennsylvanian of New Brunswick, Canada Canadian Jour. Botany, v 38, no. 4, p 697-699, July 1960

## BAYLEY

- 2-60. Sporocarpon and allied genera from the American Pennsylvanian Phytomorphology (Delhi, India), v 10, no 1, p 19-25 incl illus , Mar. 1960.

## BAYLEY, Richard William

- 1-60. Precambrian taconite deposits near Atlantic City, Fremont County, Wyoming, in Overthrust belt of southwestern Wyoming and adjacent areas Wyoming Geol Assoc., 15th Ann. Field Conf , 1960, Guidebook, p 222-225 incl geol. map, 1960

## BAYLOR GEOLOGICAL SOCIETY

- 1-60 Cretaceous stratigraphy of the Grand and Black Prairies, east-central Texas, [5th] field conference, April 1960, guidebook Waco, Tex., 136 p. incl index and sketch maps, sections, and diagrams, also route maps and sections, 1960. Includes individual papers which are cited separately.

## BAYLY, M. B

- 1-60 Errors in point-counter analysis Am. Mineralogist, v 45, nos 3-4, p 447-449, Mar -Apr. 1960

## BAYNE, Charles K.

- 1-60 Geology and ground-water resources of Harper County, Kansas Kansas State Geol Survey Bull 143, 184 p , illus incl. geol map, Mar 1960

## BAYROCK, Luboslaw Antin. See also GRAVENOR, C P 1-60

- 1-60. Glacial geology of the Alliance-Galahad-Hardisty-Brownfield area, Alberta, Canada [abs.] Dissert Abs., v 21, no. 3, p 591, Sept 1960  
2-60 Surficial geology, App. of Exploratory soil survey of Alberta map sheets 84-J, 84-K, and 84-L, by Lindsay, J. D , and others Research Council Alberta Prelim. Soil Survey Rept 60-1, p 43-49, illus [1960].

## BÉ, Allan Wie Hwa

- 1-60 Some observations on Arctic planktonic Foraminifera Cushman Found. Forum. Research Contr., v 11, pt. 2, p 64-68, illus., Apr 1960  
2-60 Ecology of Recent planktonic foraminifera--Pt. 2, Bathymetric and seasonal distributions in the Sargasso Sea off Nermuda Micropaleontology, v 6, no. 4, p. 373-392, illus., Oct. 1960.

## BEAIRD, Harold Clay

- 1-60 E. V. B. field, Nolan County, Texas, in Abilene Geol Soc , Geological contributions 1960, p 36-42, illus., 1960.

## BEALES, Francis William

- 1-60 Limestone peels Alberta Soc Petroleum Geologists Jour., v 8, no 4, p 132-135 incl illus , Apr 1960

## BEALL, Arthur

- 1-60. Sedimentary history of central Texas, in Cretaceous stratigraphy of the Grand and Black Prairies, east-central Texas Baylor Geol. Soc., Field Conf., Apr 1960, Guidebook, p. 62-64 incl. diagram, 1960  
2-60. The Taylor formation, in Cretaceous stratigraphy of the Grand and Black Prairies, east-central Texas Baylor Geol Soc., Field Conf , Apr. 1960, Guidebook, p. 118-124, 1960.

## BEALL, G. H.

- 1-60 Preliminary report on Laflamme Lake area, New Quebec Quebec Dept. Mines Geol. Surveys Br. Prelim. Rept 435, 10 p., geol map, 1960, also French ed.

## BEALL, Robert MacDonald. See RASMUSSEN, William Charles 1-60

## BEALS, Carlyle Smith

- 1-60. (and INNES, Morris James Sage, and ROTTENBERG, J. A.) The search for fossil meteorite craters, [Pts.] 1 and 2 Current Sci. (Bangalore, India), v. 29, no. 6, p. 205-218 incl. sketch maps, diagrams, and illus., June 1960, no. 7, p. 249-262 incl sketch maps, diagrams, tables, and illus., July 1960.

BEALS, Harold Oliver

- 1-60. A study of the anatomy and degradation in mid-western Pleistocene woods and some of their implications [abs.] Dissert. Abs., v. 21, no. 6, p. 1342, Dec. 1960

BEAR, Firman Edward

- 1-60. High Hammond Bennett, 1881-1960 Soil Sci., v. 90, no. 4, p. 213, portrait, Oct. 1960  
2-60. John Wesley Shive, 1887-1960 Soil Sci., v. 90, no. 6, p. 325, portrait, Dec. 1960.

BEAR, Jacob

- 1-60 (and TODD, David Keith) The transition zone between fresh and salt waters in coastal aquifers California Univ. Water Resources Center Contr., no. 29, 156 p., illus., Sept. 1, 1960.

BEATTY, Matthew Edwin

- 1-60. A brief story of the geology of Yosemite Valley [California] Yosemite Nature Notes, v. 22, no. 4, 9 p. incl. diagrams, table, and illus., reprinted spec. issue, [1960?], originally published 1943. (Condensed from U. S. Geol. Survey Prof. Paper 160, 1930, by F. E. Matthes.)

BEAUMONT, Edward Campbell. See N. MEX. GEOL. SOC. 1-60

BEAVERS, Alvin Herman

- 1-60. Use of X-ray spectrographic analysis for the study of soil genesis Internat. Cong. Soil Sci., 7th, Madison, Wisconsin, 1960, Trans., v. 2, comm. 2, p. 1-9 incl. diagrams, table, French and German summaries, and discussion [1960].

BECK, Alan Edward

- 1-60. An expanding Earth with loss of gravitational potential energy Nature (London), v. 185, no. 4714, p. 677-678, Mar. 5, 1960

BECK, B. See SEIFERT, Hans 1-60

BECK, Carl Wellington. See also ELBERTY, W. T. 1-60

- 1-60. (and ELBERTY, William T.) Effects of clay minerals on ceramic properties--Pt. 1, Procedure [abs.] Am. Ceramic Soc. Bull., v. 39, no. 4, p. 239, Apr. 1960.  
2-60. (and BRUNTON, George Delbert) X-ray and infrared data on hectorite-guanidines and montmorillonite-guanidines, in Swineford, Ada, ed., Clays and clay minerals, V. 8 Natl. Conf. Clays and Clay Minerals, 8th, Norman, Okla., Oct. 1959, Proc., p. 22-38 incl. diagrams and tables, 1960. (Issued as Internat. Earth Science Ser. Mon. 9 of Pergamon Press, New York.)

BECK, Charles Beverley

- 1-60. Connection between Archaeopteris and Callixylon. Science, v. 131, no. 3412, p. 1524-1525, May 20, 1960.  
2-60. Studies of New Albany shale plants--[Pt.] 1, Stenokoleos simplex comb. nov. [Indiana] Am. Jour. Botany, v. 47, no. 2, p. 115-124 incl. diagrams and illus., Feb. 1960.

BECK, Frederick M.

- 1-60. Geology of the Sphinx Mountain area, Madison and Gallatin Counties, Montana, in West Yellowstone--Earthquake area Billings Geol. Soc., 11th Ann. Field Conf., Sept. 1960, [Guidebook] p. 129-134 incl. section, table, and illus., 1960.

BECKER, Henry Floyd

- 1-60. (and CHRISTENSEN, David E.) Florida reference atlas Tallahassee, Fla., Dixie Publishers, 84 p. of maps, 1960.

## BECKER

BECKER, Herman Frederick

- 1-60. The Tertiary flora of the Ruby-Gravelly Basin in southwestern Montana, in West Yellowstone--Earthquake area Billings Geol Soc , 11th Ann. Field Conf , Sept. 1960, [Guidebook] p 244-252 incl. index map, section, and illus , 1960.
- 2-60 The Tertiary Mormon Creek flora from the Upper Ruby River Basin in southwestern Montana Palaeontographica (Stuttgart, Germany), Band 107, Abt B, Lief 4-6, p. 83-126, illus , Aug 1960
- 3-60 Additions to the Tertiary Ruby Paper Shale Flora of southwestern Montana Torrey Bot Club Bull., v. 87, no 6, p. 386-396, illus., Nov - Dec 1960.

BECKER, Joseph H See CLARK, David Leigh 2-60

BECKMANN, Walter Charles See also DRAKE, C L., 1-60, HEEZEN, B C , 3-60

- 1-60 (and DRAKE, Charles Lum and SUTTON, George H ) SDR survey for proposed Chesapeake Bay Crossing [Virginia] Am Soc. Civil Engineers Proc , v. 86, paper 2553, Jour Surveying and Mapping Div , no. SU 2, pt. 1, p 19-31, illus , July 1960.

BECRAFT, George Earle

- 1-60. Preliminary geologic map of the northern half of the Jefferson City quadrangle, Jefferson and Lewis and Clark Counties, Montana U S Geol Survey Mineral Inv. Field Studies Map MF-171, scale 1 24,000 (1 in to 2,000 ft.), 1960
- 2-60. Preliminary geologic map of the southern half of the Jefferson City quadrangle, Jefferson County, Montana U S Geol Survey Mineral Inv Field Studies Map MF-172, scale 1 24,000 (1 in to 2,000 ft.), 1960

BEEBE, Byron Warren

- 1-60. Crisis in the earth sciences--legal or self-regulation? Am Assoc. Petroleum Geologists Rocky Mtn Sec. Geol. Record 1960, p 3-10 incl. diagrams and illus [1960]
- 2-60. Natural gases of North America, in Natural gas in the Southwest Southwestern Federation Geol Socs Trans , v. 1, p 7-28 incl. sketch map, diagrams, and tables, 1960.

BEERBOWER, James Richard

- 1-60. Search for the past--an introduction to paleontology Englewood Cliffs, N J., Prentice-Hall, Inc , 562 p , illus., 1960
- 2-60 (and McDOWELL, Fred W.) The Centerfield biostrome--An approach to a paleoecologic problem Pennsylvania Acad Sci. Proc , v 34, p 84-91, illus., 1960

BEISER, Arthur. See KRAUSKOPF, Konrad 1-60

BEITMAN, Raymond E

- 1-60 Paul Wagner Netterstrom (1914-1960) Am Assoc Petroleum Geologists Bull , v. 44, no 5, p. 642-643 incl. portrait, May 1960

BÉLAND, Jacques Robert

- 1-60. Preliminary report on the Rimouski-Matapedia area, electoral districts of Rimouski, Matapedia, Bonaventure and Matane Quebec Dept Mines Geol Surveys Br. Prelim Rept. 430, 18 p , geol map, 1960, also French ed

BÉLAND, René

- 1-60. Prolongement de la faille Rawdon-Sainte-Mélanie [abs ] Assoc. Canadienne-Française Av Sci Annales, v 26, p 110, 1960
- 2-60 Rawdon area, Montcalm and Joliette electoral districts Quebec Dept Mines Geol Surveys Br Geol. Rept 92, 35 p., geol map and illus., 1960, also French ed.



**BELCHER, Donald Jenks**

- 1-60. (and MOLLARD, John Douglas, and PRYOR, William Thurman) Photo interpretation in engineering, Chap 6 in Am. Soc. Photogrammetry, Manual of photographic interpretation Washington, D. C., p 403-442 incl. tables and illus., 1960

**BELKNAP, William, Jr.**

- 1-60. Man on the Moon in Idaho Natl. Geog. Mag., v. 118, no. 4, p. 504-525, illus., Oct. 1960.

**BELL, Alfred Hannam**

- 1-60. How can duplication of names of major structural features be avoided? Am. Assoc Petroleum Geologists Bull., v 44, no. 4, p. 500-501, Apr. 1960

**BELL, Henry, 3d See also OVERSTREET, W C 2-60, 4-60, 5-60, 6-60**

- 1-60. A synthesis of geologic work in the Concord area, North Carolina Art. 84 in U. S. Geol. Survey Prof. Paper 400-B, p B189-B191 incl. geol. map, 1960
- 2-60 (and OVERSTREET, William Courtney) Geochemical and heavy-mineral reconnaissance of the Concord quadrangle, Cabarrus County, North Carolina U. S. Geol. Survey Mineral Inv. Field Studies Map MF-234, scale 1 24,000 (1 in. to 2,000 ft), with text, 1960.

**BELL, Kenneth Grenville**

- 1-60. Uranium and other trace elements in petroleum and rock asphalts U. S. Geol. Survey Prof. Paper 356-B, p. 45-65 incl diagram, tables, 1960.
- 2-60 Deposition of uranium in salt-pan basins U S Geol Survey Prof. Paper 354-G, p. 161-169 incl. tables, 1960.

**BELL, Walter Andrew**

- 1-60. Mississippian Horton group of type Windsor-Horton district, Nova Scotia Canada Geol. Survey Mem 314, 112 p., illus., with French abs., 1960.

**BELOUSSOV, Vladimir Vladimirovitch**

- 1-60. Development of the earth and tectogenesis Jour. Geophys. Research, v 65, no 12, p. 4127-4146, Dec 1960.
- 2-60. Tectonophysical investigations Geol. Soc. America Bull, v 71, no 8, p 1255-1269 incl diagrams, illus, Aug 1960.

**BELT, Charles Banks, Jr**

- 1-60 Intrusion and ore deposition in New Mexico Econ. Geology, v 55, no 6, p 1244-1271 incl geol. sketch, structure, and mineral maps, and tables, Sept.-Oct 1960.
- 2-60 Intrusions and ore depositions in three New Mexico mining districts [abs ] Dissert. Abs., v 20, no. 9, p 3691, Mar 1960.

**BELYEA, Helen Reynolds**

- 1-60 Distribution of some reefs and banks of the Upper Devonian woodbend and Fairholme groups in Alberta and eastern British Columbia Canada Geol Survey Paper 59-15, 7 p , geol map, 1960
- 2-60. The story of the mountains in Banff National Park Canada Geol. Survey [Misc. Rept 1], 42 p incl section and illus., 1960.

**BENDA, William K.**

- 1-60 (and ERD, Richard Clarkson, and SMITH, Ward Conwell) Core logs from five test holes near Kramer, California U. S. Geol Survey Bull. 1045-F, p. 319-393, illus. incl geol. map, 1960.

**BENDER, James A**

- 1-60. Deformation of excavations in snow [Greenland] [abs ] Jour. Geophys Research, v. 65, no. 8, p. 2474-2475, Aug 1960.

**BENDER, Martin S See GUILDAY, John E 1-60**

## BENGOCHEA

BENGOCHEA, Adolfo J. See ZOPPIS BRACCI, Luigi 3-60

BENIOFF, Victor Hugo

- 1-60 Observations of the Lamb-Pekeris ground-response pattern in the Yellowstone earthquake of August 18, 1959 [abs.] Geol Soc America Bull, v 71, no 12, pt 2, p 2049, Dec 1960
- 2-60. Long-period seismographs Seismol Soc America Bull, v 50, no 1, p 1-13 incl diagrams, Jan 1960

BEN-MENACHEM, Ari

- 1-60. (and BATH, Markus) A method for determination of epicenters of near earthquakes Geofisica Pura e Appl (Milan, Italy), v 46, [no.] 2, p 37-46 incl. sketch map, diagram, and tables, May-Aug 1960

BENNER, R I.

- 1-60 New silver areas in Cobalt [Ontario] [abs.] Canadian Mining Jour., v. 81, no 4, p. 104-105, Apr 1960.

BENNETT, Frank Orville

- 1-60 Western Kansas shapes into major oil and gas province Oil and Gas Jour, v 58, no 35, p. 124-127 incl structure contour and index maps, Aug 29, 1960
- 2-60 Eubank may be next Kansas oil and gas-producing giant Oil and Gas Jour, v. 58, no 51, p 134-138 incl structure contour map and section, Dec 19, 1960
- 3-60. Mississippian production within the Kansas portion of the Hugoton Gas Field with special emphasis on the Pleasant Prairie and Eubank Pools [abs.] Tulsa Geol Soc. Digest, v 28, p 85, 1960

BENNETT, Hugh F. See BARNES, D F. 2-60

BENNETT, P. T.

- 1-60. (and KNIGHT, D. K ) Inspection of lower slide, Gros Ventre River [Wyoming], App. 7 in U S Army Corps of Engineers, Madison River, Montana, report on flood emergency, Madison River slide--V 2, Appendixes Omaha, Nebraska, U. S Army Corps of Engineers, p. VII-1-VII-4, section, Mar [Sept] 1960

BENNETT, Robert Raymond. See Da COSTA, José Alves 2-60

BENNETT, Walter P.

- 1-60 (and ANDERSON, Arthur L., and SMITH, Basil L ) Cavity definition, radiation and temperature distributions resulting from the Logan event California, Univ, Livermore, Lawrence Radiation Lab. Rept UCRL-6240, 52 p incl. diagrams, tables, and illus, Dec 1960

BENNETT, William Alfred Glenn

- 1-60 (and THORSEN, Gerald W ) Mode of deposition of ludwigite, kotoite, and cubanite in dunite on Jumbo Mountain, Snohomish County, Washington [abs.] Geol Soc America Bull, v 71, no 12, pt 2, p 2049-2050, Dec. 1960

BENNINGTON, Kenneth O. See RAMBERG, Hans 2-60

BENOÎT, Fernand Wilbrod

- 1-60. Preliminary report on Chomedey-Paquet area, Roberval electoral district Quebec Dept Mines Geol. Surveys Br. Prelim Rept 426, 7 p, geol map, 1960, also French ed.

BENSON, David

- 1-60 Application of the sphalerite geothermometer to some northern New Brunswick sulfide deposits Econ Geology, v. 55, no 4, p 818-826 incl. diagrams, June-July 1960

BENSON, Edmund Thurston

1-60. A geologist looks at pipelines [abs ] Tulsa Geol. Soc Digest, v. 28, p. 95, 1960

BENSON, Lester B , Jr. See COPELAND, Lawrence L 1-60

BENSON, Virgil M. See KASSNER, James Lyle 1-60

BÉRARD, Jean

1-60 Preliminary report on Toco-Témiscamie area, Mistassini Territory Quebec Dept. Mines Geol Surveys Br. Prelim Rept 411, 10 p , geol. map, 1960, also French ed

BERCUTT, Henry

1-60. Isopachous and paleogeologic studies in eastern Oklahoma north of Choctaw fault [abs.] Am. Assoc Petroleum Geologists Bull , v. 44, no 1, p 125, Jan. 1960.

BERDAN, Jean Milton See also SOHN, I G. 1-60

1-60 Revision of the ostracode family Beecherellidae and redescription of Ulrich's types of Beecherella Jour Paleontology, v 34, no 3, p 467-478, illus , May 1960

BEREZHZNOI, A S

1-60 Silicon and its binary systems New York, New York, Consultants Bur., 275 p incl. diagrams and tables, translated from Russian, 1960

BERG, Henry Clay See also LATHRAM, E H 2-60

1-60. Three areas of possible mineral resource potential in southeastern Alaska Art 19 in U S. Geol Survey Prof Paper 400-B, p B38-B39 incl. index map, 1960

2-60 (and MacKEVETT, Edward Malcolm, Jr ) Structural control of quick-silver ore at the Red Devil mine, Alaska [abs ] Alaskan Sci. Conf , 10th, Juneau, Aug 25-28, 1959, Proc , p. 106, Dec 1960

BERG, John Robert

1-60. Minimum standards for accreditation of geological curricula [abs.], Geol. Soc America Bull , v 71, no. 12, pt 2, p 1824, Dec 1960.

BERG, Joseph Wilbur, Jr. See also SCHWIND, J. J 1-60

1-60 (and COOK, Kenneth Lorimer, and NARANS, Harry D , Jr ) Seismic studies of crustal structure in the eastern Basin and Range Province, Pt 2 [abs ] Geol Soc America Bull , v 71, no. 12, pt 2, p 2050, Dec. 1960

2-60. (and others) Seismic investigation of crustal structure in the eastern part of the Basin and Range province Seismol Soc. America Bull , v. 50, no 4, p. 511-535 incl. index maps, diagrams, and tables, Oct. 1960

3-60 Earthquakes near Nephi, Utah, on November 28, 1958, and December 1, 1958 Utah Acad Sci , Arts, and Letters Proc. 1959-60, v. 37, p. 77-79, illus., 1960.

BERG, Robert Raymond

1-60. (and WASSON, Edward Bassett) Structure of the Wind River Mountains, Wyoming [abs ] Geol Soc America Bull , v. 71, no 12, pt 2, p. 1824, Dec. 1960

2-60. Cambrian and Ordovician history of Colorado, in Rocky Mtn Assoc. Geologists, Guide to the geology of Colorado Denver, p 10-17 incl isopach maps, section, and correlation chart, 1960

BERGE, Charles William

1-60 Heavy minerals study of the intrusive bodies of the central Wasatch Range, Utah Brigham Young Univ. Research Studies Geology Ser , v 7, no 6, 31 p , illus incl. geol map, June 1960.

## BERGE

BERGE, John Stark

- 1-60. Stratigraphy of the Ferguson Mountain area, Elko County, Nevada  
Brigham Young Univ. Research Studies Geology Ser , v 7, no 5, 63 p.,  
illus incl geol. map, Apr. 1960

BERGENDAHL, Maximilian Hilmar. See KOSCHMANN, Albert Herbert 1-60

BERGENHAYN, J R. M.

- 1-60. Cambrian and Ordovician loricates from North America Jour Pale-  
ontology, v. 34, no 1, p 168-178 incl illus , Jan 1960

BERGER, Charles See MUCKLEROY, James Arnold 1-60

BERGERON, Robert See also GASTIL, R G., 3-60

- 1-60. Les serpentinites de la zone de Cape Smith-Wakeham Bay, Nouveau-  
Québec [abs.] Assoc. Canadienne-Française Av.Sci Annales, v 26, p 111,  
1960.

BERGEY, William R

- 1-60 The use of modern scientific techniques for mining exploration in  
large areas of the Caribbean [abs ] Caribbean Geol Conf , 2d, Mayagüez,  
Puerto Rico, Jan 4-9, 1959, Trans., p 137, with discussion, 1960

BERGMANN, Herbert J.

- 1-60 Horizontal loop equipment in ground survey Canadian Mining Jour.,  
v 81, no 12, p 57-61 incl diagrams and illus , Dec 1960

BERGSTEN, John M See LYTLE, William Stuckley 2-60

BERGQUIST, Harlan Richard

- 1-60 Occurrence of Foraminifera and conodonts in upper Paleozoic and  
Triassic rocks, northern Alaska Jour. Paleontology, v 34, no. 3, p 596-  
601 incl. index map, May 1960  
2-60. Petrographic study of the crystalline rocks from the Opelika quad-  
rangle, Alabama Alabama Geol. Survey Bull 69, 44 p , illus incl. geol  
sketch map, 1960

\*BERKHOLZ, Mary Frances

- 1-60. Minerals of Bayard area, New Mexico Mineralogist, v 28, nos. 9-10,  
p 154, 156, 158 incl. sketch map, Sept.-Oct 1960

BERKOWITZ, Norbert

- 1-60. Geochemical aspects of coal formation and structure [abs ] Geol Soc.  
America Bull , v 71, no 12, pt 2, p 1824-1825, Dec 1960.

BERL, Walter George

- 1-60 (editor) Physical methods in chemical analysis, V. 1 2d revised ed ,  
New York, N Y., Academic Press, 686 p. incl diagrams, tables, and  
illus., 1960

BERMAN, Robert Morris See also OWENS, J P. 1-60

- 1-60 Simulation of metamictization in nuclear reactors [abs.] Geol Soc  
America Bull , v. 71, no. 12, pt 2, p 1825, Dec 1960.

BERMUDEZ y HERNÁNDEZ, Pedro Joaquín

- 1-60 Contribución al estudio de las Globigerinidea de la región Caribe-  
Antillana (Paleoceno-Reciente), in Cong Geol Venezolano, 3d, Caracas,  
1959, Mem , Tomo 3 Venezuela Dirección Geología (Caracas) Bol.  
Geología Pub Espec. 3, p 1.119-1 393, illus , 1960.

BERNARD, George G.

- 1-60 (and HOLBROOK, O. C.) The effect of some chemical agents on the  
permeability of cores containing clays Producers Monthly, v. 24, no 5,  
p. 18-21 incl diagrams, Mar. 1960

BERNSTEIN, Fabian

- 1-60. Distribution of water and electrolyte between homoionic clays and saturating NaCl solutions, in Swineford, Ada, ed, Clays and clay minerals, V 8 Natl Conf. Clays and Clay Minerals, 8th, Norman, Okla, Oct. 1959, Proc., p 122-149 incl. diagrams and tables, 1960. (Issued as Internat Earth Science Ser. Mon. 9 of Pergamon Press, New York.)

BERRANGÉ, Jevan Pierre

- 1-60. Preliminary report on Antoine area, Roberval electoral district Quebec Dept. Mines Geol. Surveys Br. Prelim. Rept. 429, 12 p., geol. map, 1960, also French ed.

BERRY, Delmar Wood

- 1-60. Geology and ground-water resources of the Rawlins area, Carbon County, Wyoming U.S. Geol. Survey Water-Supply Paper 1458, 74 p., illus., incl geol. map, 1960.

BERRY, Frederick Almet Fulghum

- 1-60 Geologic field evidence suggesting membrane properties of shale [abs.] Am Assoc. Petroleum Geologists Bull, v. 44, no. 6, p 953-954, June 1960.
- 2-60 Geologic field evidence suggesting membrane properties of shales [abs.]. Am. Assoc. Petroleum Geologists Rocky Mtn Sec Geol Record 1960, p 165 [1960]

BERRY, James E

- 1-60. Acoustic velocity in porous media Am Inst Mining, Metall., and Petroleum Engineers Trans. 1959, v 216, p 262-270 incl. diagrams, 1960.

BERRY, William Benjamin Newell

- 1-60. Early Ludlow graptolites from the Ashland area, Maine Jour. Paleontology, v. 34, no. 6, p. 1158-1163 incl index map and illus, Nov 1960.
- 2-60. Correlation of Ordovician graptolite-bearing sequences Internat. Geol. Cong, 21st, Copenhagen, 1960, Rept, pt. 7, p 97-108 incl chart, 1960.
- 3-60. Graptolite faunas of the Marathon region, west Texas Texas Univ. Pub 6005, 179 p., illus., Mar 1, 1960.

BERRYHILL, Henry Lee, Jr.

- 1-60. (and BRIGGS, Reginald Peter, and GLOVER, Lynn, 3d) Stratigraphy, sedimentation, and structure of Late Cretaceous rocks in eastern Puerto Rico--Preliminary report Am. Assoc. Petroleum Geologists Bull., v 44, no 2, p. 137-155 incl geol. sketch maps, index map, sections, and chart, Feb 1960.
- 2-60 (and GLOVER, Lynn, 3d) Geology of the Cayey quadrangle, Puerto Rico U. S. Geol. Survey Misc. Geol. Inv. Map I-319, scale 1 20,000 (about 1 in. to 1,700 ft), with sections and text, 1960.
- 3-60. Geology of the Central Aguirre quadrangle, Puerto Rico U. S. Geol. Survey Misc. Geol. Inv. Map I-318, scale 1 20,000 (about 1 in. to 1,700 ft), with text, 1960.

BERTHELSEN, Asger

- 1-60. (and BRIDGWATER, David) On the field occurrence and petrography of some basic dykes of supposed Pre-Cambrian age from the southern Sukkertoppen district, western Greenland Medd. om Grønland, bind 123, nr. 3, 43 p., illus, 1960, reprinted as Grønlands Geol. Undersøgelse Bull. 24, 1960, Copenhagen Univ. Mus. Minéralogie et Géologie Commun. Géol 98, 1960
- 2-60. Structural studies in the pre-Cambrian of western Greenland--[Pt] 2, Geology of Tovqussap nunâ Medd. om Grønland, bind 123, nr. 1, 223 p., illus. incl. geol maps, 1960, reprinted as Grønlands Geol Undersøgelse Bull 25, 1960, Copenhagen Univ. Mus. Minéralogie et Géologie Commun. Géol 102, 1960.

BERTHOLF, William E., 2d

- 1-60 Magnetite taconite rock in Precambrian formations in Rio Arriba County, New Mexico New Mexico Bur. Mines and Mineral Resources Circ. 54, 24 p., illus., 1960

## BERTHELSEN

### BERTHELSEN, Asger

- 1-60 An example of a structural approach to the migmatite problem [Greenland] Internat Geol. Cong , 21st, Copenhagen, 1960, Rept , pt 14, p. 149-157 incl. sketch maps and table, 1960, reprinted as Grønlands Geol Under-søgelse Misc Paper 28, 1960, Copenhagen Univ. Mus Minéralogie et Géologie Commun. Géol. 107, 1960.

### BETHKE, Philip Martin See also BARTON, P B., Jr. 1-60

- 1-60, (and BARTON, Paul Booth, Jr., and BODINE, Marc Williams, Jr.) Time-space relationships of the ores at Creede, Colorado [abs.] Geol Soc America Bull., v. 71, no. 12, pt. 2, p. 1825-1826, Dec. 1960, Econ Geology, v 55, no. 6, p. 1336-1337, Sept.-Oct. 1960

### BEVELANDER, Gerrit

- 1-60. (and Nakahara, Hiroshi) Development of the skeleton of the sand dollar, in Sognaes, R. F , ed, Calcification of biological systems--A symposium, Washington, D. C., Dec. 29, 1958 Am Assoc Adv. Sci. Pub 64, p 41-56 incl illus., 1960

### BEVERIDGE, Alexander James

- 1-60 Heavy minerals in lower Tertiary formations in the Santa Cruz Mountains, California Jour Sed. Petrology, v 30, no 4, p 513-537 incl. geol sketch map, sections, diagrams, table, and illus , Dec 1960

### BEVERIDGE, Thomas Robinson

- 1-60. Rock and mineral chemical raw materials in the Midwest [abs.] Mining Eng , v. 12, no 12, p. 1242-1243, Dec. 1960.

### BHARADWAJ, Dinesh Chandra

- 1-60 Sporological evidence on the boundaries of the stratigraphical subdivisions in the upper Pennsylvanian strata of Europe and North America Cong. Av. Études de Stratigraphie et de Géologie du Carbonifère, 4th, Sept. 15-20, 1958, Heerlen, Compte rendu, tome 1, p. 33-39 incl. diagram and tables, Maastricht, Netherlands, 1960  
2-60. (and VENKATACHALA, B. S ) On *Protosalvinia arnoldii* n. sp. from Upper Devonian of Kentucky, U.S A Senckenbergiana Lethaea (Frankfurt am Main, Germany), Band 41, Nr. 1-6, p 27-35, illus , Aug 29, 1960

### BHATTACHARYA, Nityananda

- 1-60. Weathering products of tills in Indiana [abs ] Dissert Abs., v 21, no. 3, p. 591-592, Sept 1960

### BIAYS, Pierre

- 1-60 Quelques travaux et documents concernant le Bouclier canadien Norois (Poitiers, France), 7<sup>e</sup> année, no 25, p. 13-31 incl illus , Jan - Mar 1960

### BICHAN, W. James

- 1-60 Commercial chrysotile deposits, Baie Verte, Notre Dame Bay district, Newfoundland--Preliminary notes Econ. Geology, v. 55, no 2, p 399-401 incl. geol cross section, Mar -Apr 1960.  
2-60. The origins of the massive sulphides [Pt. 1] Canadian Mining Jour., v. 81, no 3, p 73-78 incl. diagram and illus , Mar 1960.  
3-60. The origins of the massive sulphides, Pt 2 Canadian Mining Jour., v. 81, no. 5, p 69-72, May 1960.

### BICK, Kenneth Fletcher

- 1-60. Geology of the Lexington quadrangle, Virginia Virginia Div Mineral Resources Rept Inv 1, 40 p., geol map, 1960  
2-60. Geology of the Lexington quadrangle, Virginia [abs.] Virginia Jour. Sci., v. 11, no. 4, p 211-212, Sept. 1960

### BIDEAUX, Richard August

- 1-60. Oriented overgrowths of tennantite and colusite on enargite Am Mineralogist, v. 45, nos 11-12, p. 1282-1285 incl diagrams and illus , Nov.-Dec. 1960

## BILLINGS GEOLOGICAL SOCIETY

- 2-60 (and WILLIAMS, Sidney Arthur, and THOMSEN, Richard Wyatt)  
Some new occurrences of minerals of Arizona Arizona Geol. Soc. Digest,  
v 3, p. 53-56, Mar 1960.
- BIEBER, Charles Leonard**  
1-60 Concepts of testing and grading in an elementary geology class [abs.]  
Geol Soc America Bull , v 71, no. 12, pt. 2, p 1826, Dec. 1960.  
2-60. Pebble counts in the glacial tills of Parke and Putnam Counties, Indi-  
ana Indiana Acad Sci. Proc. 1959, v. 69, p 210-213, illus., 1960.
- BIEBERMAN, Robert Arthur**  
1-60. Exploration for oil and gas in the Chama Basin, in Rio Chama  
Country New Mexico Geol. Soc., 11th Field Conf , Oct. 1960, Guidebook,  
p 110-112, table, 1960
- BIELER, Barrie H** See also WRIGHT, H D 2-60  
1-60 (and WRIGHT, Harold D.) Primary mineralization of uranium-bearing  
"siliceous reef" veins in the Boulder batholith, Montana--Pt. 2, The  
veins Econ Geology, v. 55, no. 2, p 363-382 incl diagrams, table, and  
illus., Mar -Apr. 1960
- BIEMESDERFER, George K.** See BATES, John D. 2-60
- BIEN, George Sung-Nien.** See also HUBBS, C. L. 1-60  
1-60. (and RAKESTRAW, N. W , and SUESS, Hans Edward) Radiocarbon  
concentration in Pacific Ocean water Tellus (Stockholm), v 12, no 4,  
p. 436-443 incl. diagrams and tables, Nov. 1960.
- BIERSCHENK, William H** See HONSTEAD, J F 1-60, LANG, Solomon Max,  
1-60, RANDALL, Allan D 1-60
- BIGGS, Donald Lee.** See THOMAS, Leo Almor 1-60
- BIGGS, Maurice Earl**  
1-60. Statistical study of near-surface seismic-velocity determinations in  
Indiana [abs ] Geol Soc America Bull , v. 71, no 12, pt. 2, p 2011, Dec.  
1960  
2-60. (and BLAKELY, Robert Fraser, and RUDMAN, Albert J.) Seismic  
velocities and synthetic seismogram computed from a continuous velocity  
log of a test well to the basement complex in Lawrence County, Indiana  
Indiana Geol. Survey Rept Prog. 21, 15 p , illus., Nov 1960.
- BIGGS, Paul**  
1-60 (and ESPACH, Ralph Homeward) Petroleum and natural gas fields  
in Wyoming U. S. Bur. Mines Bull 582, 538 p , illus , 1960.
- BIGGS, W. P.**  
1-60. Modern well completion series--Part 4, Fundamentals of electric  
logging Petroleum Engineer for Management, v. 32, no 2, p B-26-B-34  
incl diagrams and illus., Feb 1960.
- BIKE, Peter Brentley**  
1-60. Mississippi is still a good place to look for oil Oil and Gas Jour.,  
v. 58, no. 9, p. 127 incl. index map, Feb. 29, 1960.
- BILLINGS, Marland Pratt**  
1-60. Diastrophism and mountain building Geol. Soc. America Bull , v. 71,  
no. 4, p 363-397 incl. sections, diagrams, and tables, Apr. 1960.
- BILLINGS GEOLOGICAL SOCIETY**  
1-60. (CAMPAU, Donald Edmund, and ANEGARD, Harry Williams, and  
EGBERT, Robert L., editors) West Yellowstone--Earthquake area [Mon-  
tana], 11th annual field conference, September 7-10, 1960 [Guidebook]  
Billings, Montana, Petroleum Inf., Inc., 313 p. incl. geol. and other sketch  
maps, diagrams, sections, tables, road logs, and illus , also geol. maps and  
sections, geomorphic map, and correlation chart, 1960. Includes individual  
papers which are cited separately

## BINGHAM

BINGHAM, James W.

- 1-60. Basic geologic and ground water data for Clay County, Minnesota  
Minnesota Dept. Conserv., Div. Waters Bull 8, 138 p, illus., Mar. 1960

BIRCH, Albert Francis See also VERMA, Raj Kumar 1-60

- 1-60. (and LeCOMTE, Paul) Temperature-pressure plane for albite composition Am. Jour. Sci., v 258, no. 3, p 209-217 incl diagrams and tables, Mar 1960.
- 2-60. The velocity of compressional waves in rocks to 10 kilobars--Pt 1  
Jour. Geophys. Research, v 65, no. 4, p. 1083-1102 incl. diagrams and tables, Apr. 1960
- 3-60. Reginald Aldworth Daly (1871-1957) Am. Philos. Soc. Year Book 1959,  
p 106-116, 1960.
- 4-60 Reginald Aldworth Daly, May 19, 1871-September 19, 1957 Natl.  
Acad. Sci. Biog. Mem., v 34, p. 31-64, portrait, 1960
- 5-60 Internal constitution of the Earth, physics of the interior Am. Geo-  
phys. Union Trans., v. 41, no. 2, p 173-176, June 1960.

BIRD, John B.

- 1-60 The scenery of central and southern Arctic Canada Canadian Geog-  
rapher, no 15, p 1-11, illus., 1960

BIRMAN, Joseph Harold. See TERZAGHI, Karl 1-60

BISHOP, Ernest W.

- 1-60. The geochemistry of phosphorus, in Late Cenozoic stratigraphy and  
sedimentation of central Florida Southeastern Geol. Soc., 9th Field Trip,  
May 1960, Guidebook, p 38-49, 1960.
- 2-60 Structure and diadochic substitutions in the apatite group, in Late  
Cenozoic stratigraphy and sedimentation of central Florida Southeastern  
Geol. Soc., 9th Field Trip, May 1960, Guidebook, p. 64-74 incl diagram,  
1960.

BISHOP, Margaret Stearns

- 1-60 Subsurface mapping New York, N Y., John Wiley and Sons, 198 p,  
illus., 1960

BISQUE, Ramon Edward. See also BLOOM, Duane N. 1-60

- 1-60 Teaching geochemistry [abs.] Geol. Soc. America Bull., v. 71, no 12,  
pt. 2, p 1827, Dec. 1960.
- 2-60. What is a geochemist? GeoTimes, v. 4, no 7, p 30, 43-44, Apr. 1960
- 3-60. (and LEMISH, John) Silicification of carbonate aggregates in con-  
crete. Natl Acad Sci.--Natl. Research Council Highway Research Board  
Bull 239, p 41-55, illus., 1960

BISSELL, Harold Joseph. See also ADAMS, J. E 1-60

- 1-60 Eastern Great Basin Permo-Pennsylvanian strata--Preliminary state-  
ment Am. Assoc. Petroleum Geologists Bull., v. 44, no 8, p 1424-1435  
incl sketch maps, chart, section and fence diagrams, Aug 1960
- 2-60. Cordilleran fusulinid zonations [abs.] Geol. Soc. America Bull., v 71,  
no 12, pt 2, p 2050-2051, Dec. 1960

BISSON, John M

- 1-60. Modern limestones Sheffield Univ Geol. Soc. Jour. [Sheffield, Eng-  
land], v 3, no. 5, p 119-125, illus., Jan. 1960.

BISWAS, A. B. See IRANI, K 1-60

BJERRUM, L. See TERZAGHI, Karl 2-60

BLACK, Craig C.

- 1-60. A second record of the fossil rodent Palustrimus wood [Wyoming]  
Breviora, no 131, 3 p., Dec. 30, 1960.



BLACK, Peter E.

- 1-60. (and others) Watershed analysis of the North Fork of the Cache la Poudre River, Larimer County, Colorado, and Albany County, Wyoming Fort Collins, Colorado State Univ , Coop. Watershed Management Unit, 121 p incl. diagrams, tables, and illus , geol. and other sketch maps, fall 1959

BLACK, Robert Foster

- 1-60. "Driftless area" of Wisconsin was glaciated [abs.] Geol. Soc. America Bull , v 71, no 12, pt 2, p 1827, Dec. 1960.

BLACKADAR, Robert Gordon See also CANADA GEOL SURVEY, 28-60

- 1-60. The age of the metamorphic complex of northernmost Ellesmere Island [Northwest Territories] Arctic, v. 13, no. 1, p. 51-52, Mar. 1960.
- 2-60. The Precambrian of the Arctic Archipelago, Pt. 1 of Precambrian geology of Arctic Canada, a summary account Canada Geol. Survey Paper 60-8, p. 1-11, illus , 1960.
- 3-60. Field method and logistics--Arctic Canada [abs ] Canadian Mining and Metall. Bull , v 53, no. 575, p. 200, Mar. 1960.
- 4-60 Precambrian geology of the Arctic islands [Northwest Territories] Canadian Mining Jour , v 81, no 4, p. 108-110, Apr 1960.

BLACKSTONE, Donald LeRoy, Jr.

- 1-60 (and MONTAGNE, John M. de la) Age and regional relationships of the Independence Mountain fault, North Park Basin, Colorado [abs.] Geol. Soc. America Bull , v 71, no 12, pt 2, p 2031, Dec. 1960

BLADE, Lawrence Vernon. See MILTON, Charles, 4-60

BLAIK, Maurice See BROWN, Maurice Vertner, 1-60

BLAIR, Arden Francis

- 1-60. Richey field, Montana [abs.] Am. Assoc. Petroleum Geologists Bull., v 44, no. 6, p 954, June 1960.
- 2-60 Richey Field, Montana Am. Assoc. Petroleum Geologists Rocky Mtn. Sec Geol. Record 1960, p. 71-78 incl maps, sections and illus [1960].

BLAIS, Roger A. See also GASTIL, R G 3-60, STUBBINS, J. B 1-60

- 1-60. (and STUBBINS, John B.) Role of mine geology in exploitation of the iron deposits of the Knob Lake Range, Canada [abs.] Mining Eng , v 12, no p. 1248, Dec. 1960.
- 2-60. La flore crétacée du gisement ferrifère de Redmond [Labrador] et ses implications [abs.] Assoc Canadienne-Française Av Sci. Annales, v. 26, p 109, 1960
- 3-60 Le massif d' anorthosite de Vital-Labrador et ses facies marginaux [abs ] Assoc. Canadienne-Française Av. Sci. Annales, v. 26, p 108-109, 1960.
- 4-60 Wacouno-Waco area, Saguenay electoral district Quebec Dept. Mines Geol Surveys Br Geol. Rept. 96, 58 p , geol map, 1960.

BLAKELY, Merle F

- 1-60. How geologists feel about registration Oil and Gas Jour , v. 58, no 1, p. 52-54 incl illus , Jan. 4, 1960.

BLAKELY, Robert Fraser See also BIGGS, M. E 2-60

- 1-60. Use of velocity log data to confirm seismic velocities and reflections to the basement complex in Indiana [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt 2, p. 2012, Dec 1960.

BLANCHARD, Raoul

- 1-60 Le Canada Français, Province de Québec--étude géographique Paris, Libr Arthème Fayard, 316 p incl. maps and illus., 1960.

## BLAND

BLAND, Francis X.

1-60. (and GARDNER, William E ) Raleigh field, Smith County, Mississippi--Example of Lower Cretaceous oil field [abs.] Am Assoc Petroleum Geologists Bull., v. 44, no 9, p. 1600, Sept 1960.

2-60 (and GARDNER, William E ) Raleigh Field, Smith County, Mississippi, a Lower Cretaceous oil field Gulf Coast Assoc. Geol. Soc's Trans., v 10, p 278-284 incl. structure maps and section, 1960.

BLANK, Horace Richard, Jr.

1-60. Geology of the Bull Valley district, Washington County, Utah [abs.] Dissert. Abs , v. 20, no 7, p 2755, Jan. 1960

BLANKENSHIP, Joel T.

1-60. Areal geology of the region just south of Saltville, Virginia [abs.] Virginia Jour. Sci., v. 11, no 4, p. 215, Sept 1960.

BLANPIED, Bernerd William

1-60. Trends in exploratory methods based on statistics from study of basis of location of new-field wildcat wells [Texas-Louisiana-New Mexico] Am. Assoc Petroleum Geologists Bull , v. 44, no 7, p 987-999 incl. diagram and tables, July 1960

BLÁSQUEZ LÓPEZ, Luis

1-60. Hidrogeología, [Chap ] 4 in La Isla Socorro, Archipelago de Las Revillagigedo México Univ Nac Inst. Geofísica Mon 2, p 67-84, illus , 1960.

BLATT, Harvey

1-60 (and CHRISTIE, John McDougall) Undulatory extinction in quartz of igneous and metamorphic rocks, and its significance in provenance studies of sedimentary rocks [abs.] Geol Soc. America Bull , v. 71, no 12, pt. 2, p 1828, Dec 1960.

BLAU, Ludwig Wilhelm

1-60. [Esme Eugene Rosaire, 1897-1959] Geophysics, v. 25, no. 6, p 1280-1285 incl. portrait, Dec. 1960

BLEIMEISTER, William C

1-60. Rock salt mining and economics in the north-central area [Michigan-Ohio-Ontario] [abs.] Mining Eng., v. 12, no. 12, p 1243, Dec. 1960.

BLOCH, Marie Halun

1-60. Mountains on the move New York, N Y., Coward-McCann, Inc., 96 p , illus , 1960.

BLOCK, Douglas A.

1-60. Sand and gravel resources of Kane County, Illinois Illinois State Geol. Survey Div Circ 299, 11 p. incl. index map and tables, resources map, 1960.

BLOCK, Stanley See PERLOFF, Alvin, 1-60

BLOOM, Arthur Leroy

1-60 Pleistocene crustal and sea-level movements in Maine [abs.] Geol. Soc. America Bull., v. 71, no 12, pt 2, p. 1828, Dec 1960

2-60. Late Pleistocene changes of sea level in southwestern Maine Augusta, Maine Geol. Survey, 143 p., maps, Oct. 1, 1960.

BLOOM, Duane N.

1-60. (and KLUGMAN, M. A , and BISQUE, Ramon Edward) Calcium/magnesium ratios as an exploration tool [abs.] Geol Soc. America Bull., v. 71, no 12, pt 2, p 1829, Dec. 1960

BLOOM, Harold. See also HAWKES, H E., Jr. 2-60

1-60. Geochemical prospecting Mines Mag., v. 50, no 1, p. 12-16 incl. diagrams and tables, Jan. 1960.

BLOOMER, Richard Rodier

- 1-60. Hamlin and North Hamlin fields, Jones County, Texas, in Abilene Geol. Soc., Geological contributions 1960, p 61-67, illus., 1960.

BLOSS, Fred Donald. See also GIBBS, G. V. 1-60

- 1-60 (and STEINER, Robert L.) Biogeochemical prospecting for manganese in northeast Tennessee Geol. Soc. America Bull., v. 71, no. 7, p. 1053-1065 incl. sketch maps and tables, July 1960.

BLOUGH, Glenn Orlando

- 1-60 Discovering dinosaurs New York, N. Y., Whittlesey House, 48 p., illus., 1960.

BLOUNT, C. W. See DICKSON, F. W. 2-60

BLOW, W. H. See BANNER, F. T. 1-60, STAINFORTH, Robert Masterman, 1-60

BLOXAM, T. W.

- 1-60 Jadeite-rocks and glaucophane-schists from Angel Island, San Francisco Bay, California Am. Jour. Sci., v. 258, no. 8, p. 555-573 incl. index and geol. sketch maps, tables, and illus., Oct. 1960.

BLUM, Seymour L.

- 1-60. (and MAGUIRE, Edward A., Jr.) Differential thermal analysis of some yttrium and lanthanum compounds Am. Ceramic Soc. Bull., v. 39, no. 6, p. 310-312 incl. diagrams, June 1960

BLUNDUN, George John

- 1-60. Mississippian in Alberta plains and the reflection seismograph [abs.] Am. Assoc. Petroleum Geologists Bull., v. 44, no. 6, p. 954, June 1960.  
2-60 The Mississippian in the Alberta plains and the reflection seismograph [abs.] Am. Assoc. Petroleum Geologists Rocky Mtn. Sec. Geol. Record 1960, p. 161 [1960].

BLYTHE, Jack Gordon

- 1-60. Atoka formation in northeastern Oklahoma, in North-eastern Oklahoma Kansas Geol. Soc., 25th Field Conf., Sept. 1960, Guidebook, p. 72-81, illus., 1960.

BOARDMAN, Richard Stanton

- 1-60. Trepostomatous Bryozoa of the Hamilton group of New York State U. S. Geol. Survey Prof. Paper 340, 87 p., illus., 1960.  
2-60. A revision of the Ordovician bryozoan genera Batostoma, Anapragma, and Amplexopora Smithsonian Misc. Colln., v. 140, no. 5, 28 p., illus., Dec 15, 1960.

BOCK, Walter J. See OLSON, Everett Claire 2-60

BOCK, Wilhelm

- 1-60. New American Triassic tree ferns Pennsylvania Acad. Sci. Proc., v. 34, p. 92-95, illus., 1960.

BODE, Hans

- 1-60 Die floristischen Verhältnisse an der Westfal/Stefan-Grenze im europäischen und US-amerikanischen Karbon Cong. Av. Etudes de Stratigraphie et de Géologie du Carbonifère 4th, Sept 15-20, 1958, Heerlen, Compte rendu, tome 1, p. 49-58 incl. diagram and charts, Maastricht, Netherlands, 1960.

BODINE, Marc Williams, Jr. See BETHKE, Philip Martin 1-60

BOEGLY, W. J. See PARKER, Frank L. 1-60, 2-60

## BOESE

BOESE, Robert W.

- 1-60. (and COHN, Byron E ) Color centers induced by gamma radiation of crystal quartz [abs ] Colorado-Wyoming Acad Sci Jour , v 5, no 1, p. 24-25, Dec. 1960.

BOETTCHER, Jerome W See INTERMOUNTAIN ASSOC PETROLEUM GEOLOGISTS 1-60

BOGART, Dean Butler See also ARNOW, Theodore, 1-60

- 1-60. (and ARNOW, Ted, and CROOKS, James Walker) Water problems of Puerto Rico and a program of water-resources investigations Puerto Rico Water Resources Authority Water-Resources Bull 1, [83] p , illus., with English and Spanish texts, 1960.

BOKMAN, John Willard

- 1-60. Oil gravities in the Western Canada basin Alberta Soc Petroleum Geologists Jour., v 8, no. 3, p 81-87 incl. gravity map, diagrams, and table, Mar 1960

BOLD, Willem Aaldert van den

- 1-60 Eocene and Oligocene ostracoda of Trinidad Micropaleontology, v. 6, no 2, p. 145-196, illus , Apr. 1960

BOLEY, Charles Chilton

- 1-60. Federal Bureau of Mines research on Western coals and lignites [abs ] Geol Soc America Bull., v 71, no. 12, pt 2, p 1829-1830, Dec 1960.

BOLINGER, Jane. See SILVER, Leon T. 2-60

BOLLI, Hans Martin

- 1-60 Planktonic Foraminifera as index fossils in Trinidad, West Indies and their value for worldwide stratigraphic correlation Eclogae Geol. Helvetiae 1959, v 52, no 2, p 627-637 incl. table, Basel, Switzerland, Jan 29, 1960

BOLLIN, Edgar M.

- 1-60 (and DUNNE, James Arthur, and KERR, Paul Francis) Differential thermal study of pyrosynthesis Science, v 131, no. 3401, p. 661-662 incl. diagrams, Mar 4, 1960

BOLT, Bruce A

- 1-60. The revision of earthquake epicentres, focal depths and origin-times using a high-speed computer Royal Astron Soc. Geophys. Jour. (London), v. 3, no 4, p 433-440 incl. diagram and table, Dec 1960

BOLTON, Thomas Elwood See also COPELAND, M J 1-60

- 1-60. Catalogue of type invertebrate fossils of the Geological Survey of Canada, V 1 Ottawa, Canada Geol Survey, 215 p., 1960.  
2-60. (and LEE, Patrick K.) Post-glacial marine overlap of Anticosti Island, Quebec Geol Assoc. Canada Proc., v 12, p 67-78, illus., Dec 1960.

BOLTZ, David Ferdinand. See MELLON, Melvin Guy 1-60

BOLYARD, Dudley Wood

- 1-60. Permo-Pennsylvanian stratigraphy in the Sangre de Cristo Mountains, Colorado, in Rocky Mtn Assoc Geologists, Guide to the geology of Colorado Denver, p. 121-126 incl index and sketch maps, section, and illus , 1960.

BONER, F. C. See HACKETT, Orwell Milton 1-60

BONET, Federico See BUTTERLIN, Jacques A. 1-60, 2-60, 6-60

BONEY, Buster Harvey

- 1-60. Taylor County Regular (Cedar Gap) Flippen sandstone field, Taylor County, Texas, in *Abilene Geol. Soc., Geological contributions* 1960, p. 124-128, illus., 1960.

BONHAM, Lawrence Cook See SABINS, Floyd F., Jr 1-60

BONILLA, Manuel George

- 1-60. A sample of California Coast Range landslides Art 66 in *U. S. Geol Survey Prof. Paper* 400-B, p. B149, 1960.

BONINI, William Emory See also MEYER, R. P. 1-60, WOOLLARD, G. P. 1-60

- 1-60 (and WOOLLARD, George Prior) Subsurface geology of North Carolina-South Carolina Coastal Plain from seismic data *Am. Assoc Petroleum Geologists Bull.*, v. 44, no. 3, p. 298-315 incl. geol sketch and structure contour maps, diagrams, sections, and tables, Mar 1960.

BONNER, Francis Truesdale

- 1-60. (and SCHAEFFER, Oliver Adam) Chlorine-36 content of saline Great Basin waters [abs.] *Jour. Geophys Research*, v. 65, no. 8, p. 2476, Aug 1960.

BOOHER, M. B. See HARDT, William Frederick, 1-60

BOON, J. A.

- 1-60 (and McNULTY, Charles Lee, Jr.) Problems of a new geological department, Arlington State College, Arlington, Texas [abs.] *Geol. Soc America Bull.*, v. 71, no. 12, pt 2, p. 1830, Dec 1960.

BOOS, Charles Maynard. See BOOS, Margaret Fuller, 1-60

BOOS, Margaret Fuller

- 1-60. (and BOOS, Charles Maynard) Fracturing in the Precambrian and adjacent Fountain beds along the margin of Denver basin, west of Denver, Colorado [abs.] *Geol Soc. America Bull.*, v. 71, no. 12, pt. 2, p. 1830-1831, Dec 1960.  
2-60 Stratigraphic sections of the Idaho Springs west of Denver, Colorado [abs.] *Geol Soc. America Bull.*, v. 71, no. 12, pt 2, p. 2031, Dec. 1960

BOOZER, George D. See SOMERTON, Wilbur H 1-60

BOPP OESTE, Monika G. See SEARS, Paul Bigelow, 1-60

BORDEN, Charles E.

- 1-60. D<sub>JR1</sub> 3, an early site in the Fraser Canyon, British Columbia Canada *Natl Mus. Bull* 162, p. 101-118 incl diagrams and illus., 1960

BORG, Iris Y.

- 1-60. (and others) Experimental deformation of St Peter sand--A study of cataclastic flow, Chap 6 in Griggs, D. T., ed., *Rock deformation--A symposium* *Geol Soc America Mem* 79, p. 133-191, illus., 1960.

BORISKE, Paul E

- 1-60. Lac Blanc field, Vermilion Parish, Louisiana [abs.] *Am. Assoc Petroleum Geologists Bull.*, v. 44, no. 9, p. 1600, Sept 1960  
2-60. Lac Blanc Field, Vermilion Parish, Louisiana *Gulf Coast Assoc Geol. Socs Trans.*, v. 10, p. 93-105 incl index, structure, and isopach maps, and sections, 1960.

BORKOVICH, George L.

- 1-60 West Salt Creek area of Cymric oil field *California Oil Fields--Summ Operations* July-Dec. 1959, v. 45, no. 2, p. 34-37, illus., 1960.

## BORN

BORN, William Theodore

- 1-60. A review of geophysical instrumentation *Geophysics*, v. 25, no. 1, p 77-91, Feb 1960.

BORNHAUSER, Max

- 1-60. Depositional and structural history of Northwest Hartburg field, Newton County, Texas *Am Assoc. Petroleum Geologists Bull*, v. 44, no. 4, p 458-470 incl index and structure contour maps, and sections, Apr. 1960

BORSCHER, Ken

- 1-60. Varieties Iowa geodes *Mineralogist*, v 27, nos 12-[v. 28, no ] 1, p 251-252, Dec. 1959-Jan [1960]

BORST, Lyle Benjamin

- 1-60. Time of planet formation *Science*, v. 131, no 3399, p. 566, Feb 19, 1960

BORST, Roger L

- 1-60 Rocks and minerals of New York State *New York State Mus and Sci. Service Educ Leaflet Ser.*, no 10, [15] p incl geol. sketch maps, diagrams, and tables, Oct. 1960.

BOSSART, Paul N , Jr. See PATTERSON, Samuel Oliver 1-60

BOSTOCK, J M. See CANADA GEOL SURVEY 18-60

BOSWELL, Ernest H. See PARKS, William Scott 1-60

BOSWELL, Percy George Hamnall, d 1960.

- 1-60 The term graywacke *Jour. Sed. Petrology*, v 30, no. 1, p 154-157, Mar 1960, discussion by F. J Pettijohn, no. 4, p 627, Dec. 1960

BOTINELLY, Theodore. See FISCHER, Richard Philip 2-60, GIBBONS, Anthony Benjamin 1-60, WILMARTH, Verl Richard 1-60

BOUCOT, Arthur James

- 1-60. A new Lower Devonian stropheodontid brachiopod [Nova Scotia] *Jour. Paleontology*, v 34, no. 3, p. 483-485, illus., May 1960.  
2-60. Implications of Rhenish Lower Devonian brachiopods from Nova Scotia *Internat. Geol Cong*, 21st, Copenhagen, 1960, Rept, pt 12, p 129-137 incl index maps, 1960.  
3-60. (and ARNDT, Robert) Fossils of the Littleton formation (Lower Devonian) of New Hampshire *U. S Geol Survey Prof Paper* 334-B, p 41-51, illus incl geol. map, 1960.  
4-60 (and others) A late Silurian fauna from the Sutherland River formation, Devon Island, Canadian Arctic Archipelago [Northwest Territories] *Canada Geol. Survey Bull* 65, 51 p incl diagrams, table and illus., also index map and French abs., 1960. Contains 6 papers which are not cited separately.

BOUNSALL, E. J.

- 1-60. (and McBRYDE, William A E.) Determination of trace amounts of silver in galena ores *Canadian Jour. Chemistry*, v. 38, no 9, p 1488-1494 incl tables, Sept. 1960

BOVARNICK, Bennett. See LINIAL, Andrew V 1-60

BOWEN, B M

- 1-60. (and EDGERTON, J. H., and MOHRBACHER, J A., and CALLAHAN, Joseph Thomas) Geological factors affecting the ground disposal of liquid radioactive wastes into crystalline rocks at the Georgia Nuclear Laboratory site *Internat. Geol Cong*, 21st, Copenhagen, 1960, Rept., pt 20, p 32-48 incl sketch map, diagrams, and illus., 1960

BOWEN, Ira Sprague

- 1-60. John A[ugust] Anderson [1876-1959], astronomer and physicist Science, v 131, no. 3401, p 649-650 incl. portrait, Mar 4, 1960

BOWEN, Max W

- 1-60. Cripple Creek-Victor, Colo District Mines Mag., v 50, no. 10, p 33-38 incl sketch map and illus , Oct. 1960.

BOWEN, N L. See CHAYES, Felix 1-60

BOWER, Margaret E See also GREGORY, A F 3-60, 4-60

- 1-60. Geophysical interpretation of the magnetic anomaly at Marmora, Ontario Canada Geol. Survey Paper 59-4, 11 p , illus , 1960  
2-60. Aeromagnetic surveys across Hudson Bay from Churchill [Manitoba] to Coral Harbour and Churchill to Great Whale River [Quebec] Canada Geol. Survey Paper 59-13, 32 p., illus , 1960.

BOWIN, Carl O.

- 1-60. Geology of central Dominican Republic [abs.] Geol Soc America Bull., v. 71, no. 12, pt 2, p. 1831, Dec. 1960.  
2-60 Geology of central Dominican Republic [Princeton, N J., Princeton Univ (?) ] 212 p., illus incl geol maps 1960.

BOWLES, C Gilbert

- 1-60 (and BRADDOCK, W A.) Solution breccias in the upper part of the Minnelusa sandstone, South Dakota and Wyoming [abs.] Geol. Soc America Bull , v. 71, no 12, pt 2, p. 2032, Dec 1960

BOWLES, Oliver, 1877-1958

- 1-60 Dimension stone, in Am. Inst. Mining, Metall., and Petroleum Engineers, Industrial minerals and rocks, p 321-337 incl diagrams and tables, 1960  
2-60. Slate, in Am Inst. Mining, Metall , and Petroleum Engineers, Industrial minerals and rocks, p. 791-798 incl. map and table, 1960.

BOWMAN, Frank O., Jr.

- 1-60. Manganese deposits of the Little Grand district in southeastern Utah, in Geology of the Paradox Basin fold and fault belt Four Corners Geol. Soc., 3d Field Conf., 1960, [Guidebook] p. 118-120, illus , 1960

BOWMAN, Joseph Richmond See also BRUUN, Per 1-60

- 1-60 Natural by-passing of sand at coastal inlets Am. Soc Civil Engineers Proc., v. 86, paper 2540, Jour. Waterways and Harbors Div , no WW 2, p 131-132, June 1960. (Discussion of paper by P Bruun and F Gerritsen, ibid., Dec. 1959 )

BOWN, M. G

- 1-60. (and GAY, Peter) An X-ray study of exsolution phenomena in the Skaergaard pyroxenes [Greenland] Mineralog. Mag. (London), v. 32, no. 248, p 379-388, illus , London, Mar 1960.

BOWSER, E W

- 1-60 Genesis and characteristics of solonchic soils [abs.] Royal Soc Canada Minutes Proc., 3d ser., v. 54, App C, p. 41, 1960.

BOYD, Donald Ray See MURRAY, Grover Elmer 1-60, 3-60

BOYD, Donald Wilkin

- 1-60 Fossil plants (?) in the Triassic Chugwater formation [abs ] Geol. Soc America Bull., v. 71, no. 12, pt 2, p 2032, Dec. 1960

BOYD, Francis R.

- 1-60. (and ENGLAND, Joseph Loveday) Apparatus for phase-equilibrium measurements at pressures up to 50 kilobars and temperatures up to 1750°C Jour. Geophys Research, v 65, no 2, p 741-748 incl diagrams and tables, Feb. 1960.

## BOYD

- 2-60 (and ENGLAND, Joseph Loveday) The quartz-coesite transition Jour Geophys Research, v. 65, no 2, p. 749-756 incl diagrams, tables, and illus, Feb. 1960
- 3-60 (and ENGLAND, Joseph Loveday) Stability relations of pyrope and aluminous enstatite [abs] Geol Soc. America Bull, v 71, no. 12, pt. 2, p 1831-1832, Dec. 1960
- 4-60. (and ENGLAND, Joseph Loveday) Minerals of the mantle Carnegie Inst. Washington Year Book 1959-60, p. 47-52, illus., 1960.

## BOYER, Robert Ernst

- 1-60 (and MUEHLBERGER, William Rudolf) Separation versus slip Am. Assoc Petroleum Geologists Bull., v 44, no. 12, p 1938-1939, Dec 1960

## BOYLE, Robert William. See also WANLESS, R. K. 1-60

- 1-60 Some geochemical considerations on lead-isotope dating of lead deposits Econ Geology, v. 55, no. 4, p 840-841, June-July 1960, reply to discussion by R. D Russell, v. 54, p. 951-953, 1959, of author's paper, v. 54, p. 130-135, 1959
- 2-60. Occurrence and geochemistry of native silver in the lead-zinc-silver lodes of the Keno Hill-Galena Hill area, Yukon, Canada Neues Jahrb. Mineralogie Abh (Stuttgart, Germany), Band 94, Festband Ramdohr, 1. Hälfte, p 280-297 incl. tables and illus, and German abs., also geol. sketch map, June 1960

## BOZION, Constantine N. See HEYL, Allen Van 1-60

## BRABB, Earl Edward

- 1-60. Geology of the Big Basin area, Santa Cruz Mountains, California [abs] Dissert. Abs, v. 21, no 5, p 1162-1163, Nov 1960.

## BRACE, William Francis

- 1-60 Behavior of rock salt, limestone, and anhydrite during indentation Jour. Geophys Research, v. 65, no 6, p. 1773-1788 incl. diagrams, tables, and illus., June 1960
- 2-60. An extension of the Griffith theory of fracture to rocks Jour Geophys. Research, v 65, no 10, p 3477-3480 incl diagrams, Oct 1960
- 3-60. Analysis of large two dimensional strain in deformed rocks Internat. Geol Cong, 21st, Copenhagen, 1960, Rept, pt 18, p. 261-269 incl diagrams, 1960.
- 4-60. Orientation of anisotropic minerals in a stress field--Discussion, Chap. 2 in Griggs, D T., ed, Rock deformation--A symposium Geol. Soc. America Mem 79, p. 9-20, illus., 1960.

## BRACHO VALLE, Felipe

- 1-60. Yacimientos de Estaño en la Sierra de Chapultepec, Zac, La Ochoa, Dgo. y Cosio, Ags. México Consejo Recursos Nat no Renovables Bol. 48, 116 p, illus. incl geol map, 1960

## BRADBURY, James Clifford See also FINGER, G C. 1-60

- 1-60. A structural analysis of the northwestern Illinois zinc-lead district Illinois State Acad Sci Trans 1960, v. 53, nos 1-2, p 20-24, illus., Oct 15, 1960
- 2-60 Rare earth and trace element content of an unusual clay on Hicks Dome in Hardin County, Illinois Illinois State Geol. Survey Illinois Industrial Minerals Note 11, p 1-5 incl diagram and tables, July 20, 1960

## BRADDOCK, William Alfred. See also BOWLES, C. G 1-60, EICHER, D L 1-60, GOTT, G. B. 1-60

- 1-60. The geology of the Jewel Cave SW quadrangle, South Dakota and its bearing on the origin of the uranium deposits in the southern Black Hills [abs] Dissert. Abs, v 20, no. 11, p. 4366-4367, May 1960

## BRADLEY, Edward See MEYERS, Theodore Ralph 1-60

## BRADLEY, John Samuel See DUNLAP, Henry Francis, 1-60, 2-60



BRADLEY, William Crane See RICHMOND, Gerald Martin 4-60

BRADLEY, William Frank. See also GRAF, D. L 1-60, GRIM, R E 3-60, HUGHES, P. W 1-60

1-60 (and SERRATOSA, José M.) A discussion of the water content of vermiculite, in Swineford, Ada, ed., Clays and clay minerals Natl Conf. Clays and Clay Minerals, 7th, Washington, D C., Oct 1958, Proc., p 260-270 incl diagrams and table, 1960 (Issued as Internat Earth Science Ser Mon 5 of Pergamon Press, New York )

BRADLEY, Wilmot Hyde

1-60 The biography of an ancient American lake [Colorado-Utah], in Smithsonian treasury of science, V 2, True, W. P, ed. New York, N Y, Simon and Schuster, Inc , p 422-439, illus , slightly revised 1960, originally published 1936.

BRADSHAW, R L. See PARKER, Frank L 1-60, 2-60

BRADY, Lionel Francis, 1880-1963

1-60. Dinosaur tracks from the Navajo and Wingate sandstones Plateau, v 32, no. 4, p. 81-82, Apr. 1960

BRAINERD, Arthur Edward See Van TUYL, Francis Maurice 1-60

BRAMLETTE, Milton Nunn

1-60 Age relations in early Tertiary of Europe and America as indicated by coccolithophorids and related microfossils [abs ] Geol. Soc America Bull , v 71, no 12, pt 2, p 1832, Dec 1960

BRANAN, Clifford B., Jr See also WEBB, F S 1-60

1-60 (and JORDAN, Louise) Southeast Oklahoma reawakens as potential gas giant Oil and Gas Jour , v. 58, no 32, p. 120-122 incl structure map, Aug. 8, 1960

2-60 (and JORDAN, Louise) Recent exploration in the Arkoma basin and Ouachita province, southeastern Oklahoma Oklahoma Geology Notes, v. 20, no 6, p 140-147, illus., June 1960

BRANDT, L W

1-60 (and STROUD, L , and MILLER, J. E ) Phase equilibrium in natural gas systems--Data for two helium-bearing natural gases [abs ] Jour Petroleum Technology, v 12, no 9, p 57, Sept 1960

BRANDWEIN, P F. See REED, William Maxwell 1-60

BRANN, Doris C

1-60 (and KENT, Lois Margaret Schoonover) Catalogue of the type and figured specimens in the Paleontological Research Institution Bulls. Am. Paleontology, v 40, no 184, 995 p , illus., July 15, 1960

BRANSON, Carl Colton

1-60. Local fossil assemblage in the Seminole formation Oklahoma Geology Notes, v 20, no 1, p 16-17, Jan 1960

2-60 Reclassification of an Oklahoma foraminifer Oklahoma Geology Notes, v 20, no 6, p 139, June 1960

3-60. Conostichus Oklahoma Geology Notes, v. 20, no 8, p. 195-207, illus , Aug 1960

4-60 Proposed American standard of early Permian(?) rocks, a century-old controversy Oklahoma Geology Notes, v 20, no 9, p 229-235, illus , Sept 1960

5-60 A restricted biofacies Oklahoma Geology Notes, v 20, no 10, p 259-260, Oct 1960

6-60 John Tipton Lonsdale (1895-1960) Oklahoma Geology Notes, v 20, no 11, p 274, Nov. 1960

7-60 Carboniferous problems of the Mid-Centiment area, in North-eastern Oklahoma Kansas Geol. Soc , 25th Field Conf , Sept 1960, Guidebook, p 44-47, tables, 1960

## BRANT

BRANT, Russell Alan

- 1-60. (and DeLONG, Richard M ) Coal resources of Ohio Ohio Div Geol Survey Bull 58, 245 p , illus , 1960
- 2-60. (and MOULTON, Edward Quentin) Acid mine drainage manual Ohio State Univ Eng Expt. Sta. Bull. 179, 40 p., illus., Jan 1960.

BRAUN, Lewis Timothy See FUENNING, Paul 1-60

BRAUN, Theodor H.

- 1-60 (and WHEATLEY, George York) Electrical analog approach to dip-meter computations Geophysics, v. 25, no. 4, p 928-938 incl diagrams and illus , Aug. 1960

BRAY, Arthur

- 1-60. Mining celestine Canadian Mining Jour , v 81, no. 5, p 68-69 incl. illus , May 1960

BRAY, Ellis Edwin

- 1-60 (and BURKE, W. H., Jr.) Socony Mobil radiocarbon dates, [Pt.] 1 Am. Jour Sci. Radiocarbon Supp , v 2, p 97-111, 1960.

BRAY, J -Guy

- 1-60. Preliminary report on Raimbault River Area, Roberval electoral district Quebec Dept. Mines Geol Surveys Br. Prelim. Rept 421, 8 p , geol map, 1960, also French ed

BRAY, R C E See BROWN, W Lindop

BRAZEE, Rutlage J

- 1-60 (and GUNST, Robert) Hypocenter location of earthquakes by computer methods [abs ] Geol. Soc America Bull., v 71, no. 12, pt. 2, p. 2051, Dec 1960

BRECHTEL, Frederick Charles

- 1-60 (and GOULD, Donald Boyd) Arctic Islands [Northwest Territories] allow fast photogeologic evaluation World Oil, v. 151, no. 1, p. 103-107 incl. geol and index maps, and illus , July 1960.

BREGER, Irving A. See also ERGUN, Sabri, 2-60

- 1-60. (and CHANDLER, John C ) Extractability of humic acid from coalified logs as a guide to temperatures in Colorado Plateau sediments Econ. Geology, v 55, no 5, p 1039-1047 incl. diagrams and tables, Aug. 1960
- 2-60 (and TOURTELOT, Harry Allison, and CHANDLER, John Charles) Geochemistry of kerogen from the Sharon Springs member of the Pierre shale [abs.] Geol. Soc America Bull., v 71, no 12, pt. 2, p 1832-1833, Dec 1960

BREITRICK, Richard A. See BAUER, Herman L , Jr 1-60

BRENDEN, Byron B. See also NEWKIRK, H. W 1-60

- 1-60. (and NEWKIRK, Herbert William, and BATES, Junior Lambert) Principles of high-temperature microscopy Am Ceramic Soc Jour., v 43, no 5, p 246-251 incl diagrams, May 1, 1960.

BRENNAN, Robert See JOHNSON, Carlton Robert, 2-60

BRENT, William Bonney

- 1-60 Faulting at Brock's Gap, Rockingham County, Virginia, and possible effects on Little North Mountain [abs ] Geol. Soc America Bull , v 71, no 12, pt. 2, p 2012, Dec. 1960
- 2-60. Geology and mineral resources of Rockingham County Virginia Div. Mineral Resources Bull 76, 174 p , illus. incl geol map, 1960.

BRETT, P. Robin

- 1-60 Preliminary report on the southeast quarter of La Motte township and the southwest quarter of Lacorne township, Abitibi-East electoral district Quebec Dept Mines Mineral Deposits Br Prelim Rept 428, 12 p, geol map, 1960, also French ed

BRETZ, J Harlen

- 1-60 Bermuda--A partially drowned, late mature, Pleistocene karst Geol. Soc America Bull, v. 71, no. 12, pt. 1, p 1729-1754 incl sketch maps and diagrams, Dec 1960  
2-60. Origin of Bermuda caves, in Moore, G. W., ed, Origin of limestone caves--A symposium with discussion Natl Speleol Soc Bull, v. 22, pt 1, p. 19-22, illus., Jan. 1960

BREWER, Max Clifton See GREENE, Gordon W 1-60

BREWER, R

- 1-60 The petrographic approach to the study of soils Internat Cong Soil Sci., 7th, Madison, Wisconsin, 1960, Trans, v. 1, comm 1, Soil physics, p 1-13 incl table, illus., and French and German summaries [1960]

BRICE, James Coble

- 1-60. Index for description of channel braiding [abs ] Geol. Soc America Bull, v. 71, no 12, pt. 2, p. 1833, Dec 1960.  
2-60. Workbook in historical geology Dubuque, Iowa, Wm C. Brown Co. Pubs, 170 p, illus incl geol map, 1960.

BRICHTA, Louis Chambon

- 1-60. Catalog of recorded exploration drilling and mine workings, Tri-State Zinc-Lead District--Missouri, Kansas, and Oklahoma U S Bur Mines Inf Circ 7993, 13 p incl geol. and other sketch maps and tables, index maps, 1960

BRICKER, Owen P.

- 1-60 Ordovician volcanics of the Bunker Hills, Lebanon County, Pennsylvania, in Some tectonic and structural problems of the Appalachian Piedmont along the Susquehanna River Pennsylvania Geologists, 25th Ann. Field Conf, Oct 1960, Guidebook, p 92-97, sketch map, 1960

BRIDGWATER, David. See BERTHELSEN, Asger, 1-60

BRIDWELL, Ralph Sterling

- 1-60 Dunman-Hudson area, Coleman County, Texas, in Abilene Geol. Soc., Geological contributions 1960, p 30-35, illus, 1960

BRIGGS, Louis I

- 1-60 Petrography of salt, Chap. 3 of Sodium chloride--The production and properties of salt and brine, Kaufmann, D W., ed. New York, N. Y., Reinhold Publishing Corp, p 22-27, illus, 1960.

BRIGGS, Louis Isaac, Jr. See McCULLOCH, David Sears, 1-60

BRIGGS, Reginald Peter. See also BERRYHILL, H L., Jr 1-60, PEASE, M. H., Jr. 2-60

- 1-60. (and PEASE, Maurice Henry, Jr.) Compressional graben and horst structures in east-central Puerto Rico Art 167 in U. S. Geol Survey Prof. Paper 400-B, p. B365-B366 incl. tectonic map, 1960.  
2-60. Laterization in east-central Puerto Rico Caribbean Geol. Conf., 2d, Mayaguez, Puerto Rico, Jan 4-9, 1959, Trans., p 103-119 incl. index and sketch maps, diagrams, and tables, with discussion, 1960

BRIGHT, Norman F. H. See WEBSTER, A. Hubert, 1-60

## BRINDLE

BRINDLE, John E.

- 1-60. Mississippian megafaunas in southeastern Saskatchewan Saskatchewan Dept. Mineral Resources Rept. 45, 107 p., illus., 1960
- 2-60. The faunas of the Lower Paleozoic carbonate rocks in the subsurface of Saskatchewan Saskatchewan Dept. Mineral Resources Rept. 54, 45 p. incl. index map, charts, tables, and illus., 1960.

BRINDLEY, George William See also STEMPLE, I. S. 1-60

- 1-60. (and UDAGAWA, S.) High-temperature reactions of clay mineral mixtures and their ceramic properties--[Pt.] 1, Kalonite-mica-quartz mixtures with 25 weight % quartz Am. Ceramic Soc. Jour., v. 43, no. 2, p. 59-65 incl. diagrams and tables, Feb. 1, 1960.
- 2-60 (and MARONEY, Dorothy M.) High-temperature reactions of clay mineral mixtures and their ceramic properties--[Pt.] 2, Reactions of kaolinite-mica-quartz mixtures compared with the  $K_2O-Al_2O_3-SiO_2$  equilibrium diagram Am. Ceramic Soc. Jour., v. 43, no. 10, p. 511-516 incl. diagrams and tables, Oct. 1, 1960.
- 3-60. (and McKINSTRY, Herbert Alden, and STUBIČAN, Vladimír) Methods for determining Al in tetrahedral and octahedral coordination with respect to oxygen [abs.] Acta Cryst., v. 13, pt. 12, p. 1002-1003, Dec. 1960.
- 4-60. (and COMER, Joseph John) Electron optical data for crystals of scabroite Mineralog. Mag. (London), v. 32, no. 248, p. 363-365, illus., Mar. 1960.

BRINSMEAD, Ralph

- 1-60 Manitoba mine yields rare metals Precambrian, v. 33, no. 8, p. 18-30 incl. sketch maps, diagram, tables, and illus., Aug. 1960.

BRISBIN, William Corbett See WILSON, Harry David Bruce 1-60, 2-60

BRITISH COLUMBIA DEPARTMENT of MINES

- 1-60. Lode metals British Columbia Dept. Mines Ann. Rept. 1959, p. 1-141, illus. incl. geol. maps, 1960
- 2-60 Structural materials and industrial minerals British Columbia Dept. Mines Ann. Rept. 1959, p. 150-201, illus., 1960

BRITISH COLUMBIA DEPARTMENT of MINES and PETROLEUM RESOURCES

- 1-60. Index to published geological mapping in British Columbia Victoria, map, scale about 1 in. to 40 mi., with separate key, revised, Apr. 1960
- 2-60. Geological mapping in British Columbia to April 1960 Victoria, 31 p., illus., June 24, 1960.

BROBST, Donald Albert

- 1-60. Barium minerals, in Am. Inst. Mining, Metall., and Petroleum Engineers, Industrial minerals and rocks, p. 55-64 incl. diagram and tables, 1960

BROCHU, Michel See also FREMLIN, Gerald 1-60, ST.-ONGE, Denis 1-60

- 1-60. Paleoclimatology from Paleozoic to Quaternary eras in Northern Ellesmere Island [Northwest Territories] [abs.] Oil in Canada, v. 12, no. 16, p. 35, Feb. 15, 1960.

BROD, I. O.

- 1-60 Estado actual del problema del origen del petróleo y gas el proceso de su acumulación Asoc. Mexicana Geólogos Petroleros Bol., v. 12, nos. 3-4, p. 103-144, sketch map, chart, and tables, Mar.-Apr. 1960.

BROD, Robert J. See STEENLAND, Nelson Clarence 1-60

BRODER, J. D. See WOLFF, Gunther Arthur 1-60

BRODING, Robert Andrew

- 1-60. (and POOLE, Joseph L.) Collection and processing of digitized acoustic log data Geophysics, v. 25, no. 4, p. 939-947 incl. diagrams and illus., Aug. 1960, republished, Alberta Soc. Petroleum Geologists Jour., v. 8, no. 10, p. 287-294 incl. diagrams and illus., Oct. 1960.

BRODKORB, William Pierce

- 1-60. How many species of birds have existed? Florida State Mus. Bull. Biol Sci., v. 5, no. 3, p 41-53, Jan. 27, 1960

BRODSKY, Harold. See OSTERWALD, Frank William 1-60

BROECKER, Wallace S.. See also ECKELMANN, W. R. 1-60

- 1-60. (and EWING, William Maurice, and HEEZEN, Bruce Charles) Evidence for an abrupt change in climate close to 11,000 years ago Am. Jour. Sci., v 258, no. 6, p. 429-448 incl. diagrams and tables, June 1960  
2-60. Final report [on radiogeology] U. S. Atomic Energy Comm Rept. TID-6095, 22 p., diagrams and tables, June 1, 1960  
3-60 (and OLSON, Edwin A., and ORR, Phil Cummings) Radiocarbon measurements and annual rings in cave formations Nature (London), v. 185, no 4706, p 93-94, illus., Jan. 9, 1960.  
4-60 Geochemistry of ocean water Am Geophys Union Trans , v. 41, no. 2, p 259-260, June 1960.  
5-60. (and others) Natural radiocarbon in the Atlantic Ocean Jour. Geophys Research, v 65, no 9, p. 2903-2931 incl sketch maps, diagrams, and tables, Sept 1960

BROGAN, Phil F

- 1-60. Camp Hancock and "beasts of the Badlands" Geol. Soc. Oregon Country Geol News Letter, v. 26, no. 9, p 63-64, Sept. 1960.  
2-60 Name of Lavacicle Cave given find in Deschutes Geol Soc Oregon Country Geol News Letter, v. 26, no 12, p 83, Dec 1960.

BROKAW, Arnold Leslie

- 1-60 Geologic structure in the Mascot-Jefferson City, Tennessee, zinc district [abs ] Geol Soc. America Bull , v. 71, no 12, pt. 2, p 1834, Dec. 1960, Econ Geology, v. 55, no. 6, p 1326-1327, Sept -Oct 1960.

BROMERY, Randolph Wilson. See also BALSLEY, J. R., Jr. 2-60

- 1-60. (and ZANDLE, Gerald L., and others) Aeromagnetic map of the Boyertown quadrangle, Berks and Montgomery Counties, Pennsylvania U. S. Geol Survey Geophys Inv. Map GP-232, scale 1 24,000 (1 in to 2,000 ft.), 1960  
2-60. Preliminary interpretation of aeromagnetic data in the Allentown quadrangle, Pennsylvania Art 79 in U. S Geol. Survey Prof Paper 400-B, p B178-B180 incl aeromagnetic map, 1960.  
3-60 (and EMERY, Kenneth Orris, and BALSLEY, James Robinson, Jr ) Reconnaissance airborne magnetometer survey off southern California U. S Geol Survey Geophys. Inv Map GP-211, scale about 1 in to 16 mi , with geol map and text, 1960.  
4-60. (and ZANDLE, Gerald L., and others) Aeromagnetic map of the Pottstown quadrangle, Berks, Chester, and Montgomery Counties, Pennsylvania U S Geol. Survey Geophys. Inv. Map GP-222, scale 1 24,000 (1 in to 2,000 ft ), 1960  
5-60. (and HENDERSON, John Richard, and ZANDLE, Gerald L., and others) Aeromagnetic map of the Wagontown quadrangle, Chester County, Pennsylvania U. S. Geol. Survey Geophys Inv. Map GP-223, scale 1 24,000 (1 in to 2,000 ft ), 1960  
6-60. (and ZANDLE, Gerald L , and others) Aeromagnetic map of the Downingtown quadrangle, Chester County, Pennsylvania U. S Geol. Survey Geophys. Inv. Map GP-224, scale 1 24,000 (1 in to 2,000 ft.), 1960  
7-60 (and HENDERSON, John Richard, and ZANDLE, Gerald L., and others) Aeromagnetic map of the Coatesville quadrangle, Chester County, Pennsylvania U S Geol Survey Geophys Inv. Map GP-225, scale 1 24,000 (1 in. to 2,000 ft ), 1960.  
8-60. (and ZANDLE, Gerald L , and others) Aeromagnetic map of part of the Unionville quadrangle, Chester County, Pennsylvania U. S. Geol. Survey Geophys. Inv Map GP-226, scale 1 24,000 (1 in to 2,000 ft.), 1960.  
9-60. (and HENDERSON, John Richard, and ZANDLE, Gerald L , and others) Aeromagnetic map of the Temple quadrangle, Berks County, Pennsylvania U S Geol Survey Geophys Inv. Map GP-227, scale 1 24,000 (1 in. to 2,000 ft ), 1960.

## BROMERY

- 10-60. (and HENDERSON, John Richard, and ZANDLE, Gerald L., and others) Aeromagnetic map of the Fleetwood quadrangle, Berks County, Pennsylvania U. S. Geol. Survey Geophys. Inv. Map GP-228, scale 1 24,000 (1 in. to 2,000 ft.), 1960
- 11-60. (and ZANDLE, Gerald L., and others) Aeromagnetic map of the Manatawny quadrangle, Berks County, Pennsylvania U. S. Geol. Survey Geophys. Inv. Map GP-229, scale 1 24,000 (1 in. to 2,000 ft.), 1960.
- 12-60. (and HENDERSON, John Richard, and ZANDLE, Gerald L., and others) Aeromagnetic map of the Reading quadrangle, Berks County, Pennsylvania U. S. Geol. Survey Geophys. Inv. Map GP-230, scale 1 24,000 (1 in. to 2,000 ft.), 1960
- 13-60. (and HENDERSON, John Richard, and ZANDLE, Gerald L., and others) Aeromagnetic map of the Birdsboro quadrangle, Berks County, Pennsylvania U. S. Geol. Survey Geophys. Inv. Map GP-231, scale 1 24,000 (1 in. to 2,000 ft.), 1960.
- 14-60. (and HENDERSON, John Richard, and ZANDLE, Gerald L., and others) Aeromagnetic map of the Honey Brook quadrangle, Chester and Lancaster Counties, Pennsylvania U. S. Geol. Survey Geophys. Inv. Map GP-233, scale 1 24,000 (1 in. to 2,000 ft.), 1960.
- 15-60. (and HENDERSON, John Richard, and ZANDLE, Gerald L., and others) Aeromagnetic map of the Parkesburg quadrangle, Chester and Lancaster Counties, Pennsylvania U. S. Geol. Survey Geophys. Inv. Map GP-234, scale 1 24,000 (1 in. to 2,000 ft.), 1960
- 16-60. (and HENDERSON, John Richard, and ZANDLE, Gerald L., and others) Aeromagnetic map of part of the Easton quadrangle, Northampton County, Pennsylvania, and Warren County, New Jersey U. S. Geol. Survey Geophys. Inv. Map GP-235, scale 1 24,000 (1 in. to 2,000 ft.), 1960.
- 17-60. (and HENDERSON, John Richard, and ZANDLE, Gerald L., and others) Aeromagnetic map of part of the Riegelsville quadrangle, Bucks and Northampton Counties, Pennsylvania, and Hunterdon and Warren Counties, New Jersey U. S. Geol. Survey Geophys. Inv. Map GP-236, scale 1 24,000 (1 in. to 2,000 ft.), 1960
- 18-60. (and HENDERSON, John Richard, and ZANDLE, Gerald L., and others) Aeromagnetic map of part of the Hatboro quadrangle, Bucks, Montgomery, and Philadelphia Counties, Pennsylvania U. S. Geol. Survey Geophys. Inv. Map GP-237, scale 1 24,000 (1 in. to 2,000 ft.), 1960.
- 19-60. (and HENDERSON, John Richard, and ZANDLE, Gerald L., and others) Aeromagnetic map of the Langhorne quadrangle, Bucks County, Pennsylvania U. S. Geol. Survey Geophys. Inv. Map GP-238, scale 1 24,000 (1 in. to 2,000 ft.), 1960.
- 20-60. (and ZANDLE, Gerald L., and others) Aeromagnetic map of part of the Ambler quadrangle, Montgomery and Bucks Counties, Pennsylvania U. S. Geol. Survey Geophys. Inv. Map GP-265, scale 1 24,000 (1 in. to 2,000 ft.), 1960.
- 21-60. (and ZANDLE, Gerald L., and others) Aeromagnetic map of the Collegeville quadrangle, Montgomery County, Pennsylvania U. S. Geol. Survey Geophys. Inv. Map GP-210, scale 1 24,000 (1 in. to 2,000 ft.), 1960.
- 22-60. (and ZANDLE, Gerald L., and others) Aeromagnetic map of part of the Bedminster quadrangle, Bucks County, Pennsylvania U. S. Geol. Survey Geophys. Inv. Map GP-260, scale 1 24,000 (1 in. to 2,000 ft.), 1960
- 23-60. (and ZANDLE, Gerald L., and others) Aeromagnetic map of part of the Lumberville quadrangle, Bucks County, Pennsylvania, and Hunterdon County, New Jersey U. S. Geol. Survey Geophys. Inv. Map GP-261, scale 1 24,000 (1 in. to 2,000 ft.), 1960.
- 24-60. (and ZANDLE, Gerald L., and others) Aeromagnetic map of the Telford quadrangle, Montgomery and Bucks Counties, Pennsylvania U. S. Geol. Survey Geophys. Inv. Map GP-262, scale 1 24,000 (1 in. to 2,000 ft.), 1960.
- 25-60. (and ZANDLE, Gerald L., and others) Aeromagnetic map of part of the Doylestown quadrangle, Bucks and Montgomery Counties, Pennsylvania U. S. Geol. Survey Geophys. Inv. Map GP-263, scale 1 24,000 (1 in. to 2,000 ft.), 1960.
- 26-60. (and ZANDLE, Gerald L., and others) Aeromagnetic map of the Lansdale quadrangle, Montgomery County, Pennsylvania U. S. Geol. Survey Geophys. Inv. Map GP-264, scale 1 24,000 (1 in. to 2,000 ft.), 1960

BRONOWSKI, J See FISHER, James 1-60

BRONSON, Roy DeBolt

- 1-60. (and SPAIN, James Maurice, and WHITE, Joe Lloyd) Potassium-depleted muscovite--Pt. 1, Preparation using filtration process for treatment with molten lithium nitrate, in Swineford, Ada, ed, Clays and clay minerals, V 8 Natl. Conf Clays and Clay Minerals, 8th, Norman, Okla Oct 1959, Proc., p 39-43 incl. diagrams, 1960. (Issued as Internat. Earth Science Ser Mon 9 of Pergamon Press, New York )

BROOKS, Harold Kelly

- 1-60. Size frequency distribution of particles in sediments of the "Citronelle formation" [Florida], in Late Cenozoic stratigraphy and sedimentation of central Florida Southeastern Geol. Soc., 9th Field Trip, May 1960, Guide-book, p. 32-35 incl. diagrams, 1960

BROPHY, Gerald Patrick

- 1-60. Copper mineralization in the Catoctin formation, Virginia [abs ] Geol. Soc America Bull., v 71, no 12, pt 2, p. 1834, Dec 1960, Econ. Geology, v 55, no. 6, p 1325-1326, Sept -Oct. 1960  
2-60 Sulfate studies--[Pt ] 1, Alunite-jarosite solid solution [abs ] Geol. Soc America Bull., v 71, no 12, pt. 2, p 1834-1835, Dec 1960.

BROSCOE, Andy Joe. See BARTON, Robert H 1-60

BROSGÉ, William Peters

- 1-60. Metasedimentary rocks in the south-central Brooks Range, Alaska Art 161 in U. S Geol Survey Prof. Paper 400-B, p. B351-B352 incl. geol. sketch map, 1960

BROSS, Gerald L.

- 1-60. Distribution of Layton sandstone (Pennsylvanian), Logan County, Oklahoma Shale Shaker, v. 11, no 2, p 2-12 incl. index and sketch maps, sections, table, and discussion by H. G Wessman, Oct. 1960.

BROWN, B. E

- 1-60. (and BAILEY, Sturges Williams) Crystal structure of a chromium chlorite [abs ] Geol. Soc. America Bull., v 71, no. 12, pt 2, p 1835, Dec 1960.

BROWN, Bahngrell W

- 1-60. Geologic study along Highway 16 from Alabama line to Canton, Mississippi Mississippi State Geol Survey Bull. 89, 52 p, illus., 1960

BROWN, Boyd Ray See also PICARD, M. D. 2-60, 3-60

- 1-60 (and LOLEIT, A. Jerome, and PARKER, John William) Geology of Pennsylvanian gas in Four Corners region Am. Assoc. Petroleum Geologists Bull, v. 44, no 9, p 1541-1569 incl structure contour and index maps, sections, and tables, Sept 1960

BROWN, Charles N. See HERSHEY, Howard Garland 1-60

BROWN, Charles Quentin

- 1-60 Newly discovered sillimanite deposit in Pickens County, South Carolina [abs ] Geol Soc America Bull, v 71, no 12, pt. 2, p 2012-2013, Dec 1960.

BROWN, Clair Alan

- 1-60 Palynological techniques Baton Rouge, La , privately printed, 188 p., illus , 1960

BROWN, Clarence Ervin. See also THAYER, T P. 1-60

- 1-60 (and WHITLOW, Jesse William) Geology of the Dubuque South quadrangle, Iowa-Illinois U. S Geol Survey Bull. 1123-A, p 1-93 incl maps, diagrams, sections, and table, 1960

## BROWN

BROWN, George Malcolm. See also WAGER, L. R. 1-60

- 1-60 The effect of ion substitution on the unit cell dimensions of the common clinopyroxenes *Am Mineralogist*, v 45, nos 1-2, p. 15-38 incl. diagrams and tables, Jan.-Feb. 1960

BROWN, Harold Henry

- 1-60 Pennsylvanian of the Paradox Basin salt structure area [Colorado Plateau], in *Geology of the Paradox Basin fold and fault belt Four Corners Geol. Soc., 3d Field Conf*, 1960, [Guidebook] p 79, illus, 1960

BROWN, Harrison Scott. See also KRINOV, E. L. 1-60

- 1-60. The density and mass distribution of meteoritic bodies in the neighborhood of the earth's orbit *Jour. Geophys. Research*, v. 65, no. 6, p. 1679-1683 incl. diagrams and tables, June 1960

BROWN, John Stafford

- 1-60 Geological interpretation of lead-ore isotopes [abs.] *Geol. Soc. America Bull.*, v. 71, no. 12, pt. 2, p. 1835-1836, Dec 1960, with title, A geological interpretation of lead ore isotopes, *Econ. Geology*, v 55, no 6, p 1330-1331, Sept.-Oct 1960  
2-60 (and MEYER, Pierrepont Arthur, Jr.) Geochemical prospecting as applied by the St Joseph Lead Company, in *Internat. Geol. Cong., Mexico, Symposium de exploración geofísica*, Tomo 3 México, D G, p 623-639 incl. sketch maps, section, and diagrams, 1960.

BROWN, Kermit Earl

- 1-60 (and JESSEN, Frank Weldon) Effect of pressure and temperature on cavities in salt *Am. Inst. Mining, Metall., and Petroleum Engineers Trans.* 1959, v. 216, p. 341-345 incl. diagrams, 1960

BROWN, Leonard Franklin, Jr. See also SOC. ECON. PALEONTOLOGISTS and MINERALOGISTS, Permian Basin Chap. 1-60

- 1-60 A traverse of Post-Avis Cisco rocks, Brazos Valley, north-central Texas, in *A study of the Cisco facies near Breckenridge, Texas Soc. Econ. Paleontologists and Mineralogists Permian Basin Chap., Ann. Field Trip*, Apr. 1960, [Guidebook] p 1-5, illus., 1960  
2-60. Stratigraphy of the Blach Ranch-Crystal Falls section (Upper Pennsylvanian), northern Stephens County, Texas, in *A study of the Cisco facies near Breckenridge, Texas Soc. Econ. Paleontologists and Mineralogists Permian Basin Chap., Ann. Field Trip*, Apr. 1960, [Guidebook] in pocket, illus incl. geol. map, 1960, Texas Univ. Bur. Econ. Geology Rept. Inv., no 41, illus incl. geol. map, Apr 1960

BROWN, Maurice Vertner

- 1-60 (and NORTHROP, John, and BLAIK, Maurice) Seismic evidence for post-Cretaceous faulting offshore Long Island, New York [abs.] *Jour. Geophys. Research*, v 65, no 8, p. 2478, Aug 1960

BROWN, Philip Monroe

- 1-60 (and FLOYD, E. O.) Occurrence of lithium, boron, bromine, fluorine, and iodine in natural ground waters of the Coastal Plain of North Carolina [abs.] *Geol. Soc. America Bull.*, v 71, no 12, pt 2, p. 2013, Dec 1960.  
2-60 Ground-water supply of Cape Hatteras National Seashore Recreational Area North Carolina Dept. Water Resources Rept. Inv. 1, 14 p incl. sketch map, section, diagram, and tables, 1960

BROWN, R. J. S.

- 1-60. (and GAMSON, B. W.) Nuclear magnetism logging *Jour. Petroleum Technology*, v 12, no. 8, p. 201-209 incl. diagrams, Aug. 1960

BROWN, Randall Emory. See also SCHWENDIMAN, L. C. 1-60

- 1-60. The use of geophysics and geochemistry to confirm geological interpretations at the Hanford Works of the Atomic Energy Commission, USA *Internat. Geol. Cong.*, 21st, Copenhagen, 1960, Rept., pt 2, p 75-82 incl. sketch map and section, 1960.



- 2-60. Desirable new geologic research in support of radioactive waste disposal as indicated by Hanford [Washington] experience, in Disposal of radioactive wastes, V. 2 Internat Atomic Energy Agency, Sci Conf, on Disposal of Radioactive Wastes, Monaco, Nov. 16-21, 1959, Proc., v 2, p 499-516 incl sketch maps, sections, and illus, with English, French, Russian, and Spanish abs, 1960
- 3-60. (and McCONIGA, M W.) Some contributions to the stratigraphy and indicated deformation of the Ringold formation [Washington] Northwest Sci, v. 34, no 2, p. 43-54, illus, May 1960.

## BROWN, Robert David, Jr

- 1-60. (and RICH, Ernest I) Early Cretaceous fossils in submarine slump deposits of Late Cretaceous age, northern Sacramento Valley, California. Art. 149 in U S Geol Survey Prof Paper 400-B, p B318-B320 incl geol. sketch map and section, 1960.
- 2-60. (and GOWER, Howard Dale, and SNAVELY, Parke Detweiler, Jr.) Geology of the Port Angeles-Lake Crescent area, Clallam County, Washington U S. Geol Survey Oil and Gas Inv. Map OM-203, scale 1:62,500 (about 1 in. to 1 mi.), with sections and text, 1960.

## BROWN, Roger J E. See also MACKAY, J R 3-60

- 1-60 The distribution of permafrost and its relation to air temperature in Canada and the U S S R Arctic, v 13, no. 3, p 163-177, illus., Sept 1960.

## BROWN, Roland Wilbur, 1893-1961 See also ESTES, Richard 1-60

- 1-60. Corkwood in the Eocene flora of the southeastern United States Jour. Paleontology, v. 34, no. 3, p 429-432, illus, May 1960.

## BROWN, Silas Christian

- 1-60 (and LAUTH, Robert Edward) Northern Arizona has good oil, gas prospects World Oil, v. 151, no. 4, p 98-103, 106 incl isopach maps, Sept 1960

## BROWN, W. A See JAMES, Laurence Beresford 1-60

## BROWN, Walter C

- 1-60. Classroom stream table Jour. Geol Education, v. 8, no 2, p 63-64, illus., fall 1960.

## BROWN, William B, 3d

- 1-60. Fossils in daily life Frontiers, v 24, no. 4, p 117-119, 128, illus., Apr 1960

## BROWN, William Liddle

- 1-60. (and others) Studies on pyroxene, amphibole, zeolite and feldspar minerals at the Department of Mineralogy, Pennsylvania State University [abs ]. Acta Cryst., v 13, pt 12, p 1004, Dec 1960
- 2-60. Lattice changes in heat-treated plagioclases--The existence of monalbite at room temperature Zeitschr Kristallographie (Frankfurt am Main, Germany), Band 113, Max von Laue Festschr. 2, p 297-329 incl. diagrams and tables, with German abs, Apr. 1960
- 3-60. The crystallographic and petrologic significance of peristerite unmixing in the acid plagioclases Zeitschr Kristallographie (Frankfurt am Main, Germany), Band 113, Max von Laue Festschr. 2, p 330-344 incl diagram, table, and illus, with German abs., Apr 1960.

## BROWN, William Lindop

- 1-60. (and BRAY, R. C. E.) The geology of the Geco mine [Ontario] Canadian Mining Metall. Bull, v. 53, no. 573, p. 3-11 incl geol sketch maps and sections, Jan 1960, Canadian Inst Mining and Metallurgy Trans, v. 63, p. 1-9 incl geol. sketch maps and sections, 1960

## BROWNE, Ruth G.

- 1-60. (and McDONALD, Donald E) Wisconsin molluscan faunas from Jefferson County, Kentucky [abs ] Geol. Soc America Bull., v. 71, no 12, pt 2, p 2013, Dec 1960

## BROWNE

- 2-60. (and McDONALD, Donald E.) Wisconsin molluscan faunas from Jefferson County, Kentucky Bulls Am. Paleontology, v 41, no 189, p. 165-183, illus., Aug. 5, 1960

BRUCE, Robert Russell. See DeMUMBRUM, Lawrence Edgar 2-60

BRUCKER, Roger W.

- 1-60 Relationship of vertical shafts to other cave features [abs.] Natl. Speleol. Soc. NSS News, v. 18, no 7, p. 76, July 1960

BRUHN, A. F. See STOKES, William Lee 5-60

BRUMMER, Johannes J

- 1-60 A reconnaissance geochemical survey in the Seal Lake area, Labrador Canadian Mining and Metall. Bull., v. 53, no 576, p. 260-267 incl index and sketch maps, table, and illus., Apr. 1960, Canadian Inst. Mining and Metallurgy Trans., v 63, p 172-179, 1960.

BRUNDAGE, Harrison Truesdale

- 1-60. Many operators entering Appalachian Basin World Oil, v. 150, no 4, p 93-99 incl. index map, section, and table, Mar 1960  
2-60. Where is the basement? World Oil, v. 151, no 5, p. 170, 174, 176, 178, 181-182, 187-188 incl diagram, Oct. 1960

BRUNDALL, Laurence

- 1-60. Robert Lee Anderson (1912-1959) Am. Assoc. Petroleum Geologists Bull., v 44, no. 2, p. 256-257 incl portrait, Feb. 1960.

BRUNE, James N See also NAFE, J. E. 1-60

- 1-60. (and NAFE, John Elliott, and OLIVER, Jack Ertle) A simplified method for the analysis and synthesis of dispersed wave trains Jour. Geophys. Research, v. 65, no 1, p. 287-304 incl. diagrams and tables, Jan. 1960  
2-60 (and NAFE, John Elliott, and OLIVER, Jack Ertle) Radiation pattern of Rayleigh waves from the southeastern Alaska earthquake of July 10, 1958 [abs.] Jour. Geophys. Research, v. 65, no. 8, p. 2478-2479, Aug. 1960.

BRUNTON, George Delbert. See BECK, Carl Wellington 2-60

BRUSH, Lucien Munson, Jr. See also LEOPOLD, L. B. 2-60

- 1-60. (and WOLMAN, Markley Gordon) Knickpoint behavior in noncohesive material--A laboratory study Geol. Soc. America Bull., v 71, no 1, p 59-73 incl diagrams and tables, Jan. 1960.

BRUUN, Per See also BOWMAN, J. R. 1-60

- 1-60. (and GERRITSEN, Franciscus) Natural by-passing of sand at coastal inlets Am. Soc. Civil Engineers Proc., v. 85, paper 2301, Jour. Waterways and Harbors Div., no WW 4, pt 1, p 75-107, illus., Dec 1959, discussion by J. R. Bowman, v 86, paper 2540, no WW 2, pt 1, p 131-132, June 1960.  
2-60. United States, bibliography--Engineering, in Bibliography, 1955-1958, Internat. Geog. Union Comm. Coastal Sedimentation Louisiana State Univ. Coastal Studies Inst. Contr 60-2, p. 81-114, June 1, 1960  
3-60. Beach erosion and protection in Florida, in Tanner, W. F., ed, Symposium on highway engineering geology, 11th Ann., Feb 1960, Proc., p 67-86, illus., Sept 1960

BRYAN, Alan L.

- 1-60 (and TUOHY, Donald R.) A basalt quarry in northeastern Oregon Am. Philos. Soc. Proc., v 104, no 5, p. 485-510, illus. incl. sketch map, Oct. 17, 1960

BRYAN, James W.

- 1-60. Stratigraphy and petrography of two sections of Nolichucky shale in the southwest part of Virginia [abs.] Virginia Jour. Sci., v. 11, no. 4, p 214, Sept. 1960.

BRYANT, Bruce Hazelton. See also CAROLINA GEOLOGICAL SOCIETY 1-60, FOSTER, M. D 2-60, REED, J. C., Jr 1-60, 2-60  
1-60. (and SCHMIDT, Robert George, and PECORA, William Thomas) Geology of the Maddux quadrangle, Bearpaw Mountain, Blaine County, Montana U. S Geol Survey Bull 1081-C, p. 91-116, illus. incl. geol. map, 1960

BRYHNI, Inge  
1-60 Istids-sjøer i Nord-Amerika Naturen (Bergen, Norway), årg. 84, nr 7, p 418-427 incl sketch map, diagram, and illus., 1960.

BRYNER, Leonid  
1-60. Breccia and pebble columns associated with hydrothermal ore deposits [abs.] Geol Soc America Bull., v 71, no. 12, pt 2, p 1836, Dec 1960, Econ Geology, v 55, no 6, p 1334, Sept.-Oct 1960.  
2-60. Geology of the South Comobabi Mountains and Ko Vaya Hills, Pima County, Arizona [abs.] Arizona Geol Soc. Digest, v. 3, p. 171-172, Mar. 1960.

BUCHANAN, Richard Stuart  
1-60 Present and future oil and gas possibilities in Pennsylvanian and Permian rocks of southeastern Colorado [abs.] Am Assoc Petroleum Geologists Bull, v 44, no. 1, p 125-126, Jan. 1960.

BUCKLAND, Francis Channing  
1-60. Modern quest for the Klondike lode [Yukon] Western Miner and Oil Rev, v 33, no 10, p 54-57 incl. illus, Oct 1960

BUCKNER, Dean Alan  
1-60 (and ROY, Rustum) Note on a subsolidus study of the system  $\text{CaSiO}_3\text{-SrSiO}_3$  Am Ceramic Soc Jour, v 43, no 1, p 52-53 incl diagram, Jan 1, 1960  
2-60 (and ROY, Della Martin, and ROY, Rustum) Studies in the system  $\text{CaO-Al}_2\text{O}_3\text{-SiO}_2\text{-H}_2\text{O}$ --[Pt.] 2, The system  $\text{CaSiO}_3\text{-H}_2\text{O}$  Am. Jour. Sci., v 258, no 2, p. 132-147 incl. diagrams and tables, Feb. 1960

BUCKWALTER, Tracy V  
1-60. Some structural aspects of the Reading Hills Pennsylvania Acad Sci. Proc., v 34, p 109-116, illus., 1960

BUDD, Harrell  
1-60. Notes on the Pure Oil Company discovery at Northwest Lisbon [Utah], in Geology of the Paradox Basin fold and fault belt. Four Corners Geol Soc., 3d Field Conf, 1960, [Guidebook] p. 121-124, illus, 1960

BUDDHUE, John Davis  
1-60. Partial list of ice falls--Reward \$500 Mineralogist, v 28, nos 2-3, p 14, 16, 18, Feb -Mar 1960

BUDDING, Antonius Jacob  
1-60. (and PITRAT, Charles William, and SMITH, Clay Taylor) Geology of the southeastern part of the Chama basin, in Rio Chama Country New Mexico Geol. Soc, 11th Field Conf., Oct. 1960, Guidebook, p 78-92, illus, 1960.

BUDDINGTON, Arthur Francis. See also BALSLEY, J R., Jr. 1-60, 3-60  
1-60. The origin of anorthosite re-evaluated India Geol Survey Recs., v. 86, pt 3, p. 421-432, Calcutta, India, 1960.

BUERGER, Martin Julian See also BURNHAM, C W 4-60, PREWITT, C T 1-60, 2-60, ZOLTAI, Tibor 2-60  
1-60 Crystal-structure analysis New York, N Y., John Wiley and Sons, Inc., 668 p., illus, 1960.  
2-60. (chairman) Symposium on twinning Inst. Inv Geol "Lucas Malada" Cursos y Conf (Madrid), fasc. 7, p 3-57 incl. diagrams, tables, and illus, May 1960 Includes individual papers which are cited separately.

BUERGER

- 3-60. Twinning, with special regard to coherence, in Symposium on twinning. Inst. Inv. Geol. "Lucas Mallada" Cursos y Conf. (Madrid), fasc. 7, p. 5-7, May 1960.

BULL, William Benham

- 1-60. Geometry of alluvial fans in western Fresno County, California [abs.]. Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1836-1837, Dec. 1960.  
2-60 Types of deposition on alluvial fans in western Fresno County, California [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 2052, Dec. 1960

BULLOCK, Kenneth C.

- 1-60 (and SMOUSE, DeForrest, and ROBINSON, Gerald B., Jr.) Minerals and mineral localities of Utah Provo, Dept. Geology, Brigham Young Univ., 170 p., illus., July 1960.

BUNKER, Carl Maurice

- 1-60. (and DIMENT, William Horace, and WILMARTH, Verl Richard) Distribution of gamma radioactivity, radioactive glass, and temperature surrounding the site of the Rainier underground nuclear explosion, Nevada Art. 68 in U. S. Geol. Survey Prof. Paper 400-B, p. B151-B155 incl. sketch map and diagrams, 1960.

BUNN, John R.

- 1-60. Geology of the Chittim Anticline, Maverick County, Texas, in Geology of the Chittim Arch and the area north to the Pecos River. Corpus Christi Geol. Soc., 10th Ann. Field Trip, Apr. 1960, [Guidebook] p. 12-31, illus., 1960.

BUR, T. See POLLOCK, James Percy 1-60

BURBANK, Lawrence. See PÉWÉ, Troy Lewis 1-60

BURBANK, Wilbur Swett See also LUEDKE, R. G. 1-60

- 1-60. Pre-ore propylitization, Silverton caldera, Colorado Art. 6 in U. S. Geol. Survey Prof. Paper 400-B, p. B12-B13, 1960

BURCH, John Q.

- 1-60 Notes on the taxonomy of the pelecypod genus Corbula Bruguière, 1798 Veliger, v. 3, no. 2, p. 33-34, Oct. 1, 1960.

BURCHARD, Ernest Francis, 1875-1961

- 1-60. Russellville Brown Iron Ore District, Franklin County, Alabama, with introduction and annotations by H. D. Pallister Alabama Geol. Survey Bull. 70, 96 p., illus. incl. geol. map, 1960.

BURCHETT, R. R.

- 1-60 North-south stratigraphic cross-section of Pennsylvanian rocks in eastern Nebraska [abs.]. Nebraska Acad. Sci. Proc., 70th Ann. Mtg., p. 16 [1960].

BURCKLE, Lloyd H.

- 1-60 Some Mississippian fenestrate Bryozoa from central Utah Jour. Paleontology, v. 34, no. 6, p. 1077-1098 incl. index map, illus., Nov. 1960.

BURFORD, Arthur E.

- 1-60. Structural geology of the Medano Peak area, Sangre de Cristo Range, Colorado [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1837, Dec. 1960.

BURGER, John Allan

- 1-60. Mesaverde group in adjoining areas of Utah, Colorado, and Wyoming [abs.] Am. Assoc. Petroleum Geologists Bull., v. 44, no. 6, p. 954, June 1960.
- 2-60. Mesaverde group in adjoining areas of Utah, Colorado and Wyoming [abs.] Am. Assoc. Petroleum Geologists Rocky Mtn. Sec. Geol. Record 1960, p. 163 [1960]

BURGESS, Jack D. See HOARE, Richard David 1-60

BURGESS, Richard Joseph

- 1-60. Oil in Trenton synclines [Michigan and Ontario] Oil and Gas Jour., v. 58, no. 33, p. 124-128, 130-131 incl. sketch maps, sections, and tables, Aug. 15, 1960
- 2-60. Oil in Trenton synclines a new exploratory target [abs.] Canadian Oil and Gas Industries, v. 13, no. 4, p. 102, Apr. 1960.
- 3-60. (and HADLEY, C. J.) Geology of the Colchester oil pool, southwestern Ontario Oil in Canada, v. 13, no. 2, p. 28-33, illus., Nov. 14, 1960.

BURGIN, Lorraine See WILLIAMSON, Donald Robert 2-60, 3-60, 4-60

BURK, Cornelius Franklin, Jr.

- 1-60. A regional study of the Silurian stratigraphy of Gaspé Peninsula, Quebec [abs.] Dissert. Abs., v. 20, no. 9, p. 3691-3692, Mar. 1960

BURKE, W. H., Jr. See BRAY, Ellis Edwin 1-60

BURKS, James H. See WARMAN, James C. 1-60

BURLING, A. H. See UNDERWOOD, Lloyd Bradish 1-60

BURNETT, Claude Murphy See HAGER, Dilworth S. 1-60

BURNETT, John L.

- 1-60. Expansible shale California Div. Mines Mineral Inf. Service, v. 13, no. 5, 11 p., May 1960.

BURNHAM, Clifford Wayne. See also PUTNAM, G. W. 1-60

- 1-60. A method for determining the solubility of silicates in water vapor at high pressures [abs.] Jour. Geophys. Research, v. 65, no. 8, p. 2479 incl. table, Aug. 1960
- 2-60. (and TUTTLE, Orville Frank) The second critical end point in the system  $\text{NaAlSiO}_4 \cdot \text{H}_2\text{O}$  [abs.] Jour. Geophys. Research, v. 65, no. 8, p. 2479-2480, Aug. 1960
- 3-60. (and TUTTLE, Orville Frank) Composition of the magmatic vapor phase [abs.]. Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1837, Dec. 1960
- 4-60. (and BUERGER, Martin Julian) Refinement of the crystal structure of andalusite [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1838, Dec. 1960

BURNS, Donald John

- 1-60. Geochemical prospecting for copper-Arthur's Seat, Clarendon [Jamaica] Geonotes, v. 3, pt. 2, (Jamaica Geol. Survey Pub. 62), p. 74-75, July 1960

BURNS, James Richard

- 1-60. Variation of aluminum, sodium, and manganese in common rocks. Art. 73 in U. S. Geol. Survey Prof. Paper 400-B, p. B164-B165 incl. table, 1960.

BURR, Stanley V.

- 1-60. The self-potential method for the prospector Canadian Mining and Metall. Bull., v. 53, no. 583, p. 866-872 incl. sketch maps, Nov. 1960, Canadian Inst. Mining and Metallurgy Trans., v. 63, p. 591-597, 1960.

## BURT

BURT, Alvin M.

- 1-60. (and WOOD, Albert Elmer) Variants among middle Oligocene rodents and lagomorphs Jour Paleontology, v. 34, no. 5, p. 957-960 incl. table and illus., Sept. 1960.

BUSCH, Daniel Adolph

- 1-60. Prospecting for stratigraphic traps [abs.] Am. Assoc. Petroleum Geologists Bull., v. 44, no. 1, p. 126, Jan 1960.

BUSCHBACH, Thomas Charles

- 1-60. Stratigraphy of Cambrian and Ordovician formations of northeastern Illinois [abs.] Dissert. Abs., v. 20, no. 8, p. 3260-3261, Feb. 1960.

BUSCHER, Gustav

- 1-60. The boy's book of the earth beneath us New York, N. Y., Roy Pubs., 144 p., illus., translated from German by Joseph Avrach and Egon Larsen [1960].

BUSÉ, María Luisa

- 1-60. (and WATSON, Edward Hahn) Alteration of ultrabasic rocks near Bryn Mawr, Pa. Pennsylvania Acad. Sci. Proc., v. 34, p. 117-123, illus., 1960.

BUSH, Alfred Lerner

- 1-60. (and MARSH, Owen Thayer, and TAYLOR, Richard Bartlett) Areal geology of the Little Cone quadrangle, Colorado U. S. Geol. Survey Bull. 1082-G, p. 423-492 incl. index maps, also geol. map and sections, 1960.

BUSH, Helen

- 1-60. Garnets, garnets everywhere Canadian Audubon, v. 22, no. 2, p. 50-53 incl. diagrams and illus., Mar.-Apr. 1960.

BUSH, J. B

- 1-60 (and COOK, D. R., and LOVERING, T. S., and MORRIS, H. T.) The Chief Oxide-Burgin area discoveries, East Tintic district, Utah, A case history--Pt. 1, U. S. Geological Survey studies and exploration, by T. S. Lovering, D. R. Cook, and H. T. Morris, Pt. 2, Bear Creek Mining Company studies and exploration, by J. B. Bush and D. R. Cook Pt. 1 in Econ. Geology, v. 55, no. 6, p. 1116-1147 incl. geol. sketch map, index and structure maps, logs and table, Sept.-Oct. 1960, Pt. 2 in v. 55, no. 7, p. 1507-1548 incl. geol. cross sections, tables, and diagrams, Nov. 1960.

BUSH, Vernon

- 1-60. Concretions and septaria Gems and Minerals, no. 276, p. 35, 81 incl. illus., Sept. 1960.

BUSH, Vincent R. See STEINBRUGGE, Karl V. 3-60

BUSHNELL, Vivian C.

- 1-60. (editor) Scientific studies at Fletcher's Ice Island, T-3, 1952-1955, V. 3 U. S. Air Force Cambridge Research Center Geophysics Research Directorate Geophys. Research Paper 63, 114 p., illus., Apr. 1960. Includes individual papers which are cited separately

BUSS, Walter Richard

- 1-60. Physiography and geomorphic history of part of southeastern Utah and adjacent Colorado, in Geology of the Paradox Basin fold and fault belt Four Corners Geol. Soc., 3d Field Conf., 1960, [Guidebook] p. 31-32, 1960.  
2-60. Some surface features of the Brigham quartzite [abs.] Utah Acad. Sci., Arts, and Letters Proc. 1959-60, v. 37, p. 158, 1960.

BUTKOVICH, T. R.

- 1-60. (and LANDAUER, Joseph K.) Creep of ice at low stresses; U. S. Army, Corps of Engineers, Snow Ice and Permafrost Research Establishment, Research Rept. 72, 6 p., illus., Aug. 1960.

## BUTLER, Elizabeth Ann McGee

- 1-60 Miocene-Oligocene boundary problems in Gulf Coast [abs.] Am. Assoc. Petroleum Geologists Bull. v. 44, no. 9, p. 1600, Sept 1960
- 2-60. Paleontology of the L. L. and E. et al well, Unit 1-L, No. 1 Louisiana Geol. Survey Folio Ser., no. 1, 4 sheets, illus., Feb 1960.
- 3-60 Miocene-Oligocene boundary problems in the gulf coast [abs.] Gulf Coast Assoc. Geol. Socs. Trans., v 10, p 32, 1960

## BUTTERLIN, Jacques A.

- 1-60. (and BONET, Federico) Decouverte d'une série éocène dans la presqu'île du Yucatan (Mexique)--Ses relations avec les séries du même âge dans les Grandes Antilles. Caribbean Geol. Conf., 2d, Mayagüez, Puerto Rico, Jan. 4-9, 1959, Trans., p 33-39 incl. geol. and tectonic maps, with discussion, 1960.
- 2-60. (and BONET, Federico) Données nouvelles sur la géologie de la partie mexicaine de la presqu'île du Yucatan Acad. Sci. Comptes Rendus (Paris), tome 251, no 15, p 1537-1539, Oct. 10, 1960.
- 3-60. Discussion on the origin of bauxite associated with limestone Geonotes, v 3, pt. 1 (Jamaica Geol. Survey Pub. 60), p. 27-29, Apr. 1960.
- 4-60. Géologie générale et régionale de la République d'Haiti Paris Univ. Inst. Hautes Etudes Amérique Latine Travaux et Mem 6, 194 p incl. sketch maps, sections, tables, and illus., geol. map (in pocket), 1960
- 5-60. Presencia de *Pellatispirella* Hanzawa 1937 en México Asoc. Mexicana Geólogos Petroleros Bol., v. 12, nos 3-4, p. 85-89, illus., Mar-Apr. 1960
- 6-60. (and BONET, Federico) Microfauna del Eoceno Inferior de la Península de Yucatán México Univ. Nac. Inst. Geología Paleontología Mexicana, no 7, 18 p., illus., 1960.

## BYBEE, Halbert Homer

- 1-60. Survey of preservation of samples and cores in United States and Canada Am. Assoc. Petroleum Geologists Bull., v. 44, no. 7, p 1205-1207 incl. tables, July 1960.

## BYERLY, Perry

- 1-60. Beno Gutenberg [1889-1960], geophysicist Science, v 131, no. 3405, p. 965-966 incl. portrait, Apr. 1, 1960
- 2-60 Earthquake mechanisms Science, v. 131, no. 3412, p 1493-1496 incl. diagrams and illus., May 20, 1960.
- 3-60. (and TALIAFERRO, Nicholas Lloyd) Memorial to George Davis Louderback (1874-1957) Geol. Soc. America Proc. 1959, p. 137-142, portrait, Oct 1960.

## BYERLY, P. Edward

- 1-60. (and STEWART, Samuel Woods, and ROLLER, John C.) Seismic measurements by the U. S. Geological Survey during the Pre-Gnome high-explosives tests near Carlsbad, New Mexico--Final report U. S. Geol. Survey Rept. TEI-761, 40 p. incl. diagram and table, Apr. 1960.

## BYERS, Alfred Roddick

- 1-60. Sulphide deposits in Saskatchewan, in Symposium on the occurrence of massive sulphide deposits in Canada Canadian Mining and Metall. Bull., v. 53, no. 575, p. 145-152 incl. index and geol. sketch maps, Mar. 1960; Canadian Inst. Mining and Metallurgy Trans., v 63, p. 86-93, 1960.

## BYERS, Frank Milton, Jr.

- 1-60. Geology of the Alvord Mountain quadrangle, San Bernardino County, California U. S. Geol. Survey Bull 1089-A, 71 p., illus. incl. geol. map, 1960.

## BYERS, Horace Robert

- 1-60. Carl-Gustaf Arvid Rossby, December 28, 1898-August 19, 1957: Natl. Acad. Sci. Biog. Mem., v 34, p. 250-270, portrait, 1960

## BYRNE, John Vincent

- 1-60. (and EMERY, Kenneth Orris) Sediments of the Gulf of California Geol. Soc. America Bull., v. 71, no 7, p 983-1010 incl. sketch maps, sections, diagrams, and tables, illus., July 1960.

## CABELL

CABELL, Thomas R.

- 1-60. (and ORR, Allen A., and HAYES, John Robert) Ion exchange separation of germanium. Anal. Chemistry, v. 32, no. 12, p. 1602-1603 incl. tables, Nov. 1960.

CADILLA, José F.

- 1-60. Geology of the Carolina clay deposit in Puerto Rico. Caribbean Geol. Conf., 2d, Mayaguez, Puerto Rico, Jan. 4-9, 1959, Trans., p. 147-149, 1960.
- 2-60. A clay for a lightweight aggregate. Puerto Rico Econ. Devel. Adm., Dept. Indus. Research, Mineralogy and Geology Sec. Tech. Rept., [70] p., illus. incl. geol. map, 1960.

CADWELL, Donald E.

- 1-60. (and DUWELL, Ernest John) Evaluating resistance of abrasive grits to comminution. Am. Ceramic Soc. Bull., v. 39, no. 11, p. 663-667 incl. diagrams, table, and illus., Nov. 1960.

CADY, Gilbert Haven

- 1-60. The status of applied anthracology in North America. Internat. Comm. Coal Petrology, 1st Internat. Cong. Coal Petrology, Heerlen, Netherlands, Sept. 1958, Proc., no. 3, p. 107-111, discussion, 1960.

CADY, John Gilbert

- 1-60. Mineral occurrence in relation to soil profile differentiation. Internat. Cong. Soil Sci., 7th, Madison, Wisconsin, 1960, Trans., v. 4, comm. 5, p. 418-424 incl. French and German summaries, and discussion [1960]

CADY, Wallace Martin

- 1-60. (and ZEN, E-an) Stratigraphic relationships of the Lower Ordovician Chipman formation in west-central Vermont. Am. Jour. Sci., v. 258, no. 10, p. 728-739 incl. geol. maps, chart, and sections, Dec. 1960.
- 2-60. Stratigraphic and geotectonic relationships in northern Vermont and southern Quebec. Geol. Soc. America Bull., v. 71, no. 5, p. 531-576, geol. and tectonic map and sections and correlation chart, May 1960.

CAHOON, Elizabeth J.

- 1-60. Sphenobaiera ikorfatensis f. papillata from the Lakota formation of the Black Hills [South Dakota]. Torrey Bot. Club Bull., v. 87, no. 4, p. 247-257, illus., July-Aug. 1960.

CALDER, A. B.

- 1-60. Evaluation and presentation of spectro-analytical results. New York, New York, MacMillan Co., 47 p. incl. tables and diagrams, 1960.

CALDWELL, Dabney W.

- 1-60. (leader) The surficial geology of the Sandy River valley from Farmington to Norridgewock, Maine, Trip C in Field trips in west-central Maine. New England Intercollegiate Geol. Conf., 52d Ann. Mtg., Oct. 1960, Guidebook, p. 19-24 incl. sketch map and table, 1960.
- 2-60. The geology of Baxter State Park and Mt. Katahdin. Maine Geol. Survey State Park Geol. Ser., no. 2, 54 p., illus. incl. geol. maps, Feb. 1960.

CALDWELL, Joseph Morton

- 1-60. Development and tests of a radioactive sediment density probe [U.S.] Beach Erosion Board Tech. Memo. 121, 29 p., illus., Sept. 1960.

CALIFORNIA DEPARTMENT of WATER RESOURCES, Division of Resources Planning

- 1-60. Klamath River Basin investigation. California Dept. Water Resources Div. Resources Plan. Bull. 83, 198 p. incl. tables and illus., also index and geol. sketch maps, sections, and diagrams, May 1960.
- 2-60. Upper Tule River reconnaissance investigation. California Dept. Water Resources Div. Resources Plan. Bull. 82, [82] p. incl. tables, also index and maps, Nov. 1960.



- 3-60. Intrusion of salt water into ground water basins of southern Alameda County. California Dept Water Resources Div. Resources Plan. Bull. 81, [64] p. incl. sketch maps and diagram, Dec. 1960.
- 4-60 Ground water, in Northeastern counties investigation. California Dept. Water Resources Div. Resources Plan. Bull. 58, p. 61-62, tables, geol. maps following p. 312, June 1960.
- CALIFORNIA DIVISION of MINES  
1-60 Sampling mineral deposits California Div. Mines Mineral Inf. Service, v. 13, no. 11, p. 1-7, illus., Nov. 1960
- CALIFORNIA DIVISION of OIL and GAS  
1-60. San Joaquin-Sacramento Valleys and northern coastal regions, Pt. 1 of California oil and gas fields, maps and data sheets. San Francisco, p. 1-493 incl illus., Oct. 1960
- CALIFORNIA UNIVERSITY, Lawrence Radiation Laboratory  
1-60. Some potential uses of nuclear explosives in the conservation and development of water resources California, Univ., Livermore, Lawrence Radiation Lab. Rept. UCRL-6008, 24 p., May 24, 1960
- CALLAHAN, Joseph Thomas. See also BOWEN, B. M. 1-60  
1-60. (and WAIT, Robert L., and OWEN, Vaux, Jr.) Hydrogeology of limestone terrane in southwestern Georgia [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1838, Dec. 1960  
2-60. Ground water for Georgia's expanding economy Georgia Mineral Newsletter, v. 13, no. 4, p. 152-160, illus., winter 1960.
- CALLENDER, Charles See TAX, Sol 1-60
- CALVERT, Warren L. See also SHEARROW, G. G. 2-60  
1-60. Clinton, Berea, and Cambrian are principal targets of Ohio drillers Oil and Gas Jour., v. 58, no. 43, p. 168-170 incl. tables, Oct. 24, 1960.
- CALVIN, Melvin  
1-60. The origin of life on earth and elsewhere, [Pt.] 2 California, Univ., Livermore, Lawrence Radiation Lab. Rept. UCRL-9440, 41 p., illus., Oct. 19, 1960.
- CAMERON, Alexander R.  
1-60. (and SPACKMAN, William, Jr.) Revisions in the microlithotype concept of coal [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1839, Dec. 1960.
- CAMERON, Eugene Nathan  
1-60. (and others) Rotation properties of certain anisotropic ore minerals [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1839, Dec. 1960, Econ. Geology, v. 55, no. 6, p. 1335, Sept.-Oct. 1960  
2-60. Graphite, in Am. Inst. Mining, Metall., and Petroleum Engineers, Industrial minerals and rocks, p. 455-469 incl. diagram and tables, 1960  
3-60. (and WEIS, Paul Lester) Strategic graphite--a survey U. S. Geol. Survey Bull. 1082-E, p. 201-321, illus. incl. geol. maps, 1960.
- CAMERON, Harcourt Leslie. See also CANADA GEOL. SURVEY 12-60  
1-60 Frontiers of exploration in the Maritimes [abs.] Canadian Oil and Gas Industries, v. 13, no. 4, p. 102, Apr. 1960.  
2-60. Geology, glacial geology, and the soils of Nova Scotia [abs.] Royal Soc. Canada Minutes Proc., 3d ser., v. 54, App. C, p. 39, 1960.  
3-60. New field techniques in petroleum and mineral exploration [abs.] Nova Scotian Inst. Sci. Proc. 1957-58, v. 24, pt. 4, p. 416, Dec. 1960.
- CAMERON, Thomas Wright Moir  
1-60. (editor) Evolution, its science and doctrine--Symposium presented to the Royal Society of Canada in 1959. Royal Soc. Canada "Studia Varia" Ser. 4, 242 p. incl. sketch maps, diagrams, charts, and table, 1960.

## CAMERON

- 2-60. Southern intercontinental connections and the origin of the southern mammals, in *Evolution, its science and doctrine* Royal Soc Canada "Studia Varia" Ser. 4, p 78-89 incl sketch map and diagrams, 1960.
- CAMPAU, Donald Edmund. See BILLINGS GEOL. Soc 1-60, JODRY, Richard Louis 1-60, 2-60, 3-60
- CAMPBELL, A. S.  
1-60. (and FYFE, William S.) Hydroxyl ion catalysis of the hydrothermal crystallization of amorphous silica--A possible high temperature pH indicator. *Am. Mineralogist*, v. 45, nos. 3-4, p. 464-468 incl. tables, Mar.-Apr. 1960.
- CAMPBELL, Arthur Byron. See also WALLACE, R. E 1-60  
1-60. Geology and mineral deposits of the St. Regis-Superior area, Mineral County, Minnesota U. S. Geol. Survey Bull. 1082-I, p 545-612 incl. tables, and section, 1960.
- CAMPBELL, Charles Duncan  
1-60. An advanced physical geology course for high-school science teachers [Washington] *Jour. Geol. Education*, v. 8, no. 1, p. 1-5, spring 1960.
- CAMPBELL, Finley Alexander  
1-60. Differentiation trends in the Ice River complex, British Columbia [abs.] *Canadian Mining and Metall. Bull.*, v. 53, no 575, p. 200, Mar. 1960  
2-60. Nickel deposits in the Quill Creek and White River areas, Yukon: *Canadian Mining and Metall. Bull.*, v. 53, no 584, p. 953-959 incl. index map, diagrams, and tables, Dec. 1960, *Canadian Inst Mining and Metallurgy Trans.*, v 63, p. 662-668, 1960
- CAMPBELL, Frank Howard, 3d  
1-60. (and COLE, John Milton, Jr.) A diabase dike near Greenville, Augusta County, Virginia [abs.]. *Virginia Jour. Sci.*, v. 11, no. 4, p 212-213, Sept. 1960.
- CAMPBELL, Neil  
1-60. (and IRVINE, W. T.) Massive sulphide ores in British Columbia, in *Symposium on the occurrence of massive sulphide deposits in Canada* *Canadian Mining and Metall. Bull.*, v 53, no. 575, p. 153-156 incl diagrams and table, Mar. 1960, *Canadian Inst. Mining and Metallurgy Trans.*, v. 63, p. 94-97, 1960.
- CAMPBELL, Orton E.  
1-60. Why sedimentary structures show high self-potentials *World Oil*, v. 150, no. 5, p. 97-98 incl sketch maps, Apr. 1960.
- CAMPBELL, Richard Bradford See CANADA GEOL. SURVEY 32-60
- CAMPBELL, Russell Harper. See also KACHADOORIAN, Reuben 5-60  
1-60. Generalized stratigraphic section of the Lisburne group in the Point Hope A-2 quadrangle, northwestern Alaska. Art. 156 in *U. S. Geol. Survey Prof. Paper 400-B*, p. B337-B339, 1960.  
2-60. Areal geology of the Ogotoruk Creek Chariot test site and adjacent areas to the west and north, northwestern Alaska U. S. Geol. Survey Rept. TEI-753, p. 37-41, Jan. 1960.
- CAMPBELL, W. G.  
1-60. Exploration for oil and gas in the Eagle Plains Area of the Yukon Territory [abs.]. *Canadian Oil and Gas Industries*, v. 13, no. 4, p. 106, Apr. 1960.  
2-60. Oil and gas exploration, northern Yukon and North West Territories [abs.]. *Canadian Mining and Metall. Bull.*, v. 53, no. 575, p. 200, Mar 1960  
3-60. Oil and gas explorations--Eagle Plains area, Yukon Territory *Canadian Mining and Metall. Bull.*, v 53, no. 580, p. 578-582 incl sketch maps and sections, Aug 1960; *Canadian Inst. Mining and Metallurgy Trans.*, v. 63, p. 371-375, 1960.

## CANADA GEOLOGICAL SURVEY

- 4-60 Oil and gas exploration techniques in northern Yukon and Northwest Territories Oil in Canada, v 12, no. 39, p 42-44, July 25, 1960.
- CAMPBELL, William B., Jr  
1-60. Determination of rate of diffusion and activation energy of helium through polycrystalline and single crystal alumina [abs.] Georgia Acad. Sci. Bull., v. 18, nos. 1-2, p. 15, Apr. 1960.
- CAMPBELL, William P., Jr  
1-60. Appalachian gold--handbook and guide to gold placers of the Southeast Privately printed, 45 p., illus., 1960.
- CAMPEN, William Hershey. See MULLIS, Ira B. 1-60
- CANADA DEPARTMENT of MINES and TECHNICAL SURVEYS, Mineral Resources Division  
1-60. (and CANADA GEOLOGICAL SURVEY) Canada--Principal mineral areas Canada Geol. Survey Map 900A, 10th ed., scale 1 7,603,200 (1 in. to 120 mi.), 1960
- CANADA GEOLOGICAL SURVEY. See also CANADA DEPT. MINES and TECH. SURVEYS Mineral Res Div. 1-60
- 1-60. Geology, Vernon--Kamloops, Osoyoos, and Kootenay Districts, British Columbia Canada Geol Survey Map 1059A, scale 1 253,440 (1 in. to 4 mi.), with sections, geology by H M.A. Rice and A. G. Jones, also in Memoir 296, by A. G. Jones, 1959.
- 2-60 Bedrock geology and principal aquifers, Brandon, west of principal meridian, Manitoba Canada Geol. Survey Map 1066A, scale 1 253,440 (1 in. to 4 mi.), geology by E. C. Halstead, 1960, also in Memoir 300, by E. C. Halstead, 1959
- 3-60. Surficial geology, Brandon, west of principal meridian, Manitoba Canada Geol. Survey Map 1067A, scale 1 253,440 (1 in. to 4 mi.), geology by J. A. Elson, 1960, also in Memoir 300, by E. C. Halstead, 1959.
- 4-60. Surficial geology, Sturgeon Lake, west of fifth meridian, Alberta. Canada Geol. Survey Map 1077A, scale 1 253,440 (1 in. to 4 mi.), geology by E. P. Henderson, 1960, also in Memoir 303, by E. P. Henderson, 1959.
- 5-60 Surficial geology, Red Deer-Stettler, west of fourth meridian, Alberta Canada Geol Survey Map 1081A, scale 1 253,440 (1 in. to 4 mi.), with sections, geology by A. M. Stalker, 1960, also in Memoir 306, by A. M. Stalker, 1960.
- 6-60. Mining properties, Nelson (west half), Kootenay and Similkameen Districts, British Columbia Canada Geol. Survey Map 1091A, scale 1 253,440 (1 in. to 4 mi.), information obtained by H. W. Little, 1960, also in Memoir 308, by H. W. Little, 1960.
- 7-60 Geology, Atlin, Cassiar District, British Columbia Canada Geol. Survey Map 1082A, scale 1 253,440 (1 in. to 4 mi.), with sections, geology by J. D. Aitken, 1960, also in Memoir 307, by J. D. Aitken, 1959.
- 8-60. Geology, Nelson (west half), Kootenay and Similkameen Districts, British Columbia Canada Geol. Survey Map 1090A, scale 1 253,440 (1 in. to 4 mi.), compiled by H. W. Little, 1960, also in Memoir 308, by H. W. Little, 1960
- 9-60 Geology, Cape Canso--Guysborough and Richmond counties, Nova Scotia Canada Geol. Survey Map 1074A, scale 1 63,360 (1 in. to 1 mi.), with descriptive notes, geology by L. J. Weeks, 1960
- 10-60 Flin Flon-Mandy, west of principal meridian, Manitoba and Saskatchewan Canada Geol Survey Map 1078A, scale 1 12,000 (1 in. to 1,000 ft.), with descriptive notes, geology by C. H. Stockwell, 1960
- 11-60 Geology, Trout River, Island of Newfoundland Canada Geol Survey Map 1086A, scale 1 63,360 (1 in. to 1 mi.), with descriptive notes, geology by Charles H. Smith, 1960
- 12-60. Geology, Louisburg, Cape Breton county, Cape Breton Island, Nova Scotia Canada Geol. Survey Map 1088A, scale 1 63,360 (1 in. to 1 mi.), with descriptive notes, geology by L. J. Weeks and H. L. Cameron, 1960
- 13-60 Geology, St George, Charlotte county, New Brunswick Canada Geol. Survey Map 1094A, scale 1 63,360 (1 in. to 1 mi.), with descriptive notes, geology by S. C. Perry and F. J. Alcock, 1960.

## CANADA GEOLOGICAL SURVEY

- 14-60. Geology, Crackingstone, Saskatchewan. Canada Geol. Survey Map 1095A, scale 1 63,360 (1 in. to 1 mi.), with descriptive notes, geology by J. A. Fraser, 1960.
- 15-60. Geology, St. Stephen, Charlotte county, New Brunswick. Canada Geol. Survey Map 1096A, scale 1 63,360 (1 in. to 1 mi.), with descriptive notes, geology by G. S. MacKenzie and F. J. Alcock, 1960.
- 16-60. Geology, Rolling Dam, Charlotte county, New Brunswick. Canada Geol. Survey Map 1097A, scale 1 63,360 (1 in. to 1 mi.), with descriptive notes, geology by G. S. MacKenzie and F. J. Alcock, 1960.
- 17-60. Surficial geology, St. John's, Newfoundland. Canada Geol. Survey Prelim. Ser. Map 35-1959, scale 1 253,440 (1 in. to 4 mi.), with descriptive notes, geology by Eric P. Henderson, 1960.
- 18-60. Drift-thickness contours, City of Ottawa, Carleton county, Ontario. Canada Geol. Survey Prelim. Ser. Map 39-1959, scale 1 14,400 (1 in. to 1,200 ft.), compiled by J. M. Bostock, 1960.
- 19-60. Geology, Miette, west of 5th meridian, Alberta. Canada Geol. Survey Prelim. Ser. Map 40-1959, scale 1 63,360 (1 in. to 1 mi.), with sections and descriptive notes, geology by E. W. Mountjoy, 1960.
- 20-60. Geology, Big Sand Lake, Manitoba. Canada Geol. Survey Prelim. Ser. Map 45-1959, scale 1 253,440 (1 in. to 4 mi.), with descriptive notes, geology by H. A. Quinn, 1960.
- 21-60. Surficial geology, Iroquois Falls, Cochrane District, Ontario. Canada Geol. Survey Prelim. Ser. Map 46-1959, scale 1 126,720 (1 in. to 2 mi.), with descriptive notes, geology by O. L. Hughes, 1960.
- 22-60. Geology, Sandy Lake (west half), Newfoundland. Canada Geol. Survey Prelim. Ser. Map 47-1959, scale 1 253,440 (1 in. to 4 mi.), with descriptive notes, geology by D. M. Baird, 1960.
- 23-60. Surficial geology, Oyster River--Comox, Nanaimo and Sayward districts, British Columbia. Canada Geol. Survey Prelim. Ser. Map 49-1959, scale 1 63,360 (1 in. to 1 mi.), geology by J. G. Fyles, 1960.
- 24-60. Surficial geology, Aston--Nicolet, Arthabaska and Drummond counties, Quebec. Canada Geol. Survey Prelim. Ser. Map 50-1959, scale 1 63,360 (1 in. to 1 mi.), with descriptive notes, geology by N. R. Gadd, 1960.
- 25-60. Surficial geology, Sakami Lake (Fort George-Great Whale area), New Quebec. Canada Geol. Survey Prelim. Ser. Map 52-1959, scale 1 506,880 (1 in. to 8 mi.), with descriptive notes, geology by H. A. Lee, K. E. Eade, and W. W. Heywood, 1960.
- 26-60. Surficial geology, Chilliwack (west half), New Westminster and Yale districts, British Columbia. Canada Geol. Survey Prelim. Ser. Map 53-1959, scale 1 63,360 (1 in. to 1 mi.), with descriptive notes, geology by J. E. Armstrong, 1960.
- 27-60. Surficial geology, Trois-Rivières--St. Maurice, Champlain, Maskinonge and Nicolet counties, Quebec. Canada Geol. Survey Prelim. Ser. Map 54-1959, scale 1 63,360 (1 in. to 1 mi.), with descriptive notes, geology by N. R. Gadd and P. F. Karrow, 1960.
- 28-60. Geology, Hobart Island, Baffin Island, District of Franklin, Northwest Territories. Canada Geol. Survey Prelim. Ser. Map 55-1959, scale 1 253,440 (1 in. to 4 mi.), with descriptive notes, geology by R. G. Blackadar, 1960.
- 29-60. Geology, Nichicun-Kaniapiskau, New Quebec. Canada Geol. Survey Prelim. Ser. Map 56-1959, scale 1 506,880 (1 in. to 8 mi.), with descriptive notes, geology by K. E. Eade, I. M. Stevenson, S. H. Kranck, and O. L. Hughes, 1960.
- 30-60. Geology, Kechika, Cassiar district, British Columbia. Canada Geol. Survey Prelim. Ser. Map 57-1959, scale 1 253,440 (1 in. to 4 mi.), with descriptive notes, geology by H. Gabrielse, 1960.
- 31-60. Geology, Trout Lake, Kenora District, Ontario. Canada Geol. Survey Prelim. Ser. Map 58-1959, scale 1 253,440 (1 in. to 4 mi.), with descriptive notes, geology by J. A. Donaldson, 1960.
- 32-60. Geology, Quesnel Lake (west half), Cariboo district, British Columbia. Canada Geol. Survey Prelim. Ser. Map 59-1959, scale 1 253,440 (1 in. to 4 mi.), with descriptive notes, geology by Richard B. Campbell, 1960.

# CANADA GEOLOGICAL SURVEY

- 33-60 Surficial geology, Kirkland Lake, Timiskaming and Cochrane Districts, Ontario Canada Geol. Survey Prelim. Ser. Map 1-1960, scale 1 126,720 (1 in. to 2 mi.), with descriptive notes, geology by O. L. Hughes, 1960.
- 34-60. Geology, Michikamau Lake (west half), Quebec-Newfoundland Canada Geol Survey Prelim. Ser. Map 2-1960, scale 1 253,440 (1 in. to 4 mi.), with descriptive notes, geology by J. A. Donaldson and H. R. Wynne-Edwards, 1960.
- 35-60. Geology, Wakwekobi Lake, Algoma District, Ontario Canada Geol. Survey Prelim. Ser. Map 3-1960, scale 1 63,360 (1 in. to 1 mi.), with descriptive notes, geology by M. J. Frarey, 1960
- 36-60 Geology, Phelps Lake, Saskatchewan Canada Geol. Survey Prelim. Ser. Map 5-1960, scale 1 253,440 (1 in. to 4 mi.), with descriptive notes, geology by L. P. Tremblay, 1960.
- 37-60. Geology, Tulsequah, Cassiar district, British Columbia Canada Geol Survey Prelim. Ser. Map 6-1960, scale 1 253,440 (1 in. to 4 mi.), with descriptive notes, geology by J. G. Souther, 1960
- 38-60. Geology, Quiet Lake, Yukon Territory Canada Geol. Survey Prelim. Ser. Map 7-1960, scale 1 253,440 (1 in. to 4 mi.), with descriptive notes, geology by J. O. Wheeler, L. H. Green, and J. A. Roddick, 1960.
- 39-60. Geology, Finlayson Lake, Yukon Territory Canada Geol. Survey Prelim. Ser. Map 8-1960, scale 1 253,440 (1 in. to 4 mi.), with descriptive notes, geology by J. O. Wheeler, L. H. Green, and J. A. Roddick, 1960
- 40-60. Geology, Wolf Lake, Yukon Territory Canada Geol. Survey Prelim. Ser. Map 10-1960, scale 1 253,440 (1 in. to 4 mi.), with descriptive notes, geology by W. H. Poole, J. A. Roddick, and L. H. Green, 1960.
- 41-60 Geology, Fernie (west half), Kootenay district, British Columbia Canada Geol. Survey Prelim. Ser. Map 11-1960, scale 1 126,720 (1 in. to 2 mi.), with descriptive notes, geology by G. B. Leech, R. L. Langenheim, Jr., and H. M. A. Rice, 1960.
- 42-60. North-central District of Mackenzie, Northwest Territories Canada Geol. Survey Prelim. Ser. Map 18-1960, geol. map, 2 sheets, scale 1 506,880 (1 in. to 8 mi.), with descriptive notes, geology by B. G. Craig, W. L. Davison, J. A. Fraser, R. J. Fulton, W. W. Heywood, and T. N. Irvine, 1960.
- 43-60. Geology, Island Lake, Manitoba-Ontario Canada Geol. Survey Prelim. Ser. Map 26-1960, scale 1 253,440 (1 in. to 4 mi.), with descriptive notes, geology by H. A. Quinn, 1960
- 44-60. Surficial geology, Courtenay--Comox, Nelson, Nanaimo and New-castle districts, Vancouver Island, British Columbia Canada Geol. Survey Prelim. Ser. Map, scale 1 63,360 (1 in. to 1 mi.), with section, geology by J. G. Fyles, 1960.
- 45-60. Geology, King's Point, Newfoundland Canada Geol. Survey Prelim. Ser. Map 35-1960, scale 1 63,360 (1 in. to 1 mi.), with descriptive notes, geology by E. R. W. Neale, W. A. Nash, and G. M. Innes, 1960
- 46-60. Surficial geology, Mount Stewart--Kings and Queens counties, Prince Edward Island Canada Geol Survey Prelim. Ser. Map 36-1960, scale 1 63,360 (1 in. to 1 mi.), with descriptive notes, geology by G. H. Crowl, 1960
- 47-60. Surficial geology, Souris, Kings county, Prince Edward Island Canada Geol Survey Prelim. Ser. Map 37-1960, scale 1 63,360 (1 in. to 1 mi.), with descriptive notes, geology by G. H. Crowl, 1960
- 48-60. Geology, St. Ann's--Victoria and Inverness counties, Cape Breton Island, Nova Scotia Canada Geol. Survey Prelim. Ser. Map 38-1960, scale 1 63,360 (1 in. to 1 mi.), with descriptive notes, geology by D. G. Kelley, 1960
- 49-60. Aeromagnetic series, index to map sheets Map, sheets 1 and 7 [1960]
- 50-60. Alberta and northeastern British Columbia, showing oil and gas fields and oil and gas discoveries Canada Geol Survey Map 1039A, 7th ed., scale 1 1,267,200 (1 in. to 20 mi.), 1960, originally published 1952
- 51-60. Aeromagnetic map series, scale 1 63,360 (1 in. to 1 mi.), Geophysics Papers published in 1960 as follows  
230, Cape George, Antigonish and Inverness counties, Nova Scotia, revised, originally published 1955.

# CANADA GEOLOGICAL SURVEY

- 240, Antigonish, Antigonish and Guysborough counties, Nova Scotia, revised, originally published 1955.
- 592, Musquash--St. John, Charlotte and Kings counties, New Brunswick, revised, originally published 1957
- 596, St. George, Charlotte county, New Brunswick, revised, originally published 1957.
- 610, Meteghan, Digby and Yarmouth counties, Nova Scotia, revised; originally published 1957.
- 611, Church Point, Digby county, Nova Scotia, revised, originally published 1957
- 759, Ecum Secum, Halifax and Guysborough counties, Nova Scotia.
- 762, Hopewell--Pictou, Colchester, Guysborough and Halifax counties, Nova Scotia
- 763, New Glasgow, Pictou county, Nova Scotia.
- 764, Harcourt--Kent, Westmorland and Queens counties, New Brunswick.
- 765, Grand Manan, Charlotte county, New Brunswick.
- 767, Salisbury--Westmorland, Queens, Kings and Albert counties, New Brunswick.
- 768, Rogersville, Kent and Northumberland counties, New Brunswick.
- 769, Petitcodiac--Kings, Westmorland and Albert counties, New Brunswick
- 770, Granville Ferry, Annapolis county, Nova Scotia.
- 771, Digby, Digby and Annapolis counties, Nova Scotia.
- 772, Centreville, Digby county, Nova Scotia.
- 773, Campobello, Charlotte county, New Brunswick
- 774, Sambro, Halifax county, Nova Scotia.
- 775, Cape Spencer, Saint John county, New Brunswick.
- 776, Loch Lomond, Saint John and Kings counties, New Brunswick.
- 777, Salmon River, Saint John county, New Brunswick
- 778, Waterford--Kings, Saint John and Albert counties, New Brunswick.
- 779, Owls Head, Halifax county, Nova Scotia.
- 780, Tangier, Halifax county, Nova Scotia.
- 781, Upper Musquodoboit--Halifax, Colchester and Guysborough counties, Nova Scotia.
- 782, Bridgetown, Annapolis county, Nova Scotia
- 783, Margaretsville, Annapolis and Kings counties, Nova Scotia.
- 784, Chezzetcook, Halifax county, Nova Scotia.
- 785, Musquodoboit, Halifax and Hants counties, Nova Scotia.
- 786, Shubenacadie--Hants, Colchester and Halifax counties, Nova Scotia.
- 787, Truro--Colchester, Hants and Pictou counties, Nova Scotia.
- 788, Tatamagouche--Colchester, Pictou and Cumberland counties, Nova Scotia.
- 789, Halifax, Halifax county, Nova Scotia.
- 790, Uniacke, Halifax and Hants counties, Nova Scotia
- 791, Kennetcook, Hants county, Nova Scotia.
- 792, Bass River--Hants, Colchester and Cumberland counties, Nova Scotia.
- 793, Oxford, Cumberland and Colchester counties, Nova Scotia.
- 794, Wolfville, Kings and Hants counties, Nova Scotia.
- 795, Parrsboro--Cumberland, Colchester and Kings counties, Nova Scotia.
- 796, Springhill, Cumberland and Colchester counties, Nova Scotia.
- 797, Amherst, Westmorland and Cumberland counties, Nova Scotia--New Brunswick.
- 798, New Germany--Lunenburg, Annapolis, Kings and Queens counties, Nova Scotia
- 799, Gasperau Lake--Kings, Annapolis and Lunenburg counties, Nova Scotia.
- 800, Berwick, Kings and Annapolis counties, Nova Scotia
- 801, Cape Chignecto, Cumberland county, Nova Scotia.
- 802, Alma--Cumberland, Westmorland and Albert counties, Nova Scotia--New Brunswick.
- 803, Hillsborough, Albert and Westmorland counties, New Brunswick.
- 804, Kouchibouguac, Northumberland and Kent counties, New Brunswick.
- 805, Chatham, Northumberland county, New Brunswick.
- 806, Tabusintac River, Gloucester and Northumberland counties, New Brunswick.
- 807, Burnsville, Gloucester county, New Brunswick.

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- 808, Grande-Anse, Gloucester county, New Brunswick.
- 809, Moncton, Westmorland and Albert counties, New Brunswick
- 810, Buctouche, Kent and Westmorland counties, New Brunswick.
- 811, Richibucto, Kent county, New Brunswick.
- 812, Point Sapin, Kent and Northumberland counties, New Brunswick.
- 813, Point Escuminac, Northumberland and Kent counties, New Brunswick.
- 814, Wishart Point, Northumberland and Gloucester counties, New Brunswick.
- 815, Tracadie, Gloucester county, New Brunswick.
- 816, Caraquet, Gloucester county, New Brunswick
- 817, Port Elgin, Westmorland county, New Brunswick.
- 818, Cape Egmont, Prince county, Prince Edward Island
- 819, O'Leary, Prince county, Prince Edward Island
- 820, Tignish, Prince county, Prince Edward Island
- 821, North Point, Prince county, Prince Edward Island
- 824, Miscou Island, Gloucester county, New Brunswick.
- 825, Pugwash, Cumberland county, Nova Scotia.
- 826, Cape Tormentine--Westmorland, Prince and Queens counties, New Brunswick-Prince Edward Island
- 827, Summerside, Prince and Queens counties, Prince Edward Island.
- 828, Malpeque, Prince and Queens counties, Prince Edward Island.
- 830, Malagash--Cumberland, Pictou and Colchester counties, Nova Scotia.
- 831, Charlottetown, Queens county, Prince Edward Island.
- 832, Rustico, Queens county, Prince Edward Island
- 835, Pictou Island--Queens, Kings and Pictou counties, Prince Edward Island-Nova Scotia.
- 836, Montague, Kings and Queens counties, Prince Edward Island
- 837, Mount Stewart, Kings and Queens counties, Prince Edward Island.
- 840, Merigomish, Pictou and Antigonish counties, Nova Scotia
- 841, Malignant Cove, Antigonish and Kings counties, Nova Scotia-Prince Edward Island
- 842, Boughton Island, Kings county, Prince Edward Island.
- 843, Souris, Kings county, Prince Edward Island.
- 846, Port Hood, Inverness county, Nova Scotia.
- 850, Wegg Lake, Kenora District, Ontario
- 851, Gullrock Lake, Kenora District, Ontario
- 852, Red Lake, Kenora District, Ontario.
- 853, Nungesser and Coli Lakes, Kenora District, Ontario
- 854, Kirkness Lake, Kenora District, Ontario
- 855, Berens Lake, Kenora District, Ontario.
- 856, McInnes Lake, Kenora District, Ontario.
- 857, Critchell Lake, Kenora District, Ontario
- 858, Kennedy Lake, Kenora District, Ontario.
- 859, Favourable Lake, Kenora District, Ontario
- 860, Goldpines, Kenora District, Ontario.
- 861, Bruce Lake, Kenora District, Ontario.
- 862, Trout Lake, Kenora District, Ontario.
- 863, Henfrey Lake, Kenora District, Ontario.
- 864, Windfall Creeks, Kenora District, Ontario.
- 865, Nechigona Lake, Kenora District, Ontario.
- 866, Sampson Lake, Kenora District, Ontario.
- 867, Margot Lake, Kenora District, Ontario
- 868, Whiteloon Lake, Kenora District, Ontario.
- 869, Northwind Lake, Kenora District, Ontario.
- 870, Aerofoil Lake, Kenora District, Ontario.
- 871, Bluffy Lake, Kenora District, Ontario.
- 872, Confederation Lake, Kenora District, Ontario.
- 873, Shabumeni Lake, Kenora District, Ontario.
- 874, Mamakwash Lake, Kenora District, Ontario.
- 875, Conover Lake, Kenora District, Ontario
- 876, MacDowell Lake, Kenora District, Ontario.
- 877, Hewitt Lake, Kenora District, Ontario.
- 878, North Spirit Lake, Kenora District, Ontario.
- 879, Niska Lake, Kenora District, Ontario
- 880, Wapesi Lake, Kenora District, Ontario.

# CANADA GEOLOGICAL SURVEY

- 881, Papaongo Lake, Kenora District, Ontario.
- 882, Jeanette Lake, Kenora District, Ontario
- 883, Birch Lake, Kenora District, Ontario.
- 884, Carillon Lake, Kenora District, Ontario.
- 885, Wigwasikak Lake, Kenora District, Ontario.
- 886, Nabimina Lake, Kenora District, Ontario.
- 887, Laughton Lake, Kenora District, Ontario.
- 888, McCoy Lake, Kenora District, Ontario.
- 889, Petownkip Lake, Kenora District, Ontario.
- 890, Anenimus River, Kenora District, Ontario.
- 891, Otatakan Lake, Kenora District, Ontario.
- 892, Wesleyan Lake, Kenora District, Ontario
- 893, Zionz Lake, Kenora District, Ontario.
- 894, Cat Lake, Kenora District, Ontario.
- 895, Whitestone Lake, Kenora District, Ontario.
- 896, McCauley Lake, Kenora District, Ontario.
- 897, Shnibone Lake, Kenora District, Ontario.
- 898, Windigo Lake, Kenora District, Ontario.
- 899, Nikip Lake, Kenora District, Ontario.
- 900, St. Raphael Lake, Kenora District, Ontario.
- 901, Lindbergh Lake, Kenora District, Ontario.
- 902, Blackstone Lake, Kenora District, Ontario.
- 903, Obaskaka Lake, Kenora District, Ontario.
- 904, Gitche River, Kenora District, Ontario
- 905, Upturnedroot Lake, Kenora District, Ontario.
- 906, Hinton Lake, Kenora District, Ontario.
- 907, Stirland Lake, Kenora District, Ontario.
- 908, Yoyoy Lake, Kenora District, Ontario
- 909, Weagamow Lake, Kenora District, Ontario.
- 910, De Lesseps Lake, Thunder Bay and Kenora Districts, Ontario
- 911, Miniss Lake, Thunder Bay and Kenora Districts, Ontario.
- 912, Lake St. Joseph West, Kenora and Thunder Bay Districts, Ontario.
- 913, Kawinogans Lake, Kenora District, Ontario
- 914, Dobie River, Kenora District, Ontario.
- 915, Obabika Lake, Kenora District, Ontario
- 916, Kecheokagan Lake, Kenora District, Ontario
- 917, Mawley Lake, Kenora District, Ontario.
- 918, Donnelly River, Kenora District, Ontario.
- 919, North Caribou Lake, Kenora District, Ontario.
- 920, Neverfreeze Lake, Thunder Bay District, Ontario.
- 921, McCrea Lake, Thunder Bay District, Ontario.
- 922, Osnaburgh House, Kenora and Thunder Bay Districts, Ontario.
- 923, Ochig Lake, Kenora District, Ontario.
- 924, Tarp Lake, Kenora District, Ontario.
- 925, Mamiegowish Lake, Kenora District, Ontario.
- 926, Menako Lakes, Kenora District, Ontario.
- 927, Forester Lake, Kenora District, Ontario
- 928, Opapimiskan Lake, Kenora District, Ontario.
- 929, Wachusk Lake, Kenora District, Ontario.
- 930, Wabakimi Lake, Thunder Bay District, Ontario.
- 931, Burntrock Lake, Thunder Bay District, Ontario
- 932, Achapi Lake, Thunder Bay and Kenora Districts, Ontario.
- 933, Seach Lake, Kenora and Thunder Bay Districts, Ontario
- 934, Collishaw Lake, Kenora District, Ontario.
- 935, Lysander Lake, Kenora District, Ontario.
- 936, Dillen Lake, Kenora District, Ontario.
- 937, Neawagank Lake, Kenora District, Ontario.
- 938, Obabigan Lake, Kenora District, Ontario.
- 939, Big Beaver House, Kenora District, Ontario.
- 940, Goldsborough Lake, Thunder Bay District, Ontario.
- 941, Whitewater Lake, Thunder Bay District, Ontario.
- 942, Greenmantle Lake, Thunder Bay District, Ontario.
- 943, Pruner Lake, Thunder Bay and Kenora Districts, Ontario
- 944, Crerar Lake, Kenora and Thunder Bay Districts, Ontario.
- 945, Jervis Bay Lake, Kenora District, Ontario



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- 946, Totogan Lake, Kenora District, Ontario.
- 947, Wigwascence Lake, Kenora District, Ontario.
- 948, Michikenis Lake, Kenora District, Ontario.
- 949, Wunnummin Lake, Kenora District, Ontario
- 950, Linklater Lake, Thunder Bay District, Ontario.
- 951, Whiteclay Lake, Thunder Bay District, Ontario
- 952, Kilbarry Lake, Thunder Bay District, Ontario.
- 953, Grace Lake, Thunder Bay and Kenora Districts, Ontario.
- 954, Miminiska Lake, Kenora and Thunder Bay Districts, Ontario.
- 955, Ozhiski Lake, Kenora District, Ontario.
- 956, Pattle Lake, Kenora District, Ontario.
- 957, Eyes Lake, Kenora District, Ontario.
- 958, Sheridan Lake, Kenora District, Ontario.
- 959, Sennett Lake, Kenora District, Ontario.
- 960, Mojkitt Lake, Thunder Bay District, Ontario
- 961, D'Orsonnens Lake, Thunder Bay District, Ontario
- 962, Sim Lake, Thunder Bay District, Ontario.
- 963, Kawitos Lake, Thunder Bay and Kenora Districts, Ontario.
- 964, Opkeigen Lake, Kenora and Thunder Bay Districts, Ontario.
- 965, Machawaian Lake, Kenora District, Ontario.
- 966, Kabania Lake, Kenora District, Ontario
- 967, Nankika Lake, Kenora District, Ontario.
- 968, Sagiminnis Lake, Kenora District, Ontario.
- 969, Wapikopa Lake, Kenora District, Ontario.
- 970, Makoki Lake, Thunder Bay District, Ontario.
- 971, Mahamo Lake, Thunder Bay District, Ontario.
- 972, Kellow Lake, Thunder Bay and Kenora Districts, Ontario
- 973, Triangular Lake, Kenora and Thunder Bay Districts, Ontario.
- 974, Fort Hope, Kenora District, Ontario.
- 975, Stark Lake, Kenora District, Ontario.
- 976, Lansdowne House, Kenora District, Ontario.
- 977, Wapitotem Lake, Kenora District, Ontario
- 978, Mameigwess Lake, Kenora District, Ontario.
- 979, Kanuchuan Lake, Kenora District, Ontario.
- 980, Kapikotongwa Lake, Thunder Bay District, Ontario.
- 981, Ogoki Lake, Thunder Bay district, Ontario.
- 982, Harvey Lake, Thunder Bay and Kenora Districts, Ontario
- 983, Makokibatan Lake, Kenora and Thunder Bay Districts, Ontario.
- 984, McIntyre Lake, Kenora District, Ontario.
- 985, Norton Lake, Kenora District, Ontario
- 986, Windsor Lake, Kenora District, Ontario.
- 987, Owen Lake, Kenora District, Ontario.
- 988, Pulham Lake, Kenora District, Ontario
- 989, Winisk Lake, Kenora District, Ontario
- 990, Percy Lake, Thunder Bay and Cochrane Districts, Ontario.
- 991, Patience Lake, Thunder Bay and Cochrane Districts, Ontario.
- 992, Dusey Lake, Thunder Bay and Cochrane Districts, Ontario
- 993, Kagiami Falls, Thunder Bay and Cochrane Districts, Ontario.
- 994, Maxey Lake--Kenora, Cochrane and Thunder Bay Districts, Ontario.
- 995, Wabassi Falls, Kenora District, Ontario.
- 996, Shibley Lake, Kenora District, Ontario.
- 997, Kitchie Lake, Kenora District, Ontario.
- 998, Goods Lake, Kenora District, Ontario.
- 999, Prime Lake, Kenora District, Ontario.
- 1000, Louella Falls, Cochrane District, Ontario.
- 1001, La Rose Lake, Cochrane District, Ontario.
- 1002, Eby Falls, Cochrane District, Ontario
- 1003, Big Canoe Lake, Cochrane District, Ontario.
- 1004, Nottik Island, Cochrane and Kenora Districts, Ontario.
- 1005, Sebert Lake, Kenora and Cochrane Districts, Ontario.
- 1006, Pym Island, Kenora District, Ontario.
- 1007, Fishtrap Lake, Kenora District, Ontario.
- 1008, Symons Lake, Kenora District, Ontario.
- 1009, Greig Lake, Kenora District, Ontario.
- 1010, Margaree, Inverness county, Nova Scotia.

## CANADA GEOLOGICAL SURVEY

- 1011, Chéticamp, Inverness county, Nova Scotia.  
1013, Pleasant Bay, Inverness and Victoria counties, Nova Scotia.  
1014, Dingwall, Victoria county, Nova Scotia.  
1025, Chéticamp River, Inverness and Victoria counties, Nova Scotia.  
1026, Lake Ainslie, Inverness and Victoria counties, Nova Scotia.  
52-60. Bay of Fundy Canada Geol. Survey Geophysics Papers 760-761, 766, scale 1 63,360 (1 in. to 1 mi.), 1960.  
53-60. Gulf of St Lawrence Canada Geol. Survey Geophysics Papers 822-823, 829, 834, 838-839, 844-845, 847-849, 1012, scale 1 63,360 (1 in. to 1 mi.), Papers 1015-1024, scale 1 126,720 (1 in. to 2 mi.), 1960

## CANADIAN GEOGRAPHICAL JOURNAL

- 1-60 Valleys in the bottom of Lake Superior Canadian Geog Jour, v 60, no. 3, p. 112 incl. sketch map and diagram, Mar 1960

## CANADIAN MINING JOURNAL

- 1-60. Eldorado Beaverlodge Operation [Northwest Territories]--[Pt.] 2, Geology Canadian Mining Jour., v. 81, no. 6, p. 84-98 incl. geol. sketch maps, sections, and illus., June 1960.

## CANADIAN SOCIETY of EXPLORATION GEOPHYSICISTS

- 1-60 The role of geophysics in the search for oil in Western Canada [abs.] Canadian Oil and Gas Industries, v 13, no 4, p. 108, Apr 1960.

## CANNEY, Frank Cogswell

- 1-60 (and HAWKINS, Daniel Ballou) Field application of ion-exchange resins in hydrogeochemical prospecting Art 43 in U. S. Geol. Survey Prof Paper 400-B, p. B89-B90 incl. diagram, 1960.  
2-60 Geochemical study of soil contamination in the Coeur d'Alene district, Shoshone County, Idaho Am. Inst. Mining, Metall., and Petroleum Engineers Trans. 1959, v. 214, p. 205-210 incl. sketch maps, diagram, and tables, 1960.

## CANNON, Helen Leighton

- 1-60. Botanical prospecting for ore deposits Science, v 132, no 3427, p. 591-598 incl. tables and illus., Sept 2, 1960.  
2-60 Geochemistry of sandstones and related vegetation in the Yellow Cat area of the Thompson district, Grand County, Utah Art 46 in U. S. Geol. Survey Prof Paper 400-B, p. B96-B97 incl. tables, 1960.  
3-60. The development of botanical methods of prospecting for uranium on the Colorado Plateau U. S. Geol. Survey Bull. 1085-A, p 1-50 incl. index map, also geol. and botanical maps and illus., 1960

## CANNON, Peter. See PHILLIPS, Victor Arthur 1-60

## CANNON, Walter F

- 1-60. The Uniformitarian-Catastrophist debate Isis, v. 51, pt. 1, no. 163, p. 38-55, Mar 1960.

## CANTWELL, Thomas See also MADDEN, T. R. 1-60

- 1-60 (and MADDEN, Theodore R) Preliminary report on crustal magnetotelluric measurements Jour. Geophys. Research, v. 65, no. 12, p 4202-4205 incl. diagrams and table, Dec 1960.  
2-60. (and HAWKES, Herbert Edwin, Jr., and RASMUSSEN, N. C.) Nuclear detector for beryllium minerals Am. Inst. Mining, Metall., and Petroleum Engineers Trans. 1959, v. 214, p 938-940 incl. diagram and tables, 1960

## CAPLAN, William M.

- 1-60. Geology of natural gas in Arkansas Valley, Arkansas [abs.] Am. Assoc. Petroleum Geologists Bull., v. 44, no. 1, p 126-127, Jan. 1960.  
2-60. Subsurface geology of pre-Everton rocks in northern Arkansas Arkansas Geol. and Conserv. Comm. Inf. Circ. 21, 17 p., maps and tables, 1960.

## CARBONELL CÓRDOBA, Manuel. See PESZUERA VELÁZQUEZ, Rubén 1-60

# CAROLINA GEOLOGICAL SOCIETY

## CARBONNEAU, Côme

- 1-60. La faille Delson et ses ramifications en aval du pont Mercier [abs.] Assoc. Canadienne-Française Av. Sci. Annales, v 26, p. 110-111, 1960

## CARD, Kenneth D. See THOMSON, James Edgar 5-60, 6-60

## CARDEA, Harry S

- 1-60. A geologic study of the Terra Alta gas field [abs.] West Virginia Acad. Sci. Proc. 1959, v. 31, p. 53-54, Dec. 1960.

## CARDER, Dean Samuel

- 1-60. (and CLOUD, William K.) Ground motions generated by underground nuclear explosions World Conf. Earthquake Eng., 2d, Tokyo and Kyoto, Japan, July 11-18, 1960, Proc., v. 3, p. 1609-1631 incl. sketch map, diagrams and tables, with discussion by C. F. Richter and reply by W. K. Cloud, Tokyo, Sci. Council Japan, 1960.

## CARDWELL, George Thomas

- 1-60 (and ROLLO, J. R.) Interim report on ground-water conditions between Baton Rouge and New Orleans, Louisiana Louisiana Geol. Survey Water Resources Pamph. 9, 44 p., illus., Aug. 1960.

## CAREY, Samuel Warren

- 1-60. The strength of the earth's crust New York Acad. Sci. Trans., ser. 2, v. 22, no. 5, p. 303-312, illus., Mar. 1960

## CARLISLE, Donald

- 1-60. (and ZECK, Wayne A.) Pillow breccias in the Vancouver volcanic rocks and their origin [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 2053, Dec. 1960

## CARLSON, Clarence Gustav

- 1-60 (and BAKKEN, Wallace Eugene, and KUME, Jack) Subsurface geology and development of petroleum in North Dakota Compass, v. 37, no. 2, p. 123-143 incl. index and paleogeol. map, sections, chart, diagrams, and tables, Jan. 1960, reprinted as North Dakota Geol. Survey Bull. 34, 1960  
2-60. Stratigraphy of the Winnipeg and Deadwood formations in North Dakota North Dakota Geol. Survey Bull. 35, 149 p., illus., 1960

## CARLSON, Hugh Douglas

- 1-60. Field study of the Milbank granite [abs.] South Dakota Acad. Sci. Proc. 1959, v. 38, p. 58, Jan. 1960.

## CARLSTON, Charles William

- 1-60 (and THATCHER, Leland L., and RHODEHAMEL, Edward Charles) Tritium as a hydrologic tool--The Wharton Tract study [N. J.] Internat. Assoc. Sci. Hydrology (Gentbrugge, Belgium) Pub. 52, p. 503-512 incl. sketch maps, section, diagrams, table, and French abs., 1960.

## CARMAN, Joel Ernest

- 1-60 The stratigraphy of the Devonian Holland Quarry shale of Ohio Fieldiana Geology, v. 14, no. 1, p. 1-5, illus., June 20, 1960

## CARNAHAN, Vervyle May

- 1-60. A slab of variscite Gems and Minerals, no. 270, p. 38, 40, 80, 81, Mar. 1960  
2-60 George Letchworth English [1864-1944] Gems and Minerals, no. 272, p. 69-71, May 1960  
3-60. The treasure of the Himalaya Mine [California] Gems and Minerals, no. 278, p. 21-25, 55-57 incl. illus., Nov. 1960

## CAROLINA GEOLOGICAL SOCIETY

- 1-60. (by BRYANT, Bruce Hazelton, and REED, John Calvin, Jr.) Field trip guidebook, road log of the Grandfather Mountain area, North Carolina, annual meeting, October 8-9, 1960 21 p., illus. incl. geol. maps, 1960.

## CAROZZI

CAROZZI, Albert Victor. See also GRIM, R. E. 2-60

- 1-60. (and HUNT, John B.) Fore-reef petrography of the Silurian Richvalley reef, Indiana Jour. Sed. Petrology, v. 30, no. 2, p. 209-217 incl diagrams and table, June 1960
- 2-60. Teaching Alpine structural geology in French [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1840, Dec. 1960
- 3-60. Microscopic sedimentary petrography New York, N Y, John Wiley and Sons, 485 p. incl. diagrams and illus., 1960.
- 4-60. Microscopic arched flow structures and spiral structures in sedimentary rocks Inst. Natl. Genevois Bull., tome 61, p. 111-130, illus., Geneva, Switzerland, 1960

CARPEN, Thaddeus Richard

- 1-60. Southeastern Colorado, Chap 14 in Mineral resources of Colorado, 1st sequel Denver, Colorado Mineral Resources Board, p. 505, 531-560 incl index maps and correlation chart, 1960

CARPENTER, Alden B.

- 1-60. (and FOSTER, Philip C.) Mineralogy of the Cape Rosier mine, Hancock County, Maine Rocks and Minerals, v. 35, nos. 11-12, p. 559-560, Nov.-Dec 1960.

CARPENTER, Frank Morton

- 1-60. Studies on North American Carboniferous insects--[Pt.] 1, The Proctodonata Psyche, v. 67, no. 4, p. 98-110 incl. diagrams and illus., Dec. 1960

CARPENTER, Gene C.

- 1-60. (and SCHMIDT, Ronald Grover) Insoluble residue as a correlation tool in the Ordovician Cynthiana formation [abs.] Geol Soc America Bull, v. 71, no. 12, pt. 2, p. 2014, Dec. 1960

CARPENTER, Gerald Leon

- 1-60. (and SMITH, Howard) Oil development and production in Indiana during 1959 Indiana Geol Survey Mineral Economics Ser., no 6, 18 p., illus, Oct. 1960.

CARPENTER, Lee Graydon

- 1-60. (and GARRETT, Donald Everett) Tungsten in Searles Lake [California]. Am Inst. Mining, Metall, and Petroleum Engineers Trans. 1959, v. 214, p. 301-303 incl sketch maps and table, 1960.

CARPENTER, Robert Halstead

- 1-60. A resume of hydrothermal alteration and ore deposition at Questa, New Mexico, U.S.A. Internat Geol. Cong., 21st, Copenhagen, 1960, Rept., pt 16, p. 79-86 incl. index map and illus., 1960.
- 2-60. Molybdenum, Chap 4 in Mineral resources of Colorado, 1st sequel Denver, Colorado Mineral Resources Board, p. 315-325 incl geol. sketch maps, sections, and diagram, 1960.

CARR, John M.

- 1-60. Porphyries, breccias, and copper mineralization in Highland Valley, British Columbia [abs.] Canadian Mining Jour., v. 81, no 4, p. 73, Apr. 1960.
- 2-60. Porphyries, breccias, and copper mineralization in Highland Valley, B. C. Canadian Mining Jour., v. 81, no. 11, p. 71-73 incl. sketch maps and section, Nov 1960.

CARR, Michael H. See also TUREKIAN, Karl K. 1-60

- 1-60. The bedrock geology of the Naugatuck quadrangle, with map Connecticut State Geol and Nat. History Survey Quad Rept. 9, 25 p., illus., incl. geol. map, 1960.

CARRIKER, Melbourne Romaine

- 1-60. Thurlow Christian Nelson [1890-1960], marine biologist Science, v 132, no 3443, p. 1875-1876 incl portrait, Dec 23, 1960

CARRILLO BRAVO, José See MURRAY, Grover Elmer 2-60

CARRILLO MARTINEZ, Pedro

- 1-60. Estudio geológico de los campos petroleros de San Andres, Hallazgo y Gran Morelos, Edo. de Veracruz Asoc Mexicana Geólogos Petroleros Bol , v 12, nos 1-2, p 1-73, illus , Feb. 1960.

CARRINGTON, Richard

- 1-60. A biography of the sea--the story of the world ocean, its animal and plant populations, and its influence on human history New York, N Y., Basic Books, Inc , 286 p., illus , 1960.

CARROLL, Dorothy. See also AUSTIN, S. R. 1-60

- 1-60. (and POMMER, Alfred Michael) Acidic properties of Fithian "illite" Art 198 in U. S Geol. Survey Prof Paper 400-B, p B434-B436 incl. diagram and table, 1960  
 2-60 (and POMMER, Alfred Michael) Acidic properties of some clay minerals [abs] Am Ceramic Soc. Bull , v 39, no 4, p 239, Apr 1960  
 3-60 Ilmenite alteration under reducing conditions in unconsolidated sediments Econ Geology, v 55, no 3, p 618-619, May 1960 (Discussion of paper by J W Gruner, v. 54, p. 1315-1316, 1959 )  
 4-60 (and STARKEY, Harry C.) Effect of sea water on clay minerals, in Swineford, Ada, ed., Clays and clay minerals Natl Conf Clays and Clay Minerals, 7th, Washington, D C., Oct 1958, Proc., p 80-101 incl. diagrams and tables, 1960. (Issued as Internat Earth Science Ser Mon 5 of Pergamon Press, New York.)  
 5-60. Carbon dioxide and alumina in the potentiometric titration of H-montmorillonite Art. 199 in U. S Geol. Survey Prof Paper 400-B, p B436-B438 incl diagram and tables, 1960.

CARSOLA, Alfred James

- 1-60. (and others) Bathymetry of the Beaufort Sea [Arctic Ocean][abs.] Oil in Canada, v 12, no. 16, p 32, Feb. 15, 1960

CARSON, Charles E.

- 1-60 (and HUSSEY, Keith Morgan) Hydrodynamics in three Arctic lakes [Alaska] Jour. Geology, v 68, no. 6, p 585-600 incl diagrams, sketch maps, and tables, illus , Nov 1960  
 2-60. (and HUSSEY, Keith Morgan, and ROY, Chalmer John, and O'SULLIVAN, John Blandford) Basin morphology and sediment distribution of an oriented Arctic lake [abs.] Geol Soc America Bull , v 71, no. 12, pt 2, p. 1840, Dec 1960.

CARSON, David John Temple

- 1-60. Geology of Mount Washington, Vancouver Island, British Columbia [abs] Canadian Mining Jour , v 81, no. 10, p 133, Oct 1960

CARSS, Brian Williams. See LANGENHEIM, R L., Jr 2-60

CARTER, Joel A.

- 1-60 (and DEAN, John Aurie) Determination of traces of certain rare earths in uranium compounds by ion exchange and spectrography Appl. Spectroscopy, v 14, no. 2, p 50-52, tables, 1960.

CARTER, R L See GIDDENS, Joel 1-60

CARTER, William Douglas. See WEIR, Gordon Whitney 5-60

CARVER, J A See PROTZMAN, Don L 1-60

CARY, Allen Stuart

- 1-60. Rockfill dams [abs.] Geol. Soc America Bull , v. 71, no. 12, pt. 2, p 2053, Dec. 1960

CASAGRANDE, Arthur See also TERZAGHI, Karl 2-60

- 1-60 An unsolved problem of embankment stability on soft ground Cong. Panam Mecánica Suelos y Cimentaciones, 1st, México, D. F., Sept. 7-12,

CASAGRANDE

1959, Mem , v 2, p. 721-746 incl sketch map, diagrams, illus., and Spanish abs. and conclusions, 1960

CASE, James Boyce See also JOESTING, H. R 1-60

1-60. A comparison of photogrammetric methods in glacier mapping [abs.] Dissert. Abs , v 20, no 7, p. 2755, Jan 1960

2-60 Glacier mapping in the western United States--Final report Ohio State Univ. Research Found Rept. 943, 11 p., illus , Jan. 1960

CASSIDY, M. M. See also MANKIN, C J. 1-60

1-60. (and MANKIN, Charles John) Chlorox used in preparation of black shale for clay mineral analysis Oklahoma Geology Notes, v. 20, no. 11, p 275-281, illus., Nov. 1960

CASSIDY, William A.

1-60. (and HERZOG, Leonard Frederick, 2d) Rb/Sr and K/Ca in tektites by X-ray fluorescence [abs.] Jour. Geophys Research, v. 65, no. 8, p 2480, Aug. 1960

CASTER, Kenneth Edward

1-60. (and POPE, John Keyler) Morphology and affinities of Eocrinus, an archetype of the Echinodermata [abs] Geol Soc America Bull., v 71, no 12, pt. 2, p. 1840-1841, Dec 1960.

CASTILLÓN BRACHO, Manuel See CONTRERAS VALÁZQUEZ, Hugo 1-60

CASTLE, J. E.

1-60. (and GILLSON, Joseph Lincoln) Feldspar, nepheline syenite, and aplite, in Am. Inst. Mining, Metall., and Petroleum Engineers, Industrial minerals and rocks, p. 339-362 incl. maps, diagrams, and tables, 1960.

CASTRO, Honorato de

1-60. Traducción de un artículo sobre isostacia publicado en una revista inglesa que trata sobre "The figure of the earth and isostasy" Asoc. Mexicana Geofísicos Explor Bol , v 1, no 4, p 329-341, illus , Oct.-Dec 1960

CATANZARO, Edward John

1-60. (and KULP, John Laurence) U-Pb ages in the Little Belt Mountains, Montana [abs] Geol. Soc America Bull., v. 71, no. 12, pt 2, p. 1841, Dec. 1960.

CATE, Addison Smith See LYTLE, William Stuckley 2-60

CATE, Robert B., Jr.

1-60 Can petroleum be of pedogenic origin? Am Assoc Petroleum Geologists Bull , v. 44, no. 4, p. 423-432, Apr 1960.

CATER, Frederick William, Jr

1-60. Chilled contacts and volcanic phenomena associated with the Cloudy Pass batholith, Washington Art 213 in U. S. Geol Survey Prof. Paper 400-B, p. B471-B473 incl geol. map, 1960.

CATHERINO, Henry A

1-60 (and MEITES, Louis) Polarographic determination of manganese Anal. Chim Acta (Amsterdam), v. 23, no. 1, p. 57-65 incl diagram and tables, July 1960.

CATTERMOLE, John Marcus

1-60. Geology of the Bearden quadrangle, Tennessee U. S. Geol Survey Geol. Quad Map GQ-126, scale 1 24,000 (1 in to 2,000 ft ), with section and text, 1960

CAUSEY, Lawson V See HARRIS, Hobart Byron 1-60, WARMAN, J C. 1-60

- CAVANAUGH, R J.  
1-60 (and KNUTSON, Carroll Field) Laboratory technique for plastic saturation of porous rocks Am Assoc Petroleum Geologists Bull., v 44, no. 5, p. 628-630 incl diagram and illus , May 1960.
- CAZEAU, Charles J.  
1-60. Cross-bedding directions in Upper Triassic sandstones of north-eastern New Mexico Am. Assoc. Petroleum Geologists Bull , v. 44, no 5, p 638-640 incl. index maps and diagram, May 1960  
2-60 Cross-bedding directions in Upper Triassic sandstones of west Texas: Jour Sed Petrology, v 30, no. 3, p. 459-465 incl sketch maps and diagrams, Sept 1960
- CEFOLA, Michael. See HAMWAY, Paulette 1-60
- CHAFFEE, Robert Gibson See MORRILL, Philip 2-60
- CHAIGNEAU, Marcel See FABRE, René 1-60
- CHALMERS, Robert A. See MURDOCH, Joseph 1-60
- CHABAI, Albert J. See VORTMAN, Luke J. 1-60
- CHAMBERLAIN, Joseph Annandale  
1-60 Structural history of the Beaverlodge area Econ. Geology, v 55, no 3, p 617-618, May 1960, reply to discussion by P A. Hill, v 54, no. 8, p 1577, 1959  
2-60. On the uranium possibilities of the southern Interior Plains of Canada Canada Geol Survey Paper 59-16, 12 p., illus., 1960
- CHAMBLISS, G. F  
1-60. Devonian lithology identification utilizing porosity logs, in Geology of the Paradox Basin fold and fault belt Four Corners Geol Soc., 3d Field Conf , 1960, [Guidebook] p 141-145, illus., 1960.
- CHAMNESS, Ralph Simon  
1-60 The Eagle Ford group, in Cretaceous stratigraphy of the Grand and Black Prairies, east-central Texas Baylor Geol Soc , Field Conf., Apr. 1960, Guidebook, p 105-109 incl sketch maps, 1960
- CHAMPLIN, J B.F.  
1-60. (and DUNNING, H. N.) A geochemical investigation of the Athabasca bituminous sands Econ. Geology, v 55, no. 4, p. 797-804 incl diagrams and tables, June-July 1960  
2-60 Geochemical identity of produced crude oils [abs ] Geol Soc. America Bull , v 71, no 12, pt 2, p 1841-1842, Dec 1960
- CHANDLER, Henry Poor  
1-60 Tripoli, in Am. Inst. Mining, Metall., and Petroleum Engineers, Industrial minerals and rocks, p 881-887 incl. tables, 1960.
- CHANDLER, John Charles See BREGER, Irving A 1-60, 2-60
- CHAO, Edward Ching-Te. See also FLEISCHER, Michael, 3-60, MILTON, Charles, 1-60, 3-60  
1-60. A device for viewing x-ray precession photographs in three dimensions Am Mineralogist, v 45, nos 7-8, p. 890-892 incl. illus., July-Aug. 1960  
2-60 (and SHOEMAKER, Eugene Merle, and MADSEN, Beth Marie) First natural occurrence of coesite [Arizona] Science, v. 132, no 3421, p 220-222 incl. illus , July 22, 1960.  
3-60. (and DAVIES, William Edward) Authigenic rhodochrosite spherules from Gardner Creek, Kentucky Art. 204 in U S Geol Survey Prof Paper 400-B, p B446-B447 incl illus , 1960

## CHAO

- 4-60. (and FLEISCHER, Michael) Abundance of zirconium in igneous rocks  
Internat. Geol. Cong., 21st, Copenhagen, 1960, Rept., pt. 1, p. 106-131 incl.  
diagrams and tables, 1960
- 5-60 Natural coesite--an unexpected geological discovery Foote Prints,  
v. 32, no. 1, p. 25-32, illus., 1960.

CHAPMAN, Carleton Abramson. See DONATI, G. R. 1-60

CHAPMAN, Dean R.

- 1-60. Recent re-entry research and the cosmic origin of tektites Nature  
(London), v. 188, no. 4748, p. 353-355, illus., Oct. 29, 1960

CHAPMAN, Robert Mills. See also HUMMEL, C. L. 1-60

- 1-60 (and SHACKLETTE, Hansford T.) Geochemical exploration in Alaska  
Art. 49 in U. S. Geol. Survey Prof. Paper 400-B, p. B104-B107 incl. index  
map and tables, 1960
- 2-60. (and SABLE, Edward G.) Geology of the Utukok-Corwin region, north-  
western Alaska--Exploration of Naval Petroleum Reserve No. 4 and adja-  
cent areas, northern Alaska, 1944-53, Pt. 3, Areal geology U. S. Geol.  
Survey Prof. Paper 303-C, p. 47-167 incl. plates and maps, 1960

CHAPPELL, Fred

- 1-60 Pyrophyllite, in Am. Inst. Mining, Metall., and Petroleum Engineers,  
Industrial minerals and rocks, p. 681-686 incl. diagram and tables, 1960

CHARLESWORTH, Henry Alexander Kaye

- 1-60 Some observations on the origin of the earth's crust Edmonton Geol.  
Soc. Quart., v. 4, no. 2, p. 1-7, illus. [June 1960].
- 2-60. (and REMINGTON, D. B.) Precambrian rocks in the vicinity of  
Jasper, Alberta, in Rock Lake Edmonton Geol. Soc., 2d Ann. Field Trip,  
Aug. 1960, Guidebook, p. 11-18, geol. maps, 1960

CHARLESWORTH, Lloyd James, Jr. See LANDES, Kenneth Knight 2-60

CHARTERS, A. C.

- 1-60 High-speed impact Sci. Am., v. 203, no. 4, p. 128-131, 135-140 incl.  
diagram and illus., Oct. 1960

CHASE, A. B.

- 1-60 (and LEFEVER, Robert Allen) Birefringence of synthetic garnets  
Am. Mineralogist, v. 45, nos. 9-10, p. 1126-1129, Sept.-Oct. 1960.

CHASE, Armand B. See ROSENFELD, John L. 2-60

CHAVE, Keith Ernest

- 1-60 Evidence on history of sea water from chemistry of deeper subsurface  
waters of ancient basins Am. Assoc. Petroleum Geologists Bull., v. 44,  
no. 3, p. 357-370 incl. diagrams and tables, Mar. 1960.
- 2-60 Carbonate skeletons to limestones--Problems New York Acad. Sci.  
Trans., ser. 2, v. 23, no. 1, p. 14-24, illus., Nov. 1960

CHAYES, Felix. See also MEGAW, H. D. 1-60, ZIES, E. G. 1-60

- 1-60. Occurrence of normative sodium metasilicate in Washington's tables  
Geol. Soc. America Bull., v. 71, no. 4, p. 503-504, Apr. 1960, discussion of  
paper by O. F. Tuttle and N. L. Bowen, Geol. Soc. America Mem. 74, 153  
p., 1958, reply by O. F. Tuttle with title, Occurrence of normative sodium  
metasilicate in Washington's tables--A reply, v. 71, no. 4, p. 505, Apr. 1960.
- 2-60. On correlation between variables of constant sum Jour. Geophys. Re-  
search, v. 65, no. 12, p. 4185-4193 incl. tables, Dec. 1960

CHEESMAN, Ralph Leslie

- 1-60. (and others) Summary report of geological surveys conducted in the  
Precambrian area of Saskatchewan, 1960 Regina, Saskatchewan Dept.  
Mineral Resources, Mines Br., Geology Div., 21 p., index map [1960]. Con-  
tains individual papers which are cited separately.



- 2-60. Geological survey work in Saskatchewan, 1959 Canadian Mining Jour., v 81, no 4, p. 71-73 incl index map, Apr. 1960.
- CHEETHAM, Alan Herbert  
 1-60. Time, migration, and continental drift Am Assoc. Petroleum Geologists Bull., v 44, no. 2, p 244-251 incl sketch maps, chart, and tables, Feb 1960.  
 2-60. Rimosocella, new genus of cheilostome Bryozoa [Georgia and North Carolina] Micropaleontology, v 6, no 3, p 287-289, illus., July 1960.
- CHEN, C. S.  
 1-60 (and GOODELL, Horace Grant) Petrology of lower Pennsylvanian Sewanee sandstone, Lookout Mountain, Alabama and Georgia [abs.] Geol. Soc. America Bull , v 71, no 12, pt. 2, p. 2014, Dec. 1960
- CHENEY, Theodore Albert  
 1-60 (and CWIEK, Mitchell S , and HUSSEY, Keith Morgan, and RABBEIN, Ellis L ) Education and training in photo interpretation, Chap 16 in Am Soc Photogrammetry, Manual of photographic interpretation Washington, D C , p 817-834 incl illus., 1960
- CHENOWETH, Philip Andrew  
 1-60. Ouachita Mountains do have oil and gas potential World Oil, v 151, no. 2, p 94-95, 99-100 incl. index map and section, Aug 1, 1960  
 2-60 A Canyon reef in southern Oklahoma Oklahoma Geology Notes, v 20, no 1, p. 3-6, illus., Jan. 1960  
 3-60. Starfish impressions from the Hilltop shale Oklahoma Geology Notes, v. 20, no 2, p. 35-36, illus , Feb. 1960
- CHENOWETH, William Lyman  
 1-60. (and COOLEY, Maurice E.) Pleistocene cinder dunes near Cameron, Arizona Plateau, v 33, no. 1, p. 14-16, illus., July 1960
- CHERITON, C G  
 1-60. Copper-skarn mineralization in northern British Columbia [!New Brunswick] Canadian Mining Jour , v. 81, no 4, p 99-101 incl. index and sketch maps, Apr. 1960
- CHERNOFF, C N  
 1-60. Lithology of the Interlake group in Saskatchewan [abs ] Canadian Mining Jour., v 81, no. 2, p 226, Feb. 1960
- CHESTERMAN, Charles Wesley  
 1-60 Intrusive ultrabasic rocks and their metamorphic relationships at Leech Lake Mountain, Mendocino County, California Internat. Geol. Cong , 21st, Copenhagen, 1960, Rept., pt. 13, p 208-215 incl index and geol. sketch maps and illus , 1960.
- CHILINGAR, George Varos See also ADAMS, J E. 1-60, ASCHENBRENNER, B C. 2-60  
 1-60. (and KNIGHT, Larry) Relationship between pressure and moisture content of kaolinite, illite, and montmorillonite clays Am Assoc Petroleum Geologists Bull , v. 44, no. 1, p 101-106 incl. diagrams and illus , Jan 1960  
 2-60 Notes on classification of carbonate rocks on basis of chemical composition Jour Sed Petrology, v 30, no 1, p 157-158 incl. tables, Mar. 1960  
 3-60. (and KNIGHT, Larry) Relationship between overburden pressure and moisture content of silicic acid and gumghatti Internat. Geol. Cong , 21st, Copenhagen, 1960, Rept , pt 18, p 384-388 incl diagrams, 1960  
 4-60. Ca/Mg ratios of calcareous sediments as a function of depth and distance from shore Compass, v. 37, no 3, p. 182-186 incl sketch map and diagrams, Mar 1960  
 5-60 El método potencial de oxidación-reducción en la exploración de yacimientos petrolíferos (una revisión) Asoc Mexicana Geólogos Petroleros Bol , v 12, nos 11-12, p 323-339 incl. diagrams, Nov -Dec. 1960

## CHINNERY

CHINNERY, Michael Alistair

- 1-60. Some physical aspects of earthquake mechanism Jour Geophys. Research, v 65, no. 11, p 3852-3854, Nov. 1960
- 2-60 Deformation of the earth's crust around surface faults [abs.] Jour. Geophys. Research, v. 65, no 8, p. 2482, Aug. 1960.

CHISHOLM, Edward O.

- 1-60. (and FERGUSON, Stewart A.) Township of Balmer, District of Kenora (Patricia Portion), Ontario Ontario Dept. Mines [Prelim. Map] P.47, scale 1 12,000 (1 in. to 1,000 ft.), [Mar. 8, 1960].

CHODOS, Arthur A. See ENGEL, Albert Edward John 2-60, STEVENS, Rollin Elbert 1-60, 5-60

CHOMBART, Louis G.

- 1-60. Well logs in carbonate reservoirs Geophysics, v 25, no. 4, p. 779-853 incl. diagrams and illus., Aug. 1960.

CHOQUETTE, Philip Wheeler

- 1-60 Petrology and structure of the Cockeysville formation (pre-Silurian) near Baltimore, Maryland Geol. Soc. America Bull., v 71, no 7, p. 1027-1052 incl. sketch maps, diagrams, and tables, illus., July 1960

CHOU, Tsung-Lien. See VANONI, Vito August 2-60

CHOWDHURY, A.

- 1-60. (and DAS SARMA, B) Improved rapid determination of nickel in soils and laterites Anal. Chemistry, v 32, no. 7, p. 820-821 incl. table, June 1960.

CHOWN, Edward Holton MacPhail

- 1-60. Preliminary report on the Papachouésati River area, Mistassini Territory, Quebec Quebec Dept. Mines Geol. Surveys Br. Prelim. Rept. 415, 9 p., geol. map, 1960, also French ed.

CHOWN, R G See REX, Robert Walter 1-60

CHRIST, Charles L. See also CLARK, J. R 6-60, 7-60

- 1-60. Crystal chemistry and systematic classification of hydrated borate minerals Am Mineralogist, v 45, nos 3-4, p. 334-340 incl. tables, Mar-Apr 1960
- 2-60. (and CLARK, Joan Robinson) Crystal chemical studies of some uranyl oxide hydrates Am. Mineralogist, v 45, nos. 9-10, p 1026-1061 incl. diagram, tables, and illus., Sept.-Oct. 1960.
- 3-60. (and CLARK, Joan Robinson) X-ray crystallography and crystal chemistry of gowerite,  $\text{CaO} \cdot 3\text{B}_2\text{O}_3 \cdot 5\text{H}_2\text{O}$  Am. Mineralogist, v 45, nos. 1-2, p 230-234 incl. table, Jan.-Feb 1960.
- 4-60 (and CLARK, Joan Robinson) Studies of borate minerals--[Pt] 9, The crystal structure of meyerhofferite,  $\text{CaB}_3\text{O}_3(\text{OH})_5 \cdot \text{H}_2\text{O}$  Zeitschr. Kristallographie (Frankfurt am Main, Germany), Band 114, Heft 5-6, p 321-342 incl. diagrams and tables, with German abs., Dec. 1960.

CHRISTENSEN, David E. See BECKER, Henry Floyd 1-60

CHRISTIANSEN, Earl Alfred

- 1-60. Geology and ground-water resources of the Qu'Appelle area, Saskatchewan Saskatchewan Research Council Geology Div Rept. 1, 53 p. incl. index and sketch maps, diagrams, tables, and illus., also geol. and hydrol. maps, 1960.

CHRISTIE, John McDougall. See also BLATT, Harvey 1-60

- 1-60. (and HEARD, Hugh C., and LaMORI, Phillip N) Experimental deformation of quartz single crystals at 27-30 kb confining pressure and 24° C. [abs.] Geol. Soc. America Bull., v. 71, no 12, pt 2, p 1842, Dec. 1960

## CHRISTOPHER, James Ellis

- 1-60. Geology of the Ohio shore of Lake Erie between Fairport and the Pennsylvania border [abs ] Dissert. Abs , v 20, no 9, p 3692, Mar 1960.

## CHRONIC, Byron John, Jr

- 1-60 Late Paleozoic paleontology in the northern Paradox Basin [Colorado Plateau], in Geology of the Paradox Basin fold and fault belt Four Corners Geol Soc , 3d Field Conf , 1960, [Guidebook] p. 80-85, illus., 1960

## CHRZANOWSKI, Peter

- 1-60 (and COOK, Richard Kaufman) Radiation of sound by earthquake waves [abs ] Jour Geophys Research, v 65, no 8, p 2482, Aug. 1960

## CHU, Ting Y

- 1-60 (and DAVIDSON, Donald Thomas, and SHEELER, John B ) Mathematical analysis of a layer extraction method for separating clay-size material from soils, in Davidson, D T., Methods for testing engineering soils Iowa State Univ Sci. and Technology, Iowa Eng Expt. Sta Bull 192 (Iowa State Highway Comm , Iowa Highway Research Board Bull. 21), p. 49-68 incl. diagrams and tables, reprinted, Dec 14, 1960, originally published 1954

## CHU, T L See DAVIDSON, Donald Thomas 2-60

## CHU, TING Ye See WILLIAMS, Wayne W. 1-60

## CHUBB, Lawrence John

- 1-60. The Antillean Cretaceous geosyncline Caribbean Geol Conf , 2d, Mayagüez, Puerto Rico, Jan. 4-9, 1959, Trans , p 17-26 incl geol. sketch map and diagram, 1960, reprinted as Jamaica Geol. Survey Pub. 64, 1960  
 2-60. Geosynclines and epicontinental seas--Pt 1 Geonotes, v. 3, pt 1 (Jamaica Geol. Survey Pub 60), p. 2-8, illus , Apr. 1960, Pt 2, Geonotes, v. 3, pt 2, (Jamaica Geol. Survey Pub 62) p. 53-61, illus., July 1960.  
 3-60. Correlation of the Jamaican Cretaceous Geonotes, v 3, pt 3, (Jamaica Geol Survey Pub 63) p. 85-97 incl tables, Oct. 1, 1960  
 4-60. Geological jargon--a plea for plain English Geonotes, v. 3, pt. 2, (Jamaica Geol Survey Pub. 62) p 67-69, July 1960  
 5-60. The Cretaceous and Tertiary question in Jamaica Geonotes, v. 3, pt 1 (Jamaica Geol Survey Pub. 60), p 46-47, Apr 1960  
 6-60 Tenth birthday Geonotes, v. 2, pt 4 (Jamaica Geol. Survey Pub 59), p. 135-139, 1959 [Jan 1960]  
 7-60 Centenary Geonotes, v 2, pt. 4 (Jamaica Geol Survey Pub. 59), p. 145-146, 1959 [Jan 1960].

## CHURKIN, Michael, Jr

- 1-60. (and LANGENHEIM, Ralph Louis, Jr ) Silurian strata of the Klamath Mountains, California Am Jour Sci., v. 258, no. 4, p 258-273 incl geol sketch map, sections, and illus., Apr 1960  
 2-60. Early Paleozoic sedimentation in central Idaho [abs ] Geol Soc. America Bull , v. 71, no 12, pt. 2, p 1843-1844, Dec. 1960

## CIFELLI, Richard

- 1-60 Structure and nature of the wall of Streblus Beccarii (Linné) [abs.] Geol Soc America Bull , v 71, no 12, pt 2, p 1843, Dec 1960

## CLABAUGH, Stephen Edmund See DASCH, E. J 1-60

## CLAIRE, C. N See WHITTEN, Charles Arthur 2-60

## CLANTON, Uel S.

- 1-60 X-ray diffraction furnace Texas Jour Sci., v. 12, nos. 3-4, p. 131-137 incl. diagrams and illus., Oct 1960

## CLARK, C. Burton

- 1-60. (and McDOWELL, J Spotts) Refractories, in Am. Inst Mining, Metall., and Petroleum Engineers, Industrial minerals and rocks, p. 699-712 incl. tables, 1960.

## CLARK

CLARK, Dana Kent. See GRAHAM, Joseph John 1-60

CLARK, David Leigh. See also SCHELL, W. W 1-60

- 1-60 Parapuzosia in the north Texas Cretaceous Jour. Paleontology, v. 34, no. 2, p 233-236 incl. diagrams, illus., Mar. 1960
- 2-60 (and BECKER, Joseph H.) Upper Devonian correlations in western Utah and eastern Nevada Geol. Soc. America Bull., v. 71, no. 11, p 1661-1674 incl. index map, sections, and table, illus., Nov 1960
- 3-60 Triassic biostratigraphy of eastern Nevada, in Geology of east central Nevada Intermountain Assoc. Petroleum Geologists, 11th Ann. Field Conf., 1960 Guidebook, p 122-125 incl. sketch map and diagram, 1960.

CLARK, E. W. See McJANNET, G. S. 1-60, 2-60

CLARK, Edward Lee. See ALLEN, Thomas 1-60

CLARK, Grady Wayne See KOPP, Otto Charles 1-60

CLARK, Joan Robinson. See also CHRIST, C. L. 2-60, 3-60, 4-60

- 1-60 X-ray study of alteration in the uranium mineral wyartite Am. Mineralogist, v. 45, nos. 1-2, p. 200-208 incl. tables and illus., Jan.-Feb 1960.
- 2-60. X-ray crystallography of larderellite,  $\text{NH}_4\text{B}_5\text{O}_6(\text{OH})_4$  Am. Mineralogist, v. 45, nos. 9-10, p. 1087-1093 incl. tables, Sept.-Oct. 1960.
- 3-60. (and MROSE, Mary Emma) Veatchite and p-veatchite Am. Mineralogist, v. 45, nos. 11-12, p. 1221-1229 incl. diagrams and tables, Nov.-Dec. 1960.
- 4-60. (and APPLEMAN, Daniel Everett) Crystal structure refinement of reedmergnerite, the boron analog of albite Science, v. 132, no. 3442, p 1837-1838 incl. tables, Dec 16, 1960
- 5-60. (and APPLEMAN, Daniel Everett) Crystal structure of reedmergnerite, the boron analogue of albite [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p 1843-1844, Dec 1960.
- 6-60. (and CHRIST, Charles Louis) The crystal structure of  $\text{CaB}_3\text{O}_5(\text{OH})$  [abs.] Acta Cryst., v. 13, pt. 12, p. 1018-1019, Dec. 1960.
- 7-60. (and CHRIST, Charles Louis) Hauptman-Karle phase determination applied to meyerhofferite Zeitschr. Kristallographie (Frankfurt am Main, Germany), Band 114, Heft 5-6, p. 343-354 incl. diagram and tables, with German abs., Dec 1960.

CLARK, John

- 1-60. Field interpretation of post-Silurian beds [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p 2032-2033, Dec. 1960

CLARK, Karl Adolf

- 1-60. Permeabilities of the Athabasca oil sands [Alberta] Canadian Mining and Metall. Bull., v. 53, no. 576, p. 239-244 incl. diagrams, tables, and illus., Apr. 1960, Canadian Inst. Mining and Metallurgy Trans., v. 63, p 151-156, 1960.
- 2-60. Permeability of the Athabasca oil sands [Alberta] Oil in Canada, v. 12, no. 28, p. 24-28, illus., May 9, 1960

CLARK, Lloyd A.

- 1-60 The Fe-As-S system--Phase relations and applications Econ. Geology, v. 55, no. 7, p. 1345-1381 incl. diagrams, tables, and illus., Nov 1960, v. 55, no. 8, p. 1631-1652 incl. diagram and tables, Dec. 1960
- 2-60. Arsenopyrite As/S ratio as a possible geobarometer [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1844, Dec 1960

CLARK, Lorin Delbert

- 1-60. Evidence for two stages of deformation in the western Sierra Nevada metamorphic belt, California Art. 148 in U. S. Geol. Survey Prof. Paper 400-B, p. B316-B318 incl. geol. sketch map and illus., 1960
- 2-60 Foothills fault system, western Sierra Nevada, California Geol. Soc. America Bull., v. 71, no. 4, p. 483-496, geol. map, sections, and illus., Apr. 1960.

- CLARK, Norman J  
1-60. Elements of petroleum reservoirs Dallas, Tex., Soc. Petroleum Engineers, Am. Inst. Mining, Metall, and Petroleum Engineers, Inc , 243 p., illus., 1960.
- CLARK, Robey Harned  
1-60. (and CLARKE, W. J.) A plastic universal stage for student use Am Mineralogist, v. 45, nos 1-2, p 224-228 incl. illus., Jan -Feb 1960.
- CLARK, Sydney Procter, Jr  
1-60. Kyanite revisited [abs ] Jour Geophys. Research, v. 65, no. 8, p. 2482, Aug 1960
- CLARK, Thomas Henry. See also JONES, I W 1-60, OSBORNE, F. F. 3-60  
1-60 (and STEARN, Colin William) The geological evolution of North America--A regional approach to historical geology New York, N. Y., Ronald Press Co., 434 p , illus. incl. geol. maps, 1960  
2-60. (and STEVENSON, John Sinclair) Authigenic biotite in the Utica shale at L'Epiphanie, Quebec Geol. Assoc Canada Proc , v 12, p 97-104, illus , Dec. 1960.
- CLARK, Wilfred Edward Le Gros  
1-60 The antecedents of man--An introduction to the evolution of the primates Chicago, Ill , Quad Books, 374 p., illus , 1960
- CLARKE, Arthur C.  
1-60 The challenge of the sea. 1st ed , New York, N. Y., Holt, Rinehart and Winston, 167 p , illus., 1960.
- CLARKE, Charles Edward See REXROAD, Carl Buckner 1-60
- CLARKE, James Wood  
1-60. (and VITALIANO, Dorothy Brauneck, and NEUSCHEL, Virginia Smith, and others) Geophysical abstracts, 180-183, 1960, and Index U. S. Geol. Survey Bull 1116, 695 p , 1960-1961
- CLARKE, P. J.  
1-60. Preliminary report on Normanville area, Saguenay electoral district, Quebec Dept Mines Geol Surveys Br Prelim.Rept.413, 14 p , geol map, 1960, also French ed.
- CLARKE, R T. See WILSON, Leonard Richard 4-60, 5-60
- CLARKE, Roy Slayton, Jr See SWITZER, George S. 2-60
- CLARKE, William James. See CLARK, Robey Harned 1-60, STAINFORTH, Robert Masterman 1-60
- CLAUSEN, C. F.  
1-60. Cement materials, in Am. Inst. Mining, Metall., and Petroleum Engineers, Industrial minerals and rocks, p. 203-231 incl. map, diagrams, tables, and illus., 1960
- CLAUSEN, Jens  
1-60. (and HIESEY, William M ) The balance between coherence and variation in evolution Natl Acad. Sci. Proc., v 46, no. 4, p 494-506 incl diagrams and table, Apr 1960
- CLEBSCH, Alfred, Jr.  
1-60. Ground water in the Oak Spring formation and hydrologic effects of underground nuclear explosions at the Nevada Test Site U S. Geol. Survey Rept. TEI-759, 29 p. incl geol. sketch map, diagrams, and tables, Apr 1960.
- CLEMENS, William A., Jr  
1-60. Stratigraphy of the type Lance formation [Wyoming] Internat. Geol. Cong., 21st, Copenhagen, 1960, Rept , pt 5, p 7-13, 1960

## CLEMENT

CLEMENT, Belva D. See ROCKY MTN. ASSOC. GEOLOGISTS 2-60

CLEMONS, Elizabeth

1-60. Rocks and the world around you New York, N. Y , Coward-McCann, 109 p., illus , 1960.

CLEVELAND, George Barrie

1-60. Geology of the Otay bentonite deposit, San Diego, California California Div. Mines Spec. Rept. 64, 16 p., illus incl. geol. map, 1960

CLEVEN, Merrill L. See JORDAN, James N. 1-60

CLIFFORD, Tom N.

1-60. Spessartine and magnesium biotite in cuticle-bearing rocks from Mill Hollow, Alstead Township, New Hampshire, U.S.A.--A contribution to the petrology of metamorphosed manganiferous sediments Neues Jahrb. Mineralogie Abh. (Stuttgart, Germany), Band 94, Festband Ramdohr, 2. Hälfte, p. 1369-1400 incl. geol. sketch map, section, diagrams, tables, and German abs., July 1960.

CLINE, Lewis Manning

1-60. Stratigraphy of the late Paleozoic rocks of the Ouachita Mountains, Oklahoma Oklahoma Geol. Survey Bull. 85, 113 p., illus incl. geol. maps, Aug. 1960

CLINTON, Nelson James. See KELLEY, Vincent Cooper 3-60

CLOKE, Paul LeRoy

1-60. Quartz solubility in potassium hydroxide solutions under elevated pressures and temperatures, with some geological applications [abs.]. Massachusetts Inst. Technology Abs. Theses 1953-54, p. 92, 1960.

CLOOS, Ernst

1-60. (and WISE, Donald Underkofler) The Martic Problem and the New Providence Railroad Cut, in Some tectonic and structural problems of the Appalachian Piedmont along the Susquehanna River Pennsylvania Geologists, 25th Ann. Field Conf., Oct. 1960, Guidebook, p. 39-48, 51-52, sketch maps, 1960.

CLOUD, Preston Ercelle, Jr.

1-60. Gas as a sedimentary and diagenetic agent Am Jour. Sci., v. 258-A (Bradley Volume), p 35-45 incl. diagram, illus., 1960.

CLOUD, William K. See also CARDER, D. S. 1-60

1-60. Earthquake recorded by low-cost instrument [abs.] Geol. Soc. America Bull., v. 71, no 12, pt. 2, p. 2054, Dec. 1960

COATS, Robert Roy See also POWERS, H. A. 3-60

1-60. Method of minimizing damage to refractometers from the use of arsenic tribromide liquids Am Mineralogist, v. 45, nos. 7-8, p 903-904, July-Aug. 1960.

COBB, Edward Huntington

1-60. (compiler) Chromite, cobalt, nickel, and platinum occurrences in Alaska U. S. Geol. Survey Mineral Inv Resource Map MR-8, scale 1 2,500,000 (about 1 in. to 39 mi.), 1960

2-60 (compiler) Copper, lead, and zinc occurrences in Alaska U. S. Geol. Survey Mineral Inv. Resource Map MR-9, scale 1 2,500,000 (about 1 in. to 39 mi ), 1960.

3-60. (compiler) Molybdenum, tin, and tungsten occurrences in Alaska U S Geol. Survey Mineral Inv Resource Map MR-10, scale 1 2,500,000 (about 1 in to 39 mi ), 1960.

4-60 (compiler) Antimony, bismuth, and mercury occurrences in Alaska U. S Geol Survey Mineral Inv Resource Map MR-11, scale 1 2,500,000 (about 1 in. to 39 mi.), 1960.

- COBB, Howard Lewis  
1-60 Operations research--A tool in oil exploration. Geophysics, v. 25, no. 5, p. 1009-1022 incl. diagrams, Oct. 1960.
- COBB, James Curtis  
1-60. (and KULP, John Laurence) U-Pb age of Chattanooga shale Geol. Soc. America Bull., v. 71, no. 2, p. 223-224 incl. table, Feb 1960
- COBBAN, William Aubrey See REESIDE, John B., Jr 1-60, ZAPP, Alfred Dexter 1-60
- COCKE, J M See SUTHERLAND, Patrick Kennedy 1-60
- COE, A V Robertson. See MARET, Raymond Eldon 1-60
- COGAN, Edward  
1-60 Separation of cobalt from its alloys and ores with 1-nitroso-2-naphthol Anal Chemistry, v. 32, no. 8, p. 973-975 incl. diagrams and tables, July 1960.
- COHEE, George Vincent  
1-60 Series subdivisions of Permian system. Am Assoc. Petroleum Geologists Bull., v. 44, no. 9, p. 1578-1579, Sept. 1960
- COHEN, Alvin Jerome  
1-60 Germanium content of tektites and other natural glasses--Implications concerning the origin of tektites Internat Geol Cong., 21st, Copenhagen, 1960, Rept., pt. 1, p. 30-39 incl. tables, 1960.  
2-60 (and ANANIA, John) Germanium and gallium contents of tektites, impact glasses, meteorites, and related materials [abs.] Jour Geophys. Research, v. 65, no. 8, p. 2482-2483 incl. table, Aug 1960  
3-60 Substitutional and interstitial aluminum impurity in quartz, structure and color interrelationships, in Symposium on defect structure of quartz and glassy silica Physics and Chemistry Solids, v. 13, nos. 3-4, p. 321-325, illus., June 1960.  
4-60 Trace element relationships and terrestrial origin of tektites Nature (London), v. 188, no. 4751, p. 653-654, tables, Nov. 19, 1960.
- COHEN, Charles I. See DONATH, F A 1-60
- COHEN, Howard M.  
1-60 (and ROY, Rustum) Extent of mutual solubility in the crystalline alkali halides and AgCl at temperatures well below the solidus [abs.] Am Ceramic Soc Bull., v. 39, no. 4, p. 185, Apr 1960.
- COHEN, Stephen  
1-60 The 1960 regional stratigraphy field trip of Indiana University Compass, v. 38, no. 1, p. 39-43 incl. index map, Nov 1960
- COHENOUR, Robert Eugene  
1-60. Resume of Precambrian geology in the vicinity of the overthrust belt of western Wyoming, in Overthrust belt of southwestern Wyoming and adjacent areas Wyoming Geol. Assoc., 15th Ann. Field Conf., 1960, Guidebook, p. 90-97 incl. sketch map, 1960
- COHN, Byron E. See BOESE, Robert W 1-60
- COKER, A. E  
1-60. Mineralization of lower Mississippian chert nodules collected in north-west Georgia [abs.] Georgia Acad Sci Bull., v. 18, nos. 1-2, p. 13, Apr. 1960
- COLBERT, Edwin Harris  
1-60. Roy Chapman Andrews [1884-1960], explorer Science, v. 132, no. 3418, p. 21-22 incl. portrait, July 1, 1960.

## COLBERT

- 2-60. Triassic rocks and fossils, in Rio Chama Country New Mexico Geol. Soc., 11th Field Conf., Oct. 1960, Guidebook, p. 55-62, illus., 1960.  
3-60. A new Triassic procolophonid from Pennsylvania Am. Mus. Novitates, no 2022, 19 p incl tables and illus., Nov 29, 1960

## COLBORNE, G L.

- 1-60 The Clut Lakes Area (East Half), in Cheesman, R. L., Summary report of geological surveys conducted in the Precambrian area of Saskatchewan, 1960 Regina, Saskatchewan Dept. Mineral Resources, Mines Br., Geology Div., p 10-11 [1960]

## COLBY, Charles Carlyle

- 1-60 Wellington Downing Jones, 1886-1957 Assoc Am Geographers Annals, v. 50, no 1, p 51-54 incl. portrait, Mar. 1960  
2-60. Vernor Clifford Finch [1883-1959] Geog Rev., v 50, no. 3, p 443-445, July 1960.

## COLBY, William E

- 1-60. (editor) John Muir's studies in the Sierra [California] San Francisco, Calif., Sierra Club, 103 p., illus., 1960  
2-60. Walter Leroy Huber, 1883-1960 Sierra Club Bull, v 45, no 9, p 81-84 incl portrait, Dec. 1960

## COLE, David L. See CRESSMAN, Luther Sheeleigh 1-60

## COLE, John Milton, Jr See CAMPBELL, Frank Howard, 3d 1-60

## COLE, J. Y See MOORE, George William 2-60

## COLE, Julian Francis

- 1-60. Toyah gas field, Reeves County, Texas, in Geology of the Delaware basin West Texas Geol Soc, Field Trip, Sept -Oct 1960, Guidebook, p 60-65 incl. index, structure contour, and isopach maps, 1960

## COLE, Sandford Stoddard

- 1-60. Manganese ore, in Am Inst. Mining, Metall, and Petroleum Engineers, Industrial minerals and rocks, p 545-549 incl tables, 1960.

## COLE, Willard A See ANNEAR, R C. 1-60

## COLE, William Storrs

- 1-60. Revision of Helicostegina, Helicolepidina, and Lepidocyclina (Polylepidina) Cushman Found. Foram. Research Contr., v. 11, pt 2, p 57-63, illus., Apr. 1960.  
2-60 The genus Camerina Bulls Am Paleontology, v 41, no 190, p 186-205, illus., Oct 7, 1960.  
3-60. Variability in embryonic chambers of Lepidocyclina Micropaleontology, v. 6, no 2, p 133-144, illus., Apr 1960  
4-60 Problems of the geographic and stratigraphic distribution of certain Tertiary larger Foraminifera Tohoku Univ. Sci. Repts, 2d ser., Geology, Spec. V, no 4, p. 9-18, table, May 1960

## COLEMAN, Neil L

- 1-60 Laboratory experiments in selective grain transportation Chicago, Ill., Univ Chicago, 49 p, illus., June 1960.

## COLLETT, Leonard Stanier See HOBSON, George Donald 2-60

## COLLINS, A Gene

- 1-60 (and WATKINS, J. Wade) Potentiometric determination of pH, alkalimty, acidity, borate boron, total boron, and organic boron in oilfield brines Producers Monthly, v. 24, no. 3, p 32-34 incl tables, Jan. 1960.

## COLLINS, Elizabeth See MURDOCH, Joseph 2-60



COLLINS, Henry Hill, Jr.

- 1-60. (adapter) The earth around us New York, N Y., Dial Press, 61 p., illus , 1960

COLLINS, Robert J , Jr

- 1-60. Stratigraphy and Ostracoda of the Ozan, Annona, and Marlbrook formations of southwestern Arkansas [abs ] Dissert Abs., v 21, no. 3, p 592, Sept 1960

COLLINS, Sam Garnette

- 1-60 Geology of the Patricia quadrangle, South Dakota South Dakota Geol. Survey [Geol. Map], scale 1 62,500 (about 1 in. to 1 mi.), with text, 1960  
2-60. Geology of the Winner quadrangle, South Dakota South Dakota Geol Survey [Geol. Map], scale 1 62,500 (about 1 in. to 1 mi ), with text, 1960.

COLLINSON, Charles William

- 1-60 (and SKARTVEDT, Romayne) Field book--Pennsylvanian plant fossils of Illinois Illinois State Geol Survey Educ Ser. 6, 35 p., illus., 1960

COLLINSON, D W

- 1-60. (and RUNCORN, Stanley Keith) Polar wandering and continental drift--Evidence from paleomagnetic observations in the United States Geol. Soc America Bull , v 71, no. 7, p 915-958 incl. diagrams and tables, July 1960

COLORADO METAL MINING FUND BOARD

- 1-60. Tungsten mines of Colorado 78 p , Jan. 1, 1960.

COLORADO SCHOOL of MINES, Department of Geological Engineering

- 1-60. Generalized composite stratigraphic section, Front Range of Colorado [1960]  
2-60. Generalized composite stratigraphic section, South Park, Colorado [1960]

COLQUHOUN, Donald John

- 1-60. Triassic stratigraphy of western central Canada [Alberta-British Columbia] [abs ] Dissert. Abs , v. 21, no. 6, p 1523, Dec 1960

COLTON, Harold Sellers

- 1-60. Black sand--Prehistory in northern Arizona Albuquerque, Univ New Mexico Press, 132 p. incl diagrams, tables, and illus , also sketch maps, 1960.

COLTON, Roger Burnham

- 1-60 Surficial geology of the Windsor Locks quadrangle, Connecticut U. S Geol Survey Geol Quad. Map GQ-137, scale 1 24,000 (1 in. to 2,000 ft ), with text, 1960

COLVILLE, Alan A

- 1-60. (and MEAD, Judson) Structural implications of a paleomagnetic investigation, Northern Tobacco Root Mountains, Montana [abs ] Geol Soc America Bull., v. 71, no 12, pt 2, p 1844-1845, Dec 1960

COMER, Joseph John. See BRINDLEY, George William 4-60

COMITÉ de la CARTA GEOLÓGICA de MÉXICO

- 1-60. (compiler) Carta geológica de la República Mexicana Washington, D.C., Williams and Heintz Map Corp , scale 1 2,000,000 (about 1 in. to 32 mi ), 1960.

COMPTON, Robert Ross

- 1-60 Charnockitic rocks of Santa Lucia Range, California Am Jour Sci , v. 258, no 9, p 609-636 incl geol sketch maps, section, tables, and illus , Nov 1960

## COMPTON

- 2-60. Contact metamorphism in Santa Rosa Range, Nevada Geol. Soc. America Bull., v. 71, no. 9, p. 1383-1416 incl sketch map, diagrams, sections, and tables, also geol map and sections and illus., Sept 1960.
- 3-60. Relations of major folds and reverse faults in Santa Lucia Range, California [abs.] Geol. Soc. America Bull., v 71, no. 12, pt 2, p. 2054, Dec 1960.
- CONANT, Georgianna D. See KING, Ruth Reece 1-60
- CONKIN, Barbara M. See CONKIN, James Elvin 1-60
- CONKIN, James Elvin  
1-60 (and CONKIN, Barbara M.) Arenaceous Foraminifera in the Silurian and Devonian of Kentucky [abs.] Geol. Soc. America Bull., v 71, no. 12, pt 2, p. 2014-2015, Dec 1960.
- CONLEY, James F  
1-60. Impressions resembling worm burrows in rock of the Carolina volcanic-sedimentary group, Stanly County, North Carolina Southeastern Geology, v. 1, no. 4, p. 133-137, illus incl geol map, 1959 [Apr. 1960].
- CONNALLY, G Gordon  
1-60. Heavy minerals in the glacial drift of western New York Rochester Acad. Sci. Proc., v 10, no. 5, p. 241-278, illus., June 1960.
- CONNELL, James Frederick Louis  
1-60. A catalog of type localities of Coastal Plain stratigraphic units Southeastern Geology, v. 2, no. 2, p. 49-126, tables, Nov 1960
- CONNERS, E. B  
1-60. Cement raw materials--Variety in mining Mining Cong. Jour., v 46, no 12, p. 56-59 incl. illus., Dec. 1960.
- CONRAD, Malcolm Alvin See also HEINRICH, E. W. 2-60  
1-60. Ultraviolet piezobirefringence of diamond [abs.] Dissert. Abs., v 21, no. 2, p. 349, Aug 1960
- CONRAD, Stephen G.  
1-60. Crystalline limestones of the Piedmont and Mountain Regions of North Carolina North Carolina Dept. Conserv. and Devel. Bull. 74, 56 p., illus., 1960.
- CONSELMAN, Frank Buckley  
1-60. Lost art of sample examination--A frozen asset Am. Assoc. Petroleum Geologists Bull., v. 44, no. 11, p. 1832-1833, Nov. 1960  
2-60. Pennsylvanian reef patterns in west-central Texas, in Texas Univ. Bur. Econ. Geology, Aspects of the geology of Texas--A symposium Texas Univ. Pub. 6017, p. 1-13, illus., Sept 1, 1960
- CONTRERAS VELÁZQUEZ, Hugo, 1917-1961  
1-60. (and CASTILLÓN BRACHO, Manuel) Morfología y origen de los domos salinos del Istmo de Tehuantepec Asoc. Mexicana Geólogos Petroleros Bol., v 12, nos 7-8, p. 221-242. index, geol. sketch, and structure maps, and sections, July-Aug. 1960.
- COOGAN, Alan H.  
1-60. Geological age of Soldier Creek, Buffalo County, South Dakota Iowa Acad. Sci. Proc. 1960, v 67, p. 314-325 incl index and sketch maps, tables, and illus., Dec 27, 1960
- COOK, D. R. See BUSH, J. B. 1-60
- COOK, Earl Ferguson  
1-60. Breccia blocks (Mississippian) of the Welcome Spring area, southwest Utah Geol. Soc. America Bull., v 71, no 11, p. 1709-1712 incl index and geol. sketch maps, Nov. 1960

- 2-60 Great Basin ignimbrites [Nevada-Utah], in *Geology of east central Nevada Intermountain Assoc Petroleum Geologists, 11th Ann Field Conf*, 1960 Guidebook, p 134-141 incl index map, sections, and chart, 1960.  
 3-60. *Geologic atlas of Utah--Washington County Utah Geol. and Mineralog. Survey Bull* 70, 119 p, illus. incl geol maps, Sept 1960.

COOK, Frank A

- 1-60. A review of the study of periglacial phenomena in Canada *Canada Dept Mines and Tech Surveys Geog Br Geog Bull* 13, p 22-38, tables, in French, p 38-53, 1959 [1960].  
 2-60. Some types of patterned ground in Canada *Canada Dept. Mines and Tech Surveys Geog Br. Geog Bull.* 13, p 73-79, illus., in French, p 80-81, 1959 [1960].  
 3-60. Selected bibliography on periglacial phenomena in Canada--annotations and abstracts *Canada Dept Mines and Tech Surveys Geog. Br Bibliog. Ser.*, no 24, 22 p., 1960.  
 4-60 Periglacial phenomena in Canada [abs.] *Oil in Canada*, v. 12, no. 16, p 35, Feb 15, 1960.

COOK, Harold James

- 1-60. New concepts of late Tertiary major crustal deformations in the Rocky Mountain region of North America *Internat Geol Cong*, 21st, Copenhagen, 1960, Rept., pt 12, p. 198-212 incl. index map and section, 1960.

COOK, John Call

- 1-60. RF electrical properties of salty ice and frozen earth *Jour. Geophys. Research*, v. 65, no 6, p 1767-1771 incl. diagrams and tables, June 1960, discussion by T. Hatherton, no 9, p. 3023-3024 incl. diagram, Sept. 1960

COOK, Kenneth Lorimer See BERG, Joseph Wilbur, Jr 1-60, 2-60, SCHWIND, Joseph J 1-60

COOK, Richard Kaufman See CHRZANOSWKI, Peter 1-60

COOKSON, George M

- 1-60. Plan for closure of Old River [La.-Miss.] *Am Soc. Civil Engineers Proc*, v 86, paper 2601, *Jour. Waterways and Harbors Div.*, no. WW 3, pt 1, p 83-102, illus., Sept 1960.

COOLEY, Maurice E See also CHENOWETH, W. L. 1-60

- 1-60. Analysis of gravel in Glen-San Juan Canyon region, Utah and Arizona *Arizona Geol Soc. Digest*, v 3, p. 19-30 incl. chart and table, Mar. 1960.

COOLIDGE, John E See HULL, Paul 1-60, 2-60

COOMBS, Howard Abbott

- 1-60. (and HOIDAL, C. R.) *Geologic problems at the Gorge High dam, Skagit River, Washington* [abs.] *Geol Soc America Bull*, v. 71, no. 12, pt 2, p 2054-2055, Dec 1960.  
 2-60. United States of America, in *Pt. 9 of Catalogue of the active volcanoes of the world including solfatara fields Naples, Italy, Internat. Volcanol. Assoc.* p vii-xii, 1-58 incl index and geol sketch maps, tables, and section, 1960.

COOPER, Byron Nelson

- 1-60 The geology of the region between Roanoke and Winchester in the Appalachian Valley of western Virginia *Johns Hopkins Univ. Studies Geology*, no 18, Guidebook 2, 84 p incl geol. sketch maps and sections, 1960 (1960 annual convention, American Association of Petroleum Geologists and Society of Economic Paleontologists and Mineralogists.)  
 2-60 Systematic boundaries in the Appalachians *Mineral Industries Jour.*, v. 7, no. 4, p 5-6, 8, Dec. 1960.  
 3-60. Undergraduate research participation program in VPI Department of Geological Sciences [abs.] *Virginia Jour. Sci.*, v 11, no. 4, p. 213-214, Sept. 1960.

## COOPER

COOPER, Gustav Arthur. See also MUIR-WOOD, H. M. 1-60

- 1-60. Correction of brachiopod names Jour. Paleontology, v. 34, no. 3, p. 601, May 1960, correction to paper, Smithsonian Misc. Coll., v. 127, pt. 1, p. 1-1024, pt. 2, p. 1025-1245, June 12, 1956.

COOPER, Jack Charles

- 1-60. Cambrian, Devonian and Mississippian rocks of the Four Corners area [Colorado Plateau], in Geology of the Paradox Basin fold and fault belt Four Corners Geol. Soc., 3d Field Conf., 1960, [Guidebook] p. 69-78, illus., 1960

COOPER, James Blair

- 1-60. Ground water in the Causey-Lingo area, Roosevelt County, New Mexico New Mexico State Engineer Tech. Rept. 14, 51 p., illus., 1960.

COOPER, James J. See BAUER, Herman L., Jr. 1-60

COOPER, John Roberts

- 1-60. Reconnaissance map of the Willcox, Fisher Hills, Cochise, and Dos Cabezas quadrangles, Cochise and Graham Counties, Arizona U. S. Geol. Survey Mineral Inv. Field Studies Map MF-231, scale 1:62,500 (about 1 in. to 1 mi.), 1960.  
2-60. Some geologic features of the Pima mining district, Pima County, Arizona U. S. Geol. Survey Bull. 1112-C, p. 63-103, illus. incl. geol. map, 1960.

COOPER, William Skinner

- 1-60. Coastal sand dunes of Monterey Bay, California [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1845, Dec. 1960.

COPELAND, Lawrence L.

- 1-60 (editor, and others) The diamond dictionary 1st ed., Los Angeles, Calif., Gemol. Inst. America, 315 p., illus., 1960

COPELAND, Murray John

- 1-60. (and BOLTON, Thomas Elwood) Canadian fossil Arthropoda--Euryptera, Phyllocarida and Decapoda Canada Geol. Survey Bull. 60, 85 p. incl. sketch maps, section, tables, illus., and French abs., 1960 Contains 4 papers which are not cited separately.  
2-60. A kinderhook microfauna from Crowsnest Pass, Alberta [abs.] Royal Soc. Canada Minutes Proc., 3d ser., v. 54, App. C, p. 36, 1960  
3-60. A kinderhook microfauna from Crowsnest Pass, Alberta Royal Soc. Canada Trans., 3d ser., v. 54, sec. 4, p. 37-43, illus., June 1960.  
4-60. Ostracoda from the Upper Silurian Stonehouse formation, Arisaig, Nova Scotia, Canada Palaeontology (London), v. 3, pt. 1, p. 93-103, illus., May 1960

COREY, Allen Frank

- 1-60. Kyanite occurrences in the Petaca district, Rio Arriba County, New Mexico New Mexico Bur. Mines and Mineral Resources Bull. 47, 70 p., illus. incl. geol. maps, 1960.

CORMIER, Randall F. See FAIRBAIRN, Harold Williams 1-60, HURLEY, Patrick Mason 1-60

CORNISH, F. W.

- 1-60. Some modern chemical separation methods, Chap. 11 in Smales, A. A., and Wager, L. R., ed., Methods in geochemistry New York, N. Y., Intersci. Publishers, p. 389-434, illus., 1960

CORNWALL, Henry Rowland

- 1-60. (and KLEINHAMPL, Frank Joseph) Structural features of the Beatty area, Nevada [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1845-1846, Dec. 1960

- 2-60 (and KLEINHAMPL, Frank J ) Preliminary geologic map of the Bare Mountain quadrangle, Nye County, Nevada U S. Geol Survey Mineral Inv. Field Studies Map MF-239, scale 1 48,000 (1 in to 4,000 ft ), with sections, 1960.

## CORPUS CHRISTI GEOLOGICAL SOCIETY

- 1-60. Geology of the Chittum Arch and the area north to the Pecos River [Texas], 10th annual field trip, Apr 29-30, 1960 [guidebook] Corpus Christi, Tex , 47 p , illus., 1960 Includes individual papers which are cited separately.

## CORSINI, A

- 1-60. (and GRAHAM, Richard Percival Devereux) Thorium determinations with 8-hydroxyquinoline Anal. Chim. Acta (Amsterdam), v. 23, no 3, p 248-256 incl diagrams and tables, Sept 1960

## CORTE, Arturo E.

- 1-60. (and HIGASHI, Akira) Experimental research on desiccation cracks in soil U. S. Army, Corps of Engineers, Snow Ice and Permafrost Research Establishment, Research Rept 66, [52] p inc diagrams, tables, and illus., Aug. 1960.

## CORWIN, Charles H

- 1-60. Dudley Ridge gas field California Oil Fields--Summ Operations Jan -June 1960, v. 46, no. 1, p 4-8, illus., 1960

## COSTA RICA DEPARTAMENTO de GEOLOGÍA, MINAS y PETRÓLEO

- 1-60. Costa Rica, maps geológico-Minero preliminar Scale 1 400,000 (about 1 in. to 6 mi.), 1960.

## CÔTÉ, Pierre E.

- 1-60. Chertsey area, Joliette, Montcalm and Terrebonne electoral districts Quebec Dept. Mines Geol Surveys Br. Geol. Rept 93, 30 p. incl. tables, geol map, and illus , 1960, also French ed

COTTON, Roger Burnham. See HOLMES, Chauncey DePew 1-60COUGHLIN, Roberta See HEEZEN, B. C 3-60

## COULTER, Henry Welty

- 1-60. (and HUSSEY, Keith Morgan, and O'SULLIVAN, John Blanford) Radio-carbon dates relating to the Gubik formation, northern Alaska Art. 160 in U S. Geol Survey Prof. Paper 400-B, p B350-B351, 1960.

## COUNTS, Harlan B.

- 1-60. Salt water encroachment into the principal artesian aquifer in the Savannah area, Georgia and South Carolina Am. Water Works Assoc., Jour Southeastern Sec , v. 24, no. 1, p 25-50 incl sketch maps, diagrams, and tables, 1960

COURTRIGHT, James H See RICHARD, Kenyon E. 1-60

## COUSMINER, Harold L.

- 1-60. Palynology, paleofloras, and paleoenvironments [abs.] Geol Soc. America Bull , v 71, no. 12, pt. 2, p. 2091-2092, Dec. 1960

## COWAN, M. K

- 1-60. (compiler) A bibliography of Bureau of Mines publications dealing with oil shale and shale oil, 1917-1959 Laramie, Wyo , U. S. Bur Mines, Laramie Petroleum Research Center, [26] p , revised, Jan. 1960

## COWEN, Robert C.

- 1-60. Frontiers of the sea--the story of oceanographic exploration Garden City, N. Y , Doubleday and Co., 307 p , illus , with introduction by R. R. Revelle, 1960.

## COWIE

COWIE, John Watson

- 1-60. Notes on Lower Cambrian stratigraphy in the boreal regions Internat. Geol. Cong., 21st, Copenhagen, 1960, Rept., pt. 8, p. 57-63 incl. sketch map and sections, 1960.

COWSER, Kenneth Emery. See STRUXNESS, E. G. 1-60

COX, Allan V. See also DOELL, R. R. 1-60

- 1-60 (and DOELL, Richard Raymond) Review of paleomagnetism Geol. Soc. America Bull., v. 71, no. 6, p. 645-768 incl. diagrams and tables, June 1960.

- 2-60. Variations in the direction of the dipole component of the earth's magnetic field [abs.]. Jour. Geophys. Research, v. 65, no. 8, p. 2484-2485, Aug. 1960.

COX, Doak Carey. See MACDONALD, Gordon Andrew 2-60

COX, Leslie Reginald. See also KNIGHT, J. B. 2-60, 3-60

- 1-60. Gastropoda--General characteristics of Gastropoda, in Joint Comm. Invertebrate Paleontology, Treatise on invertebrate paleontology--Pt. I, Mollusca 1 Lawrence, Kans., Geol. Soc. America and Univ. Kansas Press, p. I84-I169 incl. diagrams and illus., 1960.

CRABTREE, Edwin Howard

- 1-60. Potentials of the Western metal mining industry Western Resources Conf., 1st, 1959, Papers, p. 251-267 incl. table, 1960

CRADDOCK, John Campbell

- 1-60. The origin of the Lincoln fold system, southeastern New Mexico Internat. Geol. Cong., 21st, Copenhagen, 1960, Rept., pt. 18, p. 34-44 incl. sketch map and sections, 1960.

CRAFTS, Frederick S. See KESLING, Robert Vernon 3-60

CRAIG, Bruce Gordon. See also CANADA GEOL. SURVEY, 42-60, FYLES, John Gladstone 1-60

- 1-60. Surficial geology of north-central District of Mackenzie, Northwest Territories Canada Geol. Survey Paper 60-18, 8 p., illus. incl. geol. map [1960]

- 2-60. (and FYLES, John Gladstone) Pleistocene geology of Arctic Canada Canada Geol. Survey Paper 60-10, 21 p., illus., 1960.

- 3-60. (and FYLES, John Gladstone) Pleistocene geology of Arctic Canada [abs.]. Oil in Canada, v. 12, no. 16, p. 35, Feb. 15, 1960.

CRAIG, Lawrence Carey. See ORIEL, Steven S. 1-60

CRAMER, Howard Ross

- 1-60. Clastic dikes in Stewart County, Georgia [abs.]. Georgia Acad. Sci. Bull., v. 18, nos. 1-2, p. 11, Apr. 1960

- 2-60. Bibliography and index of Triassic paleontology in Pennsylvania Pennsylvania Acad. Sci. Proc., v. 34, p. 96-100, 1960

CRANDELL, Dwight Raymond. See also MULLINEAUX, D. R. 1-60

- 1-60. (and VARNES, David Joseph) Slumgullion earthflow and earth slide near Lake City, Colorado [abs.]. Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1846, Dec. 1960.

CRANE, Horace Richard

- 1-60. (and GRIFFIN, James B.) University of Michigan radiocarbon dates, [Pt.] 5 Am. Jour. Sci. Radiocarbon Supp., v. 2, p. 31-48, 1960.

CRANE, Ronald Clinton

- 1-60. The influence of clay mineralogy on ceramic properties [abs.]. Disser. Abs., v. 21, no. 3, p. 593, Sept. 1960

## CRARY, Albert Paddock

- 1-60. Arctic ice island and ice shelf studies, Pt. 2 Arctic, v. 13, no 1, p 32-50, illus., Mar. 1960.
- 2-60. Arctic ice island and ice shelf studies, in Bushnell, V. C., ed., Scientific studies at Fletcher's ice island, T-3, 1952-1955, V. 3 U. S. Air Force Cambridge Research Center Geophysics Research Directorate Geophys. Research Paper 63, p 1-37, illus., Apr. 1960.
- 3-60. Seismic studies, in Bushnell, V. C., ed., Scientific studies at Fletcher's ice island, T-3, 1952-1955, V. 3 U. S. Air Force Cambridge Research Center Geophysics Research Directorate Geophys. Research Paper 63, p. 38-44, illus , Apr. 1960

## CRAWFORD, Carl B. See also HAMILTON, J. J. 1-60

- 1-60. Engineering studies of the Leda clay [abs.] Royal Soc. Canada Minutes Proc., 3d ser , v. 54, App C, p. 41, 1960.

## CRAWFORD, J H., Jr See NELSON, C M. 1-60

## CRAWFORD, John Marion

- 1-60. (and DOTY, William E. N., and LEE, Milford Ray) Continuous signal seismograph Geophysics, v. 25, no. 1, p 95-105 incl diagrams and illus , Feb 1960.
- 2-60. Creativity versus problems in exploration [abs.] Tulsa Geol. Soc. Digest, v. 28, p. 94, 1960.

## CRAWFORD, T. C.

- 1-60. (and ALLEN, John Eliot) A fusion method for quick determination of certain rare metals Jour. Geol. Education, v. 8, no. 1, p. 11-13, table, spring 1960.

## CRAWFORD, Thomas J. See McGRAIN, Preston 1-60

## CREITZ, Ellis Erwin. See KASSNER, James Lyle 1-60

## CRESSMAN, Earle Rupert See also GULBRANDSEN, R. A. 3-60

- 1-60. (and SWANSON, Roger Warren) Permian rocks in the Madison, Gravelly, and Centennial Ranges, Montana, in West Yellowstone--Earthquake area [Montana] Billings Geol. Soc., 11th Ann. Field Conf., Sept. 1960, [Guidebook] p. 226-232 incl. index and sketch maps, sections, and illus , 1960.

## CRESSMAN, Luther Sheeleigh

- 1-60. (and others) Cultural sequences at The Dalles, Oregon--a contribution to Pacific Northwest prehistory Am. Philos Soc Trans. 1960, v. 50, pt. 10, 108 p , illus., Dec. 1960.

## CRICKMAY, Colin Hayter

- 1-60. Studies of the Western Canada Stringocephalinae Jour. Paleontology, v 34, no 5, p 874-890 incl. index map and diagrams, illus., Sept. 1960.
- 2-60. Lateral activity in a river of northwestern Canada [Alberta] Jour. Geology, v 68, no 4, p. 377-391 incl. index and topographic maps, illus., July 1960.
- 3-60. (and POCOCK, Stanley A. J.) Upper Cretaceous of Vancouver, British Columbia [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p 2055, Dec 1960
- 4-60 Ghost fossils [abs.] Canadian Oil and Gas Industries, v 13, no. 4, p. 108, Apr. 1960.
- 5-60. The Pennsylvanian age of the Pennsylvanian of Alberta [abs ] Canadian Oil and Gas Industries, v 13, no 4, p. 108, Apr. 1960.
- 6-60 The older Devonian faunas of the Northwest Territories Calgary, Alberta, privately printed, [21] p., illus., Aug. 25, 1960.

## CRIDLAND, Arthur A.

- 1-60. Fragmentary remains of a lycopod from the Desmoinesian series (Pennsylvanian) of southeastern Kansas Kansas Univ. Sci Bull., v 40, p. 3-19, illus , Apr. 20, 1960.

## CRIDLAND

- 2-60. (and MORRIS, John E ) *Spermopteris*, a new genus of pteridosperms from the Upper Pennsylvanian Series of Kansas Am. Jour. Botany, v. 47, no 10, p. 855-859 incl. illus., Dec. 1960.

CRITTENDEN, Max Dermont, Jr.

- 1-60 Deformation of Bonneville shore lines [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt 2, p. 1846, Dec. 1960.

CROCKET, James Harvie. See WINCHESTER, John Widmer 1-60

CROCKFORD, Michael Bertram Bray

- 1-60 Dodsland field, Saskatchewan [abs ] Am. Assoc. Petroleum Geologists Bull., v 44, no 6, p. 954-955, June 1960.

- 2-60. Geology of Dodsland field, Saskatchewan Am Assoc. Petroleum Geologists Rocky Mtn Sec. Geol. Record 1960, p. 151-159 incl maps and sections [1960]

CROFT, Mack G.

- 1-60 Geology and ground-water resources of Dade County, Georgia [abs.]. Georgia Acad. Sci. Bull., v 18, nos 1-2, p. 13-14, Apr. 1960.

CRONIN, James Gerald

- 1-60 (and WELLS, Lloyd C.) Geology and ground-water resources of Hale County, Texas Texas Board of Water Engineers Bull 6010, 146 p , illus , Nov 1960.

CRONBLE, William R.

- 1-60 An occurrence of *Ulocrinus buttsi* Miller and Gurley in Oklahoma Oklahoma Geology Notes, v. 20, no. 4, p 96-99, illus , Apr. 1960

CROOK, Keith A. W. See also PACKHAM, G. H 1-60

- 1-60. Classification of arenites Am Jour. Sci , v. 258, no. 6, p. 419-428 incl diagrams, June 1960.

CROOKS, James Walker. See ARNOW, Theodore 2-60, BOGART, Dean Butler 1-60

CROPP, Frederick William, 3d

- 1-60. Pennsylvanian spore floras from the Warrior Basin, Mississippi and Alabama Jour. Paleontology, v. 34, no. 2, p. 359-367 incl. sketch map, sections, and charts, Mar. 1960.

CROSBY, Garth M See also SILVERMAN, A J 1-60

- 1-60. The Gem stocks and adjacent orebodies, Coeur d'Alene district, Idaho Am. Inst. Mining, Metall., and Petroleum Engineers Trans. 1959, v 214, p. 697-700 incl. sketch maps and table, 1960.

CROSBY, James W., 3d

- 1-60. Reversed seismic profiles provide better rippability factors Mining World, v 22, no. 9, p. 30-31 incl. diagrams, Aug. 1960

CROSBY, Percy

- 1-60 Mineral facies in metamorphic rocks from central Kootenay Lake, British Columbia [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt 2, p. 1847, Dec. 1960.

CROSS, Jack L.

- 1-60 (and SHAW, Elizabeth H , and SCHEIFLE, Kathleen, editors) Geology, in Arizona--it's people and resources, by authors Tucson, Univ. Arizona Press, p 84-98, illus., 1960

- 2-60. (and SHAW, Elizabeth H., and SCHEIFLE, Kathleen, editors) Water, in Arizona--it's people and resources, by authors Tucson, Univ Arizona Press, p. 99-131, illus , 1960

- 3-60. (and SHAW, Elizabeth H., and SCHEIFLE, Kathleen, editors) Minerals and fuels, in Arizona--it's people and resources, by authors Tucson, Univ. Arizona Press, p 138-152, illus., 1960



- CROSS, Whitman, 2d  
1-60. Water-well data, western part of Albemarle County Virginia Div. Mineral Resources Inf. Circ. 2, 16 p. incl. tables and sketch map, 1960.
- CROWDER, Robert E  
1-60 Hyperion oil field California Oil Fields--Summ. Operations Jan.-June 1960, v 46, no. 1, p 86-91, illus., 1960.
- CROWELL, John Chambers  
1-60. The San Andreas fault in southern California Internat Geol. Cong., 21st, Copenhagen, 1960, Rept., pt. 18, p 45-52 incl geol. sketch map and sections, 1960
- CROWL, George Henry. See CANADA GEOL SURVEY 46-60, 47-60
- CROWLEY, Francis A. See ROBY, Robert Neil 1-60
- CROWLEY, Frank A.  
1-60. Columbiun-rare-earth deposits, southern Ravalli County, Montana Montana Bur. Mines and Geology Bull. 18, 47 p, illus incl. geol. maps, Aug 1960.
- CROWNINGSHIELD, G Robert. See COPELAND, Lawrence L. 1-60
- CROZIER, William Dwight  
1-60. Black, magnetic spherules in sediments Jour. Geophys. Research, v 65, no. 9, p. 2971-2977 incl. diagrams and tables, Sept 1960
- CRUMP, R M. See EMMONS, Richard Conrad 1-60
- CRUZ LÓPEZ, Juan la  
1-60 Notas sobre los metodos de exploración minera aplicables en Cuba Soc Cubana Historia Nat Mem , v 25, no 1, p. 73-83, Dec. 10, 1960
- CSERNA, Eugene George  
1-60. Pennsylvanian rocks in the Fra Cristobal quadrangle, Sierra County, New Mexico, in Northern Franklin Mountains, southern San Andres Mountains, with emphasis on Pennsylvanian stratigraphy Roswell Geol Soc., Field Trip, Nov. 1960, Guidebook, p. 135-148 incl. section, 1960
- CUBA COMISIÓN TÉCNICA de GEOLOGÍA y MINERÍA  
1-60 Mapa minero de Cuba 2d ed, Havana, Cuba Dirección Minas, scale 1:1,000,000 (about 1 in to 16 mi.), 1955, originally published 1947
- CULLEN, Albert William  
1-60. North, Middle, and South Parks, Chap 15 in Mineral resources of Colorado, 1st sequel Denver, Colorado Mineral Resources Board, p. 505, 561-591 incl index and sketch maps, 1960
- CULLINAN, Thomas A.  
1-60. Preliminary study on the movement of silt and clay in a water-bearing formation [Texas] Compass, v. 37, no. 4, p 299-314 incl. sketch map, diagrams, tables, and illus , May 1960.
- CULLING, W. E. H  
1-60. Analytical theory of erosion Jour. Geology, v 68, no 3, p. 336-344 incl. diagrams, May 1960.
- CUMMINGS, David  
1-60. The basal Chepultepec Sandstone (Cambrian-Ordovician boundary) in the Ridge and Valley province of Tennessee Jour. Sed. Petrology, v. 30, no 2, p. 228-240 incl index and sketch maps, section, and tables, June 1960.
- CUMMINGS, G. B. See SMITH, William Ogden 1-60

## CUMMINGS

CUMMINGS, Jon Clark

- 1-60. Geology of the Langley Hill-Waterman Gap area, Santa Cruz Mountains, California [abs] Dissert. Abs., v 21, no. 1, p 168-169, July 1960

CUMMINGS, Joseph Benton

- 1-60. (and HAWORTH, R.) Shaft sinking and development at the Potash Company of America Ltd 's Saskatchewan potash operation Canadian Mining and Metall Bull , v 53, no 578, p 406-408, June 1960, Canadian Inst. Mining and Metallurgy Trans , v 63, p 259-261, 1960.

CUMMINGS, Kenneth Francis

- 1-60. Buck Peak oil field--Moffat County, Colorado [abs] Am Assoc. Petroleum Geologists Bull , v 44, no 6, p. 955, June 1960  
2-60. Buck Peak field, Moffat County, Colorado Am Assoc Petroleum Geologists Rocky Mtn. Sec. Geol Record 1960, p 43-48 incl illus [1960]

CUMMINGS, T R See GORDON, Ellis Davis 1-60

CUMMINGS, W W See MAGEE, J. B 1-60

CUMMINS, Arthur Benson

- 1-60. Diatomite, in Am Inst. Mining, Metall , and Petroleum Engineers, Industrial minerals and rocks, p. 303-319 incl tables and illus., 1960

CURIEN, Hubert. See DONNAY, Joseph Désiré Hubert 1-60

CURL, Rane L

- 1-60. Aragonite-calcite problem [abs] Geol Soc America Bull , v 71, no 12, pt 2, p 2092, Dec 1960  
2-60 Stochastic models of cavern development, in Moore, G. W , ed , Origin of limestone caves--A symposium with discussion Natl. Speleol. Soc. Bull., v 22, pt 1, p 66-76, illus , Jan 1960

CURRAY, Joseph Ross. See also SIEVER, Raymond 2-60, Van ANDEL, Tjeerd H 3-60

- 1-60 Sediments and history of Holocene transgression, continental shelf, northwest Gulf of Mexico, in Shepard, F P , and others, ed., Recent sediments, northwest Gulf of Mexico Tulsa, Okla , Am Assoc Petroleum Geologists, p. 221-266, illus , 1960, erratum, Am Assoc Petroleum Geologists Bull., v 45, no. 4, p. 560, Apr. 1961.

CURRIER, Louis Wade

- 1-60 The seismic method in subsurface exploration of highway and foundation sites in Massachusetts U. S Geol Survey Circ. 426, 8 p incl. sections and diagrams, 1960.  
2-60. Geologic appraisal of dimension-stone deposits U S. Geol. Survey Bull. 1109, 67 p., illus., 1960

CURRY, Burrell L

- 1-60. Oklahoma-Arkansas coals [abs.] Mining Eng., v. 12, no 12, p 1212, Dec 1960.

CURRY, Sharon

- 1-60. The reorientation of calcite crystals in limestone Iowa Acad. Sci Proc. 1960, v. 67, p. 246-248 incl diagrams, Dec. 27, 1960.

CURTIS, Bruce Franklin

- 1-60. Major geologic features of Colorado, in Rocky Mtn. Assoc. Geologists, Guide to the geology of Colorado Denver, p 1-8 incl. geol. sketch maps, 1960.

CURTIS, Doris Malkin

- 1-60. Relation of environmental energy levels and ostracod biofacies in east Mississippi delta area Am Assoc Petroleum Geologists Bull., v 44, no 4, p 471-494 incl. index and sketch maps, chart, table, and illus , Apr. 1960

CURTIS, Garniss Hearfield. See EVERNDEN, Jack Foord 1-60, SAVAGE, Donald Elwin 1-60

CURTIS, Graham R

- 1-60 Southwestern Nebraska (Cambridge arch area) [abs] Am Assoc Petroleum Geologists Bull, v 44, no. 1, p 127, Jan 1960
- 2-60. (and others, editors) Kansas oil and gas fields--V 3, Northeastern Kansas, with special contributions covering SE Nebraska and NW Missouri Wichita, Kansas Geol Soc, 220 p., illus, 1960

CURTIS, Neville Mackay, Jr See also HAM, W. E. 4-60

- 1-60. (compiler) Published papers on Oklahoma geology in the year 1959 Oklahoma Geology Notes, v 20, no 3, p. 55-73, Mar. 1960, addenda, no. 4, p. 102-103, Apr 1960.
- 2-60 Lignite in the Red Branch member, Woodbine formation, Oklahoma Oklahoma Geology Notes, v. 20, no. 9, p 240-244, illus, Sept 1960

CURTISS, Robert Eugene See also SAMUELSON, W J. 1-60

- 1-60. Geology of Hebgen damsite, App 2 in U S. Army Corps of Engineers, Madison River, Montana, report on flood emergency, Madison River slide--V. 2, Appendixes Omaha, Nebraska, U S Army Corps of Engineers, p II-1-II-3, geol sketch map and diagram, Mar [Sept] 1960
- 2-60 (and KNIGHT, D K) Preliminary slide-stability studies, App. 9 in U S. Army Corps of Engineers, Madison River, Montana, report on flood emergency, Madison River slide--V. 2, Appendixes Omaha, Nebraska, U S Army Corps of Engineers, p IX-1-IX-10, tables, sketch map, and diagrams, Mar [Sept] 1960

CUSHMAN, R. V

- 1-60. Ground water in north-central Connecticut Econ Geology, v. 55, no. 1, p. 101-114 incl. geol. and sketch maps, Jan -Feb. 1960.

CUTLER, Ivan Burton See HOLT, J. Birch 1-60

CUTTITTA, Frank. See also MEYROWITZ, Robert 1-60, WARR, Jesse J., Jr 1-60

- 1-60 (and MEYROWITZ, Robert, and LEVIN, Betsy) Dimethyl sulfoxide, a new diluent for methylene iodide heavy liquid Am. Mineralogist, v 45, nos 5-6, p 726-728 incl. table, May-June 1960
- 2-60 (and WARR, Jesse J., Jr.) Determination of lead in pyrites Art 219 in U S Geol Survey Prof Paper 400-B, p B485-B486, 1960
- 3-60 (and WARR, Jesse J., Jr) Determination of lead in zircon with dithizone Art 220 in U. S. Geol. Survey Prof Paper 400-B, p. B486-B487 incl table, 1960.
- 4-60 (and WARR, Jesse J., Jr) Preparation of lead iodide for mass spectrometry Art 221 in U S. Geol Survey Prof Paper 400-B, p B487-B488, 1960.
- 5-60 Determination of small quantities of oxygen adsorbed on anatase Art 222 in U S. Geol Survey Prof Paper 400-B, p B488-B490 incl. diagram, 1960
- 6-60 (and SENFTLE, Frank Edward, and WALKER, Edward Corbell) Preliminary tests of isotopic fractionation of copper adsorbed on quartz and sphalerite Art 223 in U. S. Geol. Survey Prof Paper 400-B, p B491-B493, 1960

CWIEK, Mitchell S See CHENEY, Theodore Albert 1-60

DACHILLE, Frank See also HOFFER, Abraham 1-60, WHITE, W B 1-60

- 1-60. (and ROY, Rustum) High pressure studies of the system  $Mg_2GeO_4$ - $Mg_2SiO_4$  with special reference to the olivine-spinel transition Am. Jour Sci, v 258, no 4, p 225-246 incl diagrams and tables, Apr 1960
- 2-60. (and ROY, Rustum) High-pressure phase transformations in laboratory mechanical mixers and mortars Nature (London), v. 186, no. 4718, p 34, 71, Apr. 2, 1960.

Da COSTA

Da COSTA, José Alves

- 1-60. Presentation of hydrologic data on maps in the United States of America Internat Assoc. Sci Hydrology (Gentbrugge, Belgium) Pub. 52, p. 143-186 incl. maps and sections, 1960
- 2-60. (and BENNETT, Robert Raymond) The pattern of flow in the vicinity of a recharging and discharging pair of wells in an aquifer having areal parallel flow Internat Assoc. Sci Hydrology (Gentbrugge, Belgium) Pub. 52, p 524-536 incl. diagrams, 1960

DAHL, Arthur R. See also HANSEN, J A., Jr 1-60

- 1-60 (and HANDY, Richard Lincoln, and DAVIDSON, Donald Thomas) Variation of loess thickness and clay content in southern Iowa, in Geologic and engineering properties of Pleistocene materials in Iowa Iowa State Univ Sci and Technology, Iowa Eng Expt Sta Bull 191 (Iowa State Highway Comm., Iowa Highway Research Board Bull. 20), p 81-87 incl. sketch maps, diagram, and table, Dec 7, 1960
- 2-60 (and DAVIDSON, Donald Thomas, and ROY, Chalmer John) Petrography and engineering properties of loess and Kansan till in southern Iowa, in Geologic and engineering properties of Pleistocene materials in Iowa Iowa State Univ Sci and Technology, Iowa Eng Expt Sta. Bull 191 (Iowa State Highway Comm., Iowa Highway Research Board Bull 20), p 93-132 incl index and sketch maps, diagrams, tables, and illus, reprinted, Dec. 7, 1960, originally published 1959.

DAHLSTROM, Clinton D A

- 1-60. Concentric folding [Alberta], in Rock Lake Edmonton Geol. Soc, 2d Ann. Field Trip, Aug. 1960, Guidebook, p 82-84, illus, 1960.

DAKE, Henry Carl

- 1-60. Problems in wood identification Mineralogist, v. 27, nos. 12-[v. 28, no 1], p 248-250 incl illus, Dec 1959-Jan. [1960]
- 2-60 Washington coprolites again Mineralogist, v 28, nos. 2-3, p 6-8 incl. illus, Feb -Mar 1960
- 3-60. The case for a mineral collection Mineralogist, v 28, nos 9-10, p 148-153 incl illus, Sept.-Oct 1960

DALE, Vernon B.

- 1-60. (and STEWART, Lincoln Adair, and McKINNEY, William Alan) Tungsten deposits of Cochise, Pima and Santa Cruz Counties, Ariz U S Bur. Mines Rept Inv. 5650, 132 p incl sketch maps, diagrams, and tables, 1960

DALQUEST, Walter Woelber See HIBBARD, Claude William 1-60

DALY, J J. See MONTGOMERY, Gill 1-60

DAMBAUGH, Luella N.

- 1-60 The Everglades National Park [Florida]--A wilderness reserved [abs] Assoc Am. Geographers Annals, v. 50, no. 3, p 313, Sept 1960.

DAMON, Paul Edward See also GREEN, W D 1-60

- 1-60 (and HEDGE, Carl E., and TAYLOR, Omer James, and HALVA, Carroll J.) Radiometric determination of potassium in silicates Arizona Geol Soc. Digest, v 3, p 75-80 incl. tables, Mar 1960.

DANE, Carle Hamilton

- 1-60. New information on the areal extent of some Upper Cretaceous units in northwestern New Mexico Art 109 in U S Geol Survey Prof. Paper 400-B, p B241-B243 incl sketch maps, 1960
- 2-60. The boundary between rocks of Carlile and Niobrara age in San Juan Basin, New Mexico and Colorado Am Jour Sci., v 258-A (Bradley Volume), p 46-56 incl. index map and sections, 1960
- 3-60. The Dakota sandstone and Mancos shale of the eastern side of San Juan Basin, New Mexico, in Rio Chama Country New Mexico Geol Soc, 11th Field Conf, Oct 1960, Guidebook, p 63-74, illus., 1960.

DANES, Zdenko Frankenberger

- 1-60 On a successive approximation method for interpreting gravity anomalies Geophysics, v 25, no. 6, p 1215-1228 incl diagrams and tables, Dec. 1960.
- 2-60. A chemical correction factor in gamma-gamma density logging Jour. Geophys Research, v. 65, no 7, p. 2149-2153 incl. diagrams and table, July 1960.

DANIEL, Thomas W., Jr.

- 1-60. (and HASTINGS, Earl L.). Fort Payne chert-Warsaw limestone contact in Limestone County, Alabama Alabama Acad Sci. Jour., v. 31, no. 4, p 259-263, incl geol. sketch map and illus , Apr 1960
- 2-60. (and HASTINGS, Earl L.) Geologic map of Limestone County, Alabama Alabama Geol. Survey Map 13, scale about 1 in to 1 mi., 1960

DANIELS, Raymond Bryant

- 1-60 Entrenchment of the Willow Drainage Ditch, Harrison County, Iowa Am. Jour. Sci., v 258, no. 3, p. 161-176 incl. index map, diagrams, and illus , Mar 1960.
- 2-60. (and HANDY, Richard Lincoln, and SIMONSON, Gerald H.) Dark-colored bands in the thick loess of western Iowa Jour Geology, v 68, no 4, p. 450-458 incl index map, sections, diagrams, and tables, illus., July 1960.

DANNER, Wilbert Roosevelt

- 1-60 Paleozoic eugeosynclinal sequence of southwestern British Columbia and northwestern Washington [abs ] Geol. Soc America Bull., v 71, no. 12, pt. 2, p 2055, Dec. 1960
- 2-60. Revision of the geology of the San Juan Islands, Washington [abs.] Geol. Soc. America Bull , v. 71, no 12, pt. 2, p. 2055-2056, Dec. 1960
- 3-60 An introduction to the stratigraphy of southwestern British Columbia and northwestern Washington, in Geol Discussion Club, Guidebook for geological field trips in southwestern British Columbia Vancouver, B C , p. 1-6 incl correlation chart, Mar 1960.

DANSGAARD, W.

- 1-60. (and NIEF, G., and ROTH, E.) Isotopic distribution in a Greenland iceberg Nature (London), v 185, no 4708, p 232, illus , Jan. 23, 1960

DAPPLES, Edward Charles. See SLOSS, Laurence Louis 4-60

DARBY, David G See KESLING, Robert Vernon 3-60

DARLING, Lois

- 1-60. (and DARLING, Louis) Sixty million years of horses New York, N Y., William Morrow and Co , 64 p , illus , 1960.

DARLING, Louis. See DARLING, Lois 1-60

DARRAH, William Culp

- 1-60. Principles of paleobotany New York, N Y., Ronald Press Co., 295 p , illus., 1960

DART, Denis D

- 1-60. A talc-schist deposit near Nemo, South Dakota [abs ] South Dakota Acad. Sci Proc. 1959, v 38, p. 70, Jan. 1960

DASCH, Ernest J , Jr.

- 1-60 (and CLABAUGH, Stephen Edmund) Differentiation in the Rim Rock dike swarm, Trans-Pecos, Texas [abs ] Geol. Soc America Bull , v 71, no 12, pt 2, p. 1847, Dec. 1960

DAS SARMA, B. See CHOWDHURY, A. 1-60

## DATTA

DATTA, Ranajit  
1-60. (and ROY, Rustum) Order-disorder and superstructures in some spinels [abs.] Am Ceramic Soc. Bull., v 39, no 4, p 189, Apr. 1960.

DATTA, Sankar K See KAMB, Walter Barclay 4-60

DAUBEN, Carol H See TEMPLETON, David Henry 1-60

DAUGHTRY, Arthur C

1-60. (and PERRY, Douglas, and WILLIAMS, Milton) Isotopic evidence on mechanism of dolomitization [abs.] Am Assoc. Petroleum Geologists Bull., v 44, no 7, p. 1247, July 1960.

DAVIDSON, C. F. See also ROSCOE, S M 1-60

1-60 The mineralized conglomerates of Blind River [Ontario] Econ. Geology, v. 55, no 7, p 1561-1565, Nov. 1960. (Reply to discussions of earlier papers)

DAUGHERTY, Lyman Harry

1-60. *Itopsidema*, a new genus of the Osmundaceae from the Triassic of Arizona Am. Jour. Botany, v. 47, no 9, p. 771-777 incl illus, Nov 1960.

DAVIDSON, David Francis

1-60. Selenium in some epithermal deposits of antimony, mercury, and silver and gold U. S Geol. Survey Bull 1112-A, p 1-16 incl. index maps and tables, 1960.

DAVIDSON, Donald Alexander

1-60. Surface geology at the Granduc Mine [British Columbia] [abs.] Canadian Mining Jour, v. 81, no. 12, p 109, Dec. 1960.

DAVIDSON, Donald Thomas See also CHU, T. Y 1-60, DAHL, A. R. 1-60, 2-60, HANDY, R. L. 1-60, 2-60, HANSEN, J. A., Jr. 1-60, 2-60, LYON, C. A 1-60, SHEELER, J. B 1-60, WICKSTROM, A. E 1-60, WILLIAMS, W. W. 1-60

1-60. (and others) Geologic and engineering properties of Pleistocene materials in Iowa Iowa State Univ. Sci. and Technology, Iowa Eng. Expt Sta. Bull 191 (Iowa State Highway Comm., Iowa Highway Research Board Bull. 20), 250 p incl sketch maps, diagrams, tables, and illus., Dec 7, 1960 Contains individual papers which are cited separately

2-60. (and HANDY, Richard Lincoln, and CHU, T. L.) Depth studies of the Wisconsin loess in southwestern Iowa--particle size and in-place density, in Geologic and engineering properties of Pleistocene materials in Iowa Iowa State Univ. Sci. and Technology, Iowa Eng. Expt. Sta. Bull. 191 (Iowa State Highway Comm., Iowa Highway Research Board Bull 20), p 28-43 incl. sketch map, section, diagrams, tables, and illus, Dec. 7, 1960

3-60 (and HANDY, Richard Lincoln) Property variation in the Peorian (Wisconsin) loess of southwestern Iowa, in Geologic and engineering properties of Pleistocene materials in Iowa Iowa State Univ. Sci. and Technology, Iowa Eng. Expt Sta. Bull 191 (Iowa State Highway Comm., Iowa Highway Research Board Bull. 20), p 14-27 incl index map, diagrams, and tables, reprinted, Dec 7, 1960, originally published 1952.

4-60. (and others) Methods for testing engineering soils Iowa State Univ. Sci. and Technology, Iowa Eng. Expt Sta. Bull 192 (Iowa State Highway Comm., Iowa Highway Research Board Bull 21), 308 p incl diagrams, tables, and illus., Dec 14, 1960. Includes individual papers which are cited separately.

DAVIDSON, Edward Sheldon

1-60 Geology of the eastern part of the Safford basin, Graham County, Arizona (a preliminary report). Arizona Geol. Soc. Digest, v 3, p. 123-126 incl. geol. sketch map, Mar. 1960.

DAVIES, James Frederick

1-60 Massive sulphide deposits in Manitoba, in Symposium on the occurrence of massive sulphide deposits in Canada Canadian Mining and Metall.

DAVIS

- Bull., v. 53, no 575, p 141-144 incl. geol sketch map and section, Mar 1960, Canadian Inst. Mining and Metallurgy Trans , v. 63, p 82-85, 1960
- 2-60 Geology of the Thompson-Moak Lake district, Manitoba Canadian Mining Jour., v 81, no. 4, p. 101-104 incl. geol. sketch maps, Apr 1960
- DAVIS, William Edward See also CHAO, E. C. T. 3-60
- 1-60. Origin of caves in folded limestone [Appalachian Mts.], in Moore, G. W., ed., Origin of limestone caves--A symposium with discussion Natl Speleol. Soc Bull , v 22, pt 1, p 5-18, illus., Jan 1960
- 2-60. (and KRINSLEY, Daniel R ) Caves in northern Greenland Natl. Speleol Soc Bull., v 22, pt 2, p 114-116, illus., July 1960.
- DAVIS, Daniel Arthur See MACDONALD, Gordon Andrew 2-60
- DAVIS, George Hamilton
- 1-60. Thickness and consolidation of deep-sea sediments--A discussion Geol Soc. America Bull., v 71, no. 11, p. 1727-1728, Nov. 1960 (Discussion of paper by E. L. Hamilton, v. 70, p. 1399-1424, 1959.)
- DAVIS, Gordon Leslie See ALDRICH, Lyman Thomas 2-60, BASS, M. N. 2-60, TILTON, George Robert 2-60, WETHERILL, George W 1-60
- DAVIS, Gregory A.
- 1-60 Lawsonite and pumpellyite in glaucophane schist, North Berkeley Hills, California, with notes on the X-ray crystallography of lawsonite, by A Pabst Am. Jour Sci., v 258, no 10, p. 689-704 incl tables and illus., Dec. 1960
- DAVIS, James Howell. See also CAMERON, E N. 1-60
- 1-60. Mineralization in the southeast Missouri lead district [abs.] Dissert Abs , v 21, no. 1, p 169, July 1960.
- DAVIS, Leon Virgil
- 1-60. Geology and ground-water resources of southern McCurtain County, Oklahoma Oklahoma Geol Survey Bull 86, 108 p., illus incl. geol map, 1960.
- DAVIS, Margaret Bryan
- 1-60. Pleistocene palynology in the United States [abs ] Geol Soc America Bull , v. 71, no 12, pt 2, p. 2092-2093, Dec. 1960
- 2-60 (and GOODLETT, John C.) Comparison of the present vegetation with pollen-spectra in surface samples from Brownington Pond, Vermont Ecology, v 41, no 2, p. 346-357, illus., Apr 1960
- 3-60. A late-glacial pollen diagram from Taunton, Massachusetts Torrey Bot. Club Bull , v 87, no. 4, p 258-270, illus., July-Aug. 1960
- DAVIS, Raymond, Jr. See SCHAEFFER, O. A 1-60, STOENNER, R. W 1-60, 2-60
- DAVIS, Robert Ellis. See DRAKE, Avery Ala, Jr 1-60, 2-60
- DAVIS, T. Neil
- 1-60 Sand flows and surface collapses associated with the Koyukuk Basin, Alaska, earthquake of April 7, 1958 [abs ] Jour Geophys. Research, v 65, no 4, p 1313, Apr. 1960.
- 2-60. (and SANDERS, Norman K ) Alaska earthquake of July 10, 1958--Intensity distribution and field investigation of northern epicentral region Seismol Soc America Bull., v 50, no 2, p 221-252 incl. sketch maps, diagrams, and illus , Apr 1960
- 3-60. A field report on the Alaska earthquakes of April 7, 1958 Seismol Soc America Bull , v 50, no 4, p. 489-510 incl index and sketch maps, section, and illus , Oct 1960.
- DAVIS, Terry E See SLEMMONS, David Burton 1-60
- DAVIS, Wilbur A See CRESSMAN, Luther Sheeleigh 1-60

DAVIS

DAVIS, Willard Eugene

- 1-60 (and JACKSON, Wayne H., and RICHTER, Donald Herman) Application of gravity surveys to chromite exploration in Camaguey Province, Cuba Art 60 in U. S. Geol. Survey Prof. Paper 400-B, p B133-B136 incl index and gravity maps and sections, 1960.

DAVISON, Kenneth

- 1-60. (and SHICK, Robert L ) How to get a million dollars from an abandoned oil lease [Illinois] Oil and Gas Jour , v. 58, no. 6, p 94-98, 100 incl isopach and index maps, section, diagrams, tables, and illus., Feb 8, 1960

DAVISON, W L. See CANADA GEOL. SURVEY 42-60

DAWSON, Thomas Albert

- 1-60. Deep test well in Lawrence County, Indiana--drilling techniques and stratigraphic interpretations Indiana Geol Survey Rept Prog 22, 36 p , illus , Nov. 1960  
2-60. (and SULLIVAN, Dan M., and HREHA, Andrew J ) Catalogue of well samples of the Indiana Geological Survey Indiana Geol Survey Directory 8, 458 p., illus , Apr. 1960

DAWSONGROVE, G. E See WEBSTER, Glen M. 1-60

DE, Aniruddha

- 1-60 (and MAXWELL, John Crawford) Deformation of quartz grains in sandstone [abs ] Jour Geophys. Research, v 65, no 8, p 2485, Aug 1960

DEAN, Basil Gary

- 1-60. Selected annotated bibliography of the geology of uranium-bearing veins in the United States U S. Geol. Survey Bull 1059-G, p 327-440, index map, 1960.

DEAN, James Wilbur

- 1-60. Helium potential of the Navajo-Chambers area, Apache County, Arizona Interstate Oil Compact Comm Comm Bull., v 2, no. 2, p. 33-48, illus , Dec 1960.

DEAN, John Aurie See CARTER, Joel A 1-60

DEAN, John R.

- 1-60 A petrographic study of the argillaceous sandstones to determine factors that affect their suitability for use as road sub-base material [abs ] West Virginia Acad Sci Proc 1959, v 31, p 55, Dec 1960

DEAN, K. C.

- 1-60. (and NICHOLS, I L ) Field test for cesium and rubidium U. S Bur. Mines Rept Inv 5675, 9 p , 1960

DEAN, Robert George See EAGLESON, Peter Sturges 1-60

De BASTIANI, Mario J. See KOSTUIK, John 1-60

DEBRECHT, James D See WHITEHOUSE, Ulysses Grant 1-60

DeBROSSE, Theodore Anthony See SHEARROW, George Gordon 2-60

DeCHOW, E.

- 1-60. Geology, sulfur isotopes and the origin of the Heath Steele ore deposits, Newcastle, N. B., Canada Econ Geology, v 55, no 3, p. 539-556 incl. geol sketch map, sections, diagram, tables, and illus , May 1960.

DeCOOK, Kenneth J

- 1-60. Geology and ground-water resources of Hays County, Texas Texas Board of Water Engineers Bull 6004, 167 p , illus incl geol maps, Aug. 1960.



DEEVEY, Edward Smith, Jr See OANA, Shinya 1-60, STUIVER, Minze 1-60

DeFELICE, J See FIREMAN, Edward Leonard 1-60, 2-60

DEFFEYES, Kenneth Stover

1-60 Late Cenozoic sedimentation and tectonic development of central Nevada [abs.] Dissert. Abs., v 20, no 9, p 3692-3693, Mar. 1960

DeFORD, Ronald Kinnison

1-60 Place of foreign languages in graduate study of geology [abs.] Geol Soc. America Bull., v. 71, no. 12, pt 2, p 1848, Dec. 1960

DEIKE, George Herman, 3d See also WHITE, W B 2-60

1-60. X-ray analysis of some Missouri cave clays Missouri Speleology, v 2, no 1, p. 9-11, Jan 1960.

2-60. Origin and geologic relations of Breathing Cave, Virginia, in Moore, G. W., ed., Origin of limestone caves--A symposium with discussion Natl Speleol. Soc Bull., v. 22, pt. 1, p 30-42, illus, Jan 1960

de LAGUNA, Wallace See STRUXNESS, E. G 1-60

DELAITRE, Pierre

1-60 Papel que desempeña el geólogo en la construcción de presas Inst Centroamericano Investigación y Tecnología Indus Noticias ICAITI, no. 5, p [10-11], Dec 1960

de la MONTAGNE, John M. See MONTAGNE, John M de la

de LANGE, P W.

1-60. Analysis of naturally leached uranium-thorium ore samples--Application of pure gamma spectrometry Anal. Chemistry, v. 32, no 8, p. 1013-1017 incl diagrams and tables, July 1960

DELANO, Leonard H

1-60. Uses of photogrammetric mapping and aerial photo interpretation [abs.] Mining Eng, v 12, no. 9, p 966, Sept. 1960

DELEVAULT, Robert Edmund See WARREN, Harry Verney 1-60, 2-60, 3-60

DELEVAUX, Maryse Helen. See STERN, Thomas Whital 1-60

DELEVORYAS, Theodore. See also EGGERT, D. A. 1-60

1-60 Investigations of North American cycadeoids--Trunks from Wyoming Am. Jour Botany, v 47, no 9, p. 778-786 incl diagrams and illus., Nov. 1960.

DELLWIG, Louis Field

1-60 (and HILL, Walter Edward, Jr.) Variations in interference figures in single crystals of zoned smoky quartz Am Mineralogist, v. 45, nos. 9-10, p. 1116-1119 incl. illus., Sept -Oct. 1960

2-60. (and SNYDER, James D.) Plastic flow in Kansas salt mines at Lyons and Hutchinson [abs.] Geol Soc America Bull, v. 71, no 12, pt. 2, p 1848, Dec. 1960.

DeLONG, Jack Myler

1-60 Stratigraphic nomenclature chart for western Wyoming, in Overthrust belt of southwestern Wyoming and adjacent areas Wyoming Geol Assoc, 15th Ann Field Conf, 1960, Guidebook, p 89, 1960

DeLONG, Richard M See BRANT, Russell Alan 1-60

del RIO, S. M.

1-60 (compiler, and others) Mineral resources of Colorado, 1st sequel Denver, Colorado Mineral Resources Board, 764 p. incl. sections, correlation chart, diagrams, and tables, also index and geol sketch maps, 1960. Includes individual papers which are cited separately

del RIO

- 2-60. Colorado minerals production, 1946-1958, Chap 2, in Mineral resources of Colorado, 1st sequel Denver, Colorado Mineral Resources Board, p 27-43 incl diagrams and tables, 1960
- 3-60. Colorado Counties--Mineral resources, Chap 3, in Mineral resources of Colorado, 1st sequel Denver, Colorado Mineral Resources Board, p. 45-308 incl index maps and tables, 1960.

DeLUCA, Frank A See JOHNSON, Karl Elwood 1-60

deMILLE, George

- 1-60. The Elbow structure of south-central Saskatchewan Alberta Soc Petroleum Geologists Jour , v. 8, no 5, p 154-162 incl. geol , structure, and gravity maps and sections, May 1960.

DeMONTIGNY, Pierre-A.

- 1-60. Preliminary report on the southwest and part of the southeast quarter of Lemoine township, Abitibi-East electoral district Quebec Dept Mines Deposits Br. Prelim Rept 437, 10 p , geol. map, 1960, also French ed

DeMUMBRUM, Lawrence Edgar

- 1-60 Crystalline and amorphous soil minerals of the Mississippi Coastal Terrace Soil Sci Soc America Proc., v 24, no. 3, p 185-189, illus , May-June 1960
- 2-60. (and BRUCE, Robert Russell) Mineralogy of three soils of the Mississippi River alluvial plain Soil Sci , v 89, no 6, p 333-337 incl diagrams and tables, June 1960.

DENGO, Gabriel Obregon See HOFFSTETTER, Robert 2-60, 3-60, 4-60, 5-60, LLOYD, Joel Joseph 1-60, 2-60

DENISON, Robert Howland

- 1-60. Fishes of the Devonian Holland Quarry shale of Ohio Fieldiana Geology, v 11, no. 10, p. 555-613, illus., June 22, 1960

DENISON, Rodger E. See also HAM, W. E. 2-60

- 1-60. Rock slide on Mount Scott Oklahoma Geology Notes, v 20, no 6, p 130-131, illus., June 1960.

DENNEN, William Henry

- 1-60. Principles of mineralogy New York, N. Y , Ronald Press Co , 453 p., illus., revised printing with determinative tables, 1960, originally published 1959

DENNISON, A. T.

- 1-60. (and WARMAN, Harry Robert) Coordination of geology and geophysics pays off World Oil, v 150, no 5, p 87-92 incl illus , Apr. 1960

DENNISON, John Manley

- 1-60. Stratigraphy of Devonian Onesquethaw stage in West Virginia, Virginia, and Maryland [abs.] Dissert. Abs , v. 21, no 3, p. 593, Sept. 1960

DeNOYER, John M. See also KELLY, W. C 1-60

- 1-60. Gravity profiles across the Sangre de Cristo Range, Colorado [abs ] Geol. Soc America Bull , v 71, no. 12, pt 2, p 1848-1849, Dec. 1960
- 2-60 Effect of variations in crustal thickness on Love-wave dispersion [abs.] Geol. Soc. America Bull., v 71, no 12, pt 2, p 2056, Dec. 1960

DENTON, George H.

- 1-60 Coal resources of the upper part of the Monongahela formation and the Dunkard group in Ohio Ohio Div. Geol Survey Rept. Inv. 38, 50 p., illus., 1960

DERBYSHIRE, Edward

- 1-60 Glaciation and subsequent climatic changes in central Quebec-Labrador--a critical review Geog. Annaler, v. 42, no 1, p. 49-61, illus , Stockholm, 1960.

- DERKSEN, George  
1-60. Beryllium detector developed by Winnipeg scientists Precambrian, v. 33, no 4, p 14-16 incl. illus , Apr 1960
- DERRY, Duncan R.  
1-60. Evidence of the origin of the Blind River uranium deposits Econ. Geology, v 55, no. 5, p 906-927 incl geol sketch map and sections, Aug. 1960.
- DeRUSHA, Lyle  
1-60. A few notes on collecting in Upper Michigan Rocks and Minerals, v 35, nos 1-2, p 12, Jan -Feb 1960
- DESAUTELS, Paul E  
1-60 Occurrence of multi-form fluorite from Mexico Am Mineralogist, v. 45, nos 7-8, p. 884-886 incl diagram, July-Aug 1960
- DeSESA, Michael A See PETROW, Henry George 1-60
- DESPAULT, G J. G. See HEYDING, R D 2-60
- DEUTSCH, Ernst R  
1-60. First-order tectonics of North America--A review Alberta Soc Petroleum Geologists Jour , v 8, no 8, p 228-232 incl diagrams, Aug. 1960
- DEUTSCH, Morris  
1-60. (and VANLIER, K Eugene, and GIROUX, Paul R.) Ground-water hydrology and glacial geology of the Kalamazoo area, Michigan Michigan Geol Survey Div Prog Rept. 23, 122 p , illus., 1960  
2-60. Effects of dissemination of radioactive materials on water resource conservation with special reference to Michigan, 1st revision Michigan State Univ Dept Resource Devel Agr. Expt Sta Water Bull 2, 35 p. incl. tables, 1960, originally published 1956
- DEUTSCH, Sarah See SILVER, Leon T. 1-60, 2-60
- de VRIES, Hessel, 1916-1959  
1-60 (and DREIMANIS, Aleksis) Finite radiocarbon dates of the Port Talbot interstadial deposits in southern Ontario Science, v 131, no 3415, p 1738-1739 incl table, June 10, 1960
- deVRIES, Robert Charles  
1-60 Multiple growth twinning in  $BaTiO_3$  single crystals Am Mineralogist, v 45, nos 7-8, p 852-861 incl diagrams and illus , July-Aug 1960
- de WAARD, H  
1-60. Hessel de Vries [1916-1959], physicist and biophysicist Science, v 131, nos 3415, p 1720-1721 incl portrait, June 10, 1960
- DeWIT, Reinout  
1-60 Alan W. Reece, 1921-1960 Alberta Soc Petroleum Geologists Jour., v 8, no. 6, p 182-183 incl portrait, June 1960
- de WITT, Wallace, Jr  
1-60. Java formation of Late Devonian age in western and central New York Am Assoc Petroleum Geologists Bull., v. 44, no 12, p 1933-1936 incl. sketch map and section, Dec. 1960.
- de WITTE, Leendert See WYLLIE, Malcolm Robert Jesse 1-60
- de WYS, E Christiaan  
1-60 A possible explanation of immiscibility in silicate melts Mineralog. Mag (London), v 32, no. 249, p 471-479 incl. diagrams, June 1960.  
2-60. Silicate melts with indications of ino structures Mineralog. Mag (London), v 32, no 251, p 640-643 incl illus., Dec 1960.

de WYS

- 3-60. A thermodynamic analysis of the system anorthite-åkermanite Mineralog. Mag (London), v. 32, no 351, p. 644-649 incl diagrams, Dec 1960.

DIAZ de COSSIO, Roger

- 1-60 Foundation failures during the Coatzacoalcos (Mexico) earthquake of 26 August 1959 World Conf. Earthquake Eng , 2d, Tokyo and Kyoto, Japan, July 11-18, 1960, Proc., v. 1, p 473-486 incl. sketch map, diagrams, and illus , Tokyo, Sci. Council Japan, 1960.

DÍAZ VELASCO, Rafael See SEIGLIE, George Alfredo 1-60

DIBBLEE, Thomas Wilson, Jr

- 1-60. Preliminary geologic map of the Victorville quadrangle, California U. S. Geol Survey Mineral Inv Field Studies Map MF-229, scale 1 62,500 (about 1 in to 1 mi ), with sections and text, 1960  
2-60. Geologic map of the Hawes quadrangle, San Bernardino County, California U S Geol Survey Mineral Inv Field Studies Map MF-226, scale 1 62,500 (about 1 in. to 1 mi.), with sections, 1960  
3-60. Geologic map of the Lancaster quadrangle, Los Angeles County, California U S Geol Survey Mineral Inv Field Studies Map MF-76, scale 1 62,500 (about 1 in to 1 mi ), with sections and text, 1960.  
4-60. Preliminary geologic map of the Shadow Mountains quadrangle, Los Angeles and San Bernardino Counties, California U. S Geol. Survey Mineral Inv Field Studies Map MF-227, scale 1 62,500 (about 1 in to 1 mi ), with sections, 1960  
5-60. Preliminary geologic map of the Victorville quadrangle, California U S Geol. Survey Mineral Inv Field Studies Map MF-229, scale 1 62,500 (about 1 in to 1 mi ), with sections and text, 1960  
6-60. Preliminary geologic map of the Apple Valley quadrangle, California U S. Geol Survey Mineral Inv. Field Studies Map MF-232, scale 1 62,500 (about 1 in to 1 mi ), with sections and text, 1960  
7-60. Geologic map of the Barstow quadrangle, San Bernardino County, California U S. Geol Survey Mineral Inv. Field Studies Map MF-233, scale 1 62,500 (about 1 in to 1 mi.), with sections, 1960  
8-60 Geology of the Rogers Lake and Kramer quadrangles, California U. S. Geol Survey Bull 1089-B, p 73-139, illus. incl geol map, 1960.

DIBELER, Vernon H.

- 1-60. (and REESE, Robert M ) Mass spectrometry Anal Chemistry, v. 32, no 5, p 211R-221R, Apr 1960.

DICKENS, H B See LEGGET, Robert Ferguson 2-60

DICKEY, Dayton Delbert See also McKEOWN, F A 1-60, 2-60

- 1-60. Thermoluminescence of some dolomite, tuff, and granitic rock samples from the north-central part of the Nevada Test Site, Nye County, Nevada--A progress report U. S. Geol Survey Rept TEI-765, 30 p. incl. index maps, diagrams, and tables, July 1960

DICKINSON, Maurice Levy See TERZAGHI, Karl 1-60

DICKINSON, William Richard

- 1-60. Petrology of Jurassic marine tuffs, central Oregon [abs ] Geol Soc America Bull , v 71, no 12, pt. 2, p 2056, Dec 1960  
2-60. Geology of the Izee area, Grant County, Oregon [abs.] Dissert. Abs., v 20, no 11, p 4367, May 1960

DICKSON, Frank Wilson. See also ARNTSON, R H 1-60

- 1-60. (and SHIELDS, D. L , and KENNEDY, George Clayton) Use of the temperature-gradient furnace to determine equilibrium sulfur pressures of metal sulfide reactions [abs ] Geol Soc. America Bull , v. 71, no 12, pt 2, p 2057, Dec. 1960  
2-60 (and BLOUNT, C. W., and TUNELL, George) Solubility of anhydrite in water from 100°C. to 275°C. and 1 bar to 1000 bars [abs ] Geol. Soc America Bull , v 71, no 12, pt. 2, p 2057, Dec 1960

## DIEBOLD, Frank E

- 1-60. (and HILTROP, Carl L., and WERNER, Michael A., and LEMISH, John) Comparison of two methods for determining percentage of dolomite in a carbonate rock [abs.] Geol. Soc. America Bull., v 71, no. 12, pt 2, p 1849, Dec 1960

## DIENES, George Julian

- 1-60. Introduction--Defects in silicas, in Symposium on defect structure of quartz and glassy silica Physics and Chemistry Solids, v 13, nos 3-4, p 272-278, illus., June 1960.

## DIETRICH, Richard Vincent

- 1-60. Calciostromantite from Pulaski and Rockingham Counties, Virginia Am. Mineralogist, v. 45, nos. 9-10, p 1119-1124 incl. diagram, table, and illus., Sept-Oct 1960  
 2-60. Genesis of pygmatic features Internat. Geol. Cong., 21st, Copenhagen, 1960, Rept., pt. 14, p 138-148 incl. illus., 1960  
 3-60. Basement beneath Atlantic Coastal Plain between New York and Georgia [abs.] Am. Assoc. Petroleum Geologists Bull., v. 44, no. 7, p 1246-1247, July 1960  
 4-60. Nomenclature of migmatitic and associated rocks GeoTimes, v 4, no. 5, p 36-37, 50-51 incl. illus., Jan.-Feb 1960.  
 5-60. Basement beneath the emerged Atlantic Coastal Plain between New York and Georgia Southeastern Geology, v 1, no 4, p 121-131, illus., 1959 [Apr. 1960].  
 6-60 Banded gneisses Jour. Petrology (Oxford, England), v. 1, no 1, p 99-120 incl. illus., Feb. 1960.  
 7-60 Virginia minerals and rocks, 3d edition Virginia Polytech. Inst. Bull., v 53, no 3, (Eng. Expt. Sta. Ser. 137), 59 p., illus., Jan 1960, originally published 1954.  
 8-60 Virginia mineral localities, 1960 edition Virginia Polytech. Inst. Bull., v. 53, no 7, (Eng. Expt. Sta. Ser. 138), 84 p., May 1960, originally published 1953.

## DIETZ, Robert Sinclair

- 1-60 Meteorite impact suggested by shatter cones in rock Science, v. 131, no 3416, p 1781-1784 incl. illus., June 17, 1960, discussion with title, Shatter cones and their origin, by P. S. Miller, and reply by author, v 132, no 3428, p 687-688, Sept 9, 1960  
 2-60 Meteorite impact suggested by shatter cones in rock Science, v. 131, no 3416, p 1781-1784, June 17, 1960

## DILLINGER, Lee. See also SCLAR, C B 1-60

- 1-60. (and SCLAR, Charles B.) A method of mounting minute particulate samples of opaque ore minerals for quantitative microscopic analysis Econ. Geology, v 55, no. 1, p 187-191 incl. illus., Jan.-Feb 1960

## DIMENT, William Horace. See also BUNKER, C M 1-60, STEWART, S W. 1-60

- 1-60 (and HEALEY, Don L., and ROLLER, John C.) Gravity and seismic exploration at the Nevada Test Site Art 69 in U. S. Geol. Survey Prof. Paper 400-B, p B156-B160 incl. gravity map, diagrams, and table, 1960.  
 2-60 (and STEWART, Samuel Woods, and ROLLER, John C.) Maximum ground accelerations caused by nuclear explosions at distances of 5 to 300 kilometers Art 70 in U. S. Geol. Survey Prof. Paper 400-B, p B160-B161, 1960

## DINKINS, Donald Edward

- 1-60. Geology of Stensvad field, Montana, and its regional geologic setting, with notes on Tyler reservoir [abs.] Am. Assoc. Petroleum Geologists Bull., v 44, no 6, p 955, June 1960  
 2-60 The geology of the Stensvad field [Montana] and its regional geologic setting, with notes on the Tyler reservoir Am. Assoc. Petroleum Geologists Rocky Mtn. Sec. Geol. Record 1960, p 59-69 incl. maps and illus. [1960]

## DINNIN

DINNIN, Joseph I. See also JACKSON, E. D. 2-60

1-60. Releasing effects in flame photometry--Determination of calcium Anal. Chemistry, v. 32, no 11, p. 1475-1480 incl diagram and tables, Oct. 1960.

2-60. Determination of total iron in chromite and chrome ore Art. 215 in U. S. Geol. Survey Prof. Paper 400-B, p. B476-B477 incl. table, 1960.

DIONNE, Jean Claude

1-60. Observations sur les colonnes de grès de la région de Kingston, Ontario Rev. Canadienne Géographie, v. 14, nos. 1-4, p. 59-61 incl. illus., 1960

DIXON, Cyril George. See HOFFSTETTER, Robert 1-60

DIXON, Joe Boris

1-60. (and JACKSON, Marion LeRoy) Mineralogical analysis of soil clays involving vermiculite-chlorite-kaolinite differentiation, in Swineford, Ada, ed., Clays and clay minerals, V. 8 Natl. Conf. Clays and Clay Minerals, 8th, Norman, Okla., Oct. 1959, Proc., p. 274-286 incl. diagrams and tables, 1960. (Issued as Internat. Earth Science Ser. Mon. 9 of Pergamon Press, New York.)

DOBRIN, Milton Burnett

1-60. Introduction to geophysical prospecting 2d ed., New York, N. Y., McGraw-Hill Book Co., 446 p., illus., 1960.

DODD, Charles Gardner See also HAM, W. E. 6-60

1-60. (and RAY, Satyabrata) Semiquinone cation adsorption on montmorillonite as a function of surface acidity, in Swineford, Ada, ed., Clays and clay minerals, V. 8 Natl. Conf. Clays and Clay Minerals, 8th, Norman, Okla., Oct. 1959, Proc., p. 237-251 incl. diagrams and tables, 1960. (Issued as Internat. Earth Science Ser. Mon. 9 of Pergamon Press, New York.)

DODD, Philip Horace. See SCOTT, James H. 1-60

DODSON, Chester L. See WEIR, Gordon Whitney 3-60

DODSON, Edward O.

1-60. Evolution--process and product Revised ed., New York, N. Y., Reinhold Pub. Corp., 352 p., illus., 1960, (originally published as a textbook of evolution, 1952)

DOE, Bruce R.

1-60. Primary sphalerite-pyrite-pyrrhotite at the Balmat No. 2 mine, New York [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1850, Dec. 1960

DOELL, Richard Rayman See also COX, A. V. 1-60

1-60. (and COX, Allan V.) Paleomagnetism, polar wandering, and continental drift Art. 193 in U. S. Geol. Survey Prof. Paper 400-B, p. B426-B427, 1960

2-60. (and ALTENHOFEN, Robert E.) Preparation of an accurate equal-area projection Art. 194 in U. S. Geol. Survey Prof. Paper 400-B, p. B427-B429 incl. diagram, 1960

DOERING, John A.

1-60. Quaternary surface formations of southern part of Atlantic coastal plain Jour. Geology, v. 68, no. 2, p. 182-202, geol., geomorphologic, structure contour, and topographic maps, and diagrams, Mar. 1960

DOH, Charles A. See TIXIER, Maurice Pierre 1-60

DOLAN, Robert G. See SMITH, D. D. 3-60

DOLAN, William M. See BERG, Joseph Wilbur, Jr. 2-60

## DOLL, Henri-Georges

- 1-60. (and DUMANOIR, J L., and MARTIN, Maurice) Suggestions for better electric log combinations and improved interpretations Geophysics, v 25, no 4, p 854-882 incl diagrams, Aug 1960.
- 2-60. (and MARTIN, Maurice, and TIXIER, Maurice Pierre) Application of wire-line well logging to subsurface geology Internat Geol Cong, 21st, Copenhagen, 1960, Rept, pt. 2, p. 121-136 incl. logs and cross sections, 1960
- 3-60 Possibilities of wire-line well-logging methods in Mohole [abs.] Am. Assoc. Petroleum Geologists Bull., v. 44, no. 7, p 1247, July 1960.
- 4-60. Possibilities of wire-line logging methods in the Mohole [abs.] Geol Soc. America Bull, v. 71, no 12, pt. 2, p. 2093, Dec. 1960

## DOLL, Warwick L., 1909-1962

- 1-60. (and WILMOTH, Benton McMillian, Jr, and WHETSTONE, George W) Water resources of Kanawha County, West Virginia West Virginia Geol. and Econ. Survey Bull 20, 189 p, illus. incl. geol map, July 1960.

## DOLLOFF, Norman Horace

- 1-60. Summer Institute of Mathematics and Earth Science for secondary-school students of high ability at San Jose State College, 1960 [abs] Geol. Soc. America Bull., v 71, no 12, pt 2, p 1850, Dec. 1960

## DOLMAGE, Victor

- 1-60. Engineering geology, North Vancouver, in Geol Discussion Club, Guidebook for geological field trips in southwestern British Columbia Vancouver, B C., p. 26-32 incl. sketch map and sections, Mar 1960.

## DOLSEN, C. Philip See SPACKMAN, William, Jr 2-60

## DOMINION STEEL and COAL CORPORATION, Limited

- 1-60. Deflection diamond drilling at Wabana mines [Newfoundland] Canadian Mining and Metall Bull., v. 53, no 577, p 309-314 incl sketch map, diagrams, and illus, May 1960, Canadian Inst Mining and Metallurgy Trans, v. 63, p 187-192, 1960.

## DONALD, Harold Jack See POLANSKY, Theodore Stephen 1-60

## DONALDSON, Alan Chase

- 1-60 Stratigraphy of Lower Ordovician Stonehenge and Larke formations in central Pennsylvania [abs] Dissert Abs, v. 20, no. 9, p. 3693-3694, Mar 1960.
- 2-60 Introductory discussion of Stonehenge limestone, in Gates, Olcott, ed, Lower Paleozoic carbonate rocks in Maryland and Pennsylvania Johns Hopkins Univ Studies Geology, no. 18, Guidebook 3, p 42-47 incl geol. sketch map, section, and chart, 1960
- 3-60 Interpretation of depositional environments of Lower Ordovician carbonates in central Appalachians West Virginia Acad. Sci Proc 1960, v 32, p. 153-161, illus, Dec. 1960.

## DONALDSON, J A. See CANADA GEOL SURVEY 31-60, 34-60

## DONALDSON, W F. See ERGUN, Sabri 2-60

## DONATH, Fred Arthur

- 1-60. (and COHEN, Charles I.) Anisotropy and failure in rocks [abs] Geol Soc America Bull., v. 71, no. 12, pt 2, p 1851, Dec 1960.

## DONATI, G R.

- 1-60. (and CHAPMAN, Carleton Abramson) Meteorites in the University of Illinois Natural History Museum--a descriptive catalog Urbana, Univ. Illinois, [31] p incl tables and illus, 1960.

## DONN, William L. See also EWING, W. M 1-60, 2-60

- 1-60. A terrestrial theory of ice ages [abs] Houston Geol Soc Bull., v 2, no 10, unpagged, June 1960

DONN

- 2-60. Pleistocene climate New York Acad Sci. Trans., ser 2, v 22, no 7, p 491-493, May 1960.

DONNAN, Bryson Carlyle

- 1-60. Offshore exploration in Great Lakes region [abs.] Am Assoc Petroleum Geologists Bull., v. 44, no. 7, p 1247-1248, July 1960.

DONNAY, Gabrielle. See also KULLERUD, Gunnar 1-60, MORIMOTO, Nobuo 2-60

- 1-60. High-order transitions in mineralogy--[Pt ] 2, A structural interpretation [abs.] Geol. Soc. America Bull., v 71, no 12, pt. 2, p. 1851, Dec. 1960.

DONNAY, Joseph Désiré Hubert. See also KULLERUD, Gunnar 1-60

- 1-60. (and CURIEN, Hubert) The concept of "lattice complex" in the theory of twinning, in Symposium on twinning Inst Inv. Geol "Lucas Mallada" Cursos y Conf. (Madrid), fasc 7, p 13-14, May 1960

DONNELL, John Roswell. See ROCKY MTN ASSOC. GEOLOGISTS 2-60

DONNELLY, Thomas Wallace

- 1-60. Petrologic and tectonic evolution of St. Thomas and St. John, Virgin Islands [abs.] Geol Soc. America Bull., v 71, no 12, pt. 2, p 1851-1852, Dec. 1960  
2-60 The geology of St Thomas and St. John, Virgin Islands Caribbean Geol. Conf., 2d, Mayagüez, Puerto Rico, Jan 4-9, 1959, Trans., p 153-155, with discussion, 1960.  
3-60. Geology of St Thomas and St. John, Virgin Islands [abs.] Dissert Abs., v 20, no. 7, p 2755-2756, Jan 1960

DOOLEY, John Raymond, Jr. See ROSHOLT, John Nicholas, Jr 1-60

DORAI-BABU, P. See AMSTUTZ, G C 3-60

DORF, Erling

- 1-60. Climatic changes of the past and present Am Scientist, v. 48, no. 3, p 341-364 incl. sketch maps, diagrams, and illus , Sept. 1960  
2-60. Tertiary fossil forests of Yellowstone National Park, Wyoming, in West Yellowstone--Earthquake area Billings Geol Soc., 11th Ann. Field Conf , Sept. 1960, [Guidebook] p 253-260 incl index map, section and illus , 1960.  
3-60. The earth's changing climates [abs.] Houston Geol Soc Bull , v. 2, no 6, unpagged, Feb 1960  
4-60. The earth's changing climates [abs.] Tulsa Geol. Soc. Digest, v 28, p. 86-87, 1960.

DORMAN, Henry James

- 1-60. (and PRENTISS, David) Particle amplitude profiles for Rayleigh waves on a heterogeneous earth Jour Geophys Research, v 65, no. 11, p. 3805-3816 incl diagrams and tables, Nov 1960  
2-60 (and EWING, William Maurice, and OLIVER, Jack Ertle) Study of shear-velocity distribution in the upper mantle by mantle Rayleigh waves Seismol. Soc America Bull., v. 50, no. 1, p. 87-115 incl. diagrams and tables, Jan 1960.

DORT, Wakefield, Jr

- 1-60. Multiple glaciation, east side of Lemhi Range, Idaho [abs ] Geol. Soc. America Bull., v 71, no. 12, pt 2, p 1852, Dec. 1960  
2-60. Faulting on Bald Eagle Mountain Pennsylvania Acad. Sci. Proc , v 34, p 131-135, illus , 1960.

DOSCH, Murray W. See YBARRA, R. A. 1-60

DOTY, Gene C.

- 1-60. Reconnaissance of ground water in Playas Valley, Hidalgo County, New Mexico New Mexico State Engineer Tech. Rept 15, 40 p., illus., 1960



DOTY, William E. N. See CRAWFORD, J M 1-60

DOUGLAS, Charles H

- 1-60. Fine and medium grained alluvial deposits along the Missouri River [abs] South Dakota Acad Sci. Proc 1959, v 38, p 39, Jan 1960.

DOUGLAS, Robert John Wilson

- 1-60 (and NORRIS, Donald Kring) Stratigraphy and structure of upper Mackenzie River region, Northwest Territories and Yukon [abs] Canadian Oil and Gas Industries, v 13, no. 4, p 104-105, Apr 1960
- 2-60. (and NORRIS, Donald Kring) Virginia Falls and Sibbeston Lake map-areas, Northwest Territories, 95F and 95G Canada Geol Survey Paper 60-19, 26 p, illus incl geol maps, 1960.
- 3-60 (and NORRIS, A W) Horn River map-area, Northwest Territories--north halves of 85 and 95 (parts of) Canada Geol. Survey Paper 59-11, 23 p, illus incl geol map, 1960

DOUGLASS, Raymond Charles

- 1-60 Late Pennsylvanian and Early Permian fusulinids of northeastern Nevada [abs] Geol. Soc America Bull., v 71, no 12, pt 2, p 1852-1853, Dec 1960
- 2-60 The foraminiferal genus Orbitolina in North America U S Geol Survey Prof Paper 333, 52 p., illus, 1960.
- 3-60 Revision of the family Orbitolinidae Micropaleontology, v 6, no 3, p 249-270, illus, July 1960

DOUGLASS, William Bennett, Jr

- 1-60. Geology of the southern Butte Mountains, White Pine County, Nevada, in Geology of east central Nevada Intermountain Assoc Petroleum Geologists, 11th Ann Field Conf, 1960 Guidebook, p 181-185 incl geol. sketch map, 1960

DOUZE, Eduard Jan

- 1-60 Reflections and refractions of elastic waves from a transition layer [abs] Dissert Abs, v 21, no. 4, p 847-848, Oct 1960

DOVE, George D

- 1-60 Drainage of the Teays-stage Mount Vernon and Cambridge Rivers Ohio Jour Sci, v 60, no 2, p 122-124 incl index and sketch maps, Mar 1960

DOW, Robert L See TREFETHEN, Joseph Muzzy 1-60

DOW, Verne E

- 1-60 Magnetic separation of conodonts Jour Paleontology, v 34, no. 4, p 738-743 incl. diagrams, July 1960
- 2-60 Some notes on the occurrence of a coal seam in the Cedar Valley formation of Johnson County, Iowa Iowa Acad Sci Proc 1960, v 67, p 253-259, Dec 27, 1960.

DOWDESWELL, Wilfrid Hogarth

- 1-60 The mechanism of evolution 2d ed., reprinted, New York, N Y, Harper and Bros., 115 p incl diagrams, sketch maps, and tables, 1960.

DRAKE, Avery Ala, Jr.

- 1-60. (and DAVIS, Robert Ellis, and ALVORD, Donald C.) Taconic and post-Taconic folds in eastern Pennsylvania and western New Jersey Art 80 in U S Geol. Survey Prof Paper 400-B, p B180-B181, 1960
- 2-60. (and McLAUGHLIN, Dean Benjamin, and DAVIS, Robert Ellis) Geology of the Frenchtown quadrangle, New Jersey-Pennsylvania U.S Geol Survey Geol. Quad Map GQ-133, scale 1 24,000 (1 in to 2,000 ft), with sections and text, 1960

DRAKE, Charles Lum See also BECKMANN, W C 1-60

- 1-60 (and BECKMANN, Walter Charles) Transistorized Raydist as used in geological surveys Jour Geophys. Research, v 65, no 2, p 525-528 incl index map and diagrams, Feb 1960

## DRAKE

- 2-60 (and EWING, William Maurice) Structure of continental margin of northeastern North America [abs.] Am Assoc Petroleum Geologists Bull , v. 44, no 7, p 1248, July 1960.  
3-60 Recent trends in marine geophysical exploration [abs.] Geol. Soc. America Bull , v 71, no. 12, pt 2, p 2094, Dec 1960

### DRAKE, Dennis A

- 1-60 Millican and Millican East gas fields, Brazos County, Texas, in Jackson group, Catahoula and Oakville formations, and associated structures of northern Grimes County, Texas Houston Geol. Soc , Ann. Field Trip, May 1960, Guidebook, p. 11-13, illus , 1960

### DRAKE, N. D'Arcy. See SCHACKNE, Stewart 1-60

### DRAKE, Robert J.

- 1-60. (editor) Molluscs in archaeology and the Recent, [no ] 1 Vancouver, Univ British Columbia, Dept. Zoology, 7 p., Aug. 15, 1960, [no ] 2, p. 8-15, Dec 15, 1960  
2-60. Nonmarine molluscan remains from an archaeological site at La Playa, northern Sonora, Mexico [Pt. 1] Southern California Acad. Sci Bull. Sept.-Dec 1960, v 59, pt. 3, p. 133-137, illus , Dec. 31, 1960.

### DRASHEVSKA, L See TSYTOVICH, N A. 1-60

### DREESZEN, Vincent Harold. See REED, Eugene Clifton 1-60

### DREIMANIS, Aleksis See also de VRIES, Hessel 1-60

- 1-60 Geochemical prospecting for Cu, Pb, and Zn in glaciated areas, eastern Canada Internat Geol Cong , 21st, Copenhagen, 1960, Rept , pt 2, p 7-19 incl sketch maps, sections, diagrams, and table, 1960  
2-60. Pre-classical Wisconsin in the eastern portion of the Great Lakes region, North America Internat Geol. Cong , 21st, Copenhagen, 1960, Rept , pt 4, p 108-119 incl index and geol sketch maps and diagram, 1960  
3-60. Significance of carbonate determinations in till matrix [abs ] Geol. Soc America Bull., v. 71, no 12, pt 2, p 1853, Dec 1960.  
4-60 Tills of Southern Ontario [abs.] Royal Soc Canada Minutes Proc., 3d ser , v 54, App C, p 38-39, 1960

### DRESSEL, Waldemar M

- 1-60 (and RITCHEY, R. A.) Field test for beryllium U.S. Bur Mines Inf. Circ 7946, 5 p incl illus , 1960.

### DREVER, Harald Irving

- 1-60 Immiscibility in the picritic intrusion at Igdlorssait, west Greenland Internat Geol Cong., 21st, Copenhagen, 1960, Rept , pt. 13, p 47-58 incl diagrams, table, and illus , 1960.

### DREWES, Harald Dietrich

- 1-60. Origin of the Amargosa thrust fault, Death Valley area, California--A result of strike-slip faulting in Tertiary time Art. 121 in U. S. Geol. Survey Prof. Paper 400-B, p. B268-B270 incl. diagrams, 1960  
2-60. Bedding-plane thrust faults east of Connors Pass, Schell Creek Range, eastern Nevada Art 122 in U.S Geol. Survey Prof. Paper 400-B, p B270-B272 incl geol map and sections, 1960.  
3-60 Major structural features of the central parts of western Utah and eastern Nevada [abs ] Geol Soc America Bull., v 71, no. 12, pt. 2, p 1853-1854, Dec. 1960

### DROSTE, John Brown See GRIM, Ralph Early 3-60, HARRISON, Jack Lamar 1-60, HENRY, Gary E. 1-60

### DROSTE, Sophia

- 1-60 (and TEISSEYRE, Roman) The theory of the dislocation processes and its application to the Pacific region Seismol. Soc America Bull , v. 50, no 1, p 57-70 incl. diagrams, Jan 1960.

DROUANT, Ronald George

- 1-60. Stratigraphy and Ostracoda of the Exogyracostatazone of southwestern Arkansas [abs] Dissert Abs., v 20, no. 11, p 4367-4368, May 1960.

DuBAR, Jules Ramon

- 1-60 Leonardo da Vinci [1452-1519]--the geologist GeoTimes, v. 4, no 8, p 11-13, 37, May-June 1960

DUCKWORTH, H. E. See ISENOR, N. R 1-60

DUCLOZ, Ch

- 1-60. Apuntes sobre el yeso del Valle de Yumurf, Matanzas Soc Cubana Historia Nat Mem , v. 25, no 1, p 1-9, illus incl geol sketch map, Dec 10, 1960

DUFFUS, Henry John

- 1-60. (and SHAND, J. A., and WRIGHT, Charles) Influence of geological features on very low frequency geomagnetic fluctuations Nature (London), v 186, no 4719, p. 141-142, illus., Apr 9, 1960

DUFFY, J R

- 1-60. (and SMITH, Norman O , and NAGY, Bartholomew Stephen) Hydrocarbon phase equilibria--Studies in the system  $\text{CH}_4\text{-H}_2\text{O-NaCl-CaCl}_2$  at pressures to 1000 psi [abs] Geol. Soc America Bull, v 71, no 12, pt 2, p. 1854, Dec 1960.

DUKE, Alton

- 1-60 Arizona gem fields 4th ed., Yuma, Arizona, privately printed, [or Southwest Printers?] 130 p incl. sketch maps and illus , 1960, (originally published 1956 )

DUKE, C. Martin

- 1-60 Foundation and earth structures in earthquakes World Conf Earthquake Eng , 2d, Tokyo and Kyoto, Japan, July 11-18, 1960, Proc., v. 1, p 435-355 incl. tables, Tokyo, Sci Council Japan, 1960

DULIN, F H.

- 1-60 (and RASE, Daniel Edward) Phase equilibria in the system  $\text{ZnO-TiO}_2$  Am. Ceramic Soc. Jour., v. 43, no 2, p. 125-131 incl diagrams tables, Feb 1, 1960.

DUMANOIR, J. L. See DOLL, Henri-Georges 1-60

DUNBAR, Carl Owen See also PERMIAN SUBCOMMITTEE of the National Research Council's Committee on Stratigraphy 1-60

- 1-60 Geology 2d ed., New York, N Y., John Wiley and Sons, 500 p , 1960; (originally published 1949 )

DUNBAR, Moira

- 1-60 Thrust structures in young sea ice Jour. Glaciology (Cambridge, England), v 3, no 28, p 724-732, illus , and French and German abs , Mar. 1960

DUNLAP, Henry Francis

- 1-60. (and BRADLEY, John Samuel, and MOORE, Thomas Francis) Marine seep detection--A new reconnaissance exploration method Geophysics, v 25, no. 1, p 275-282 incl. diagrams, table, and illus , Feb. 1960  
2-60. (and BRADLEY, John Samuel, and MOORE, Thomas Francis) Marine seep detection--New reconnaissance exploration method [abs.] Am Assoc. Petroleum Geologists Bull , v 44, no 7, p 1248, July 1960

DUNLAP, John Crawford See KAYE, Clifford Alan 1-60

DUNN, Paul Heaney

- 1-60. Memorial to William Henry Shideler (1886-1958) Geol Soc America Proc. 1959, p. 147-150, portrait, Oct. 1960

## DUNNE

DUNNE, James Arthur See also BOLLIN, E. M 1-60

1-60. (and KERR, Paul Francis) An improved thermal head for D.T.A of corrosive materials *Am. Mineralogist*, v 45, nos. 7-8, p 881-883 incl diagrams, July-Aug. 1960

DUNNING, Herbert Neal See CHAMPLIN, J. B. F. 1-60, DWIGGINS, C. W., Jr. 1-60, 2-60, PARK, Roderic 1-60

DUQUETTE, Gilles

1-60 Preliminary report on Weedon area, Wolfe and Compton electoral districts Quebec Dept. Mines Geol. Surveys Br. Prelim. Rept. 416, 9 p., geol map, 1960, also French ed.

2-60. Preliminary report on Gould area, Wolfe and Compton electoral districts Quebec Dept Mines Mineral Deposits Br. Prelim. Rept. 432, 10 p , geol map, 1960, also French ed.

DURAND, J. L. See GELLER, Seymour 1-60

DUREN, Jack D

1-60. Some petrophysical aspects of the Mississippian "Chat" Glick Field, Kiowa County, Kansas Soc. Prof. Well Log Analysts, 1st. Ann. Logging Symposium, Tulsa, Oklahoma, May 16-17, 1960, Trans , 13 p. incl index and sketch maps, diagrams, table, and illus., paged separately, 1960

2-60. Some petrophysical aspects of the Mississippian "Chat" Glick Field, Kiowa County, Kansas Shale Shaker, v 11, no. 1, p 2-8 incl index and sketch maps, diagrams, table, and illus., Sept 1960.

DURHAM, Clarence Orson, Jr. See MURRAY, Grover Elmer 3-60

DURHAM, David P.

1-60. A microscopic study of the limestones of the Fort Payne formation [Alabama] [abs ] *Georgia Acad. Sci. Bull* , v 18, nos. 1-2, p. 13, Apr. 1960.

DURHAM, John Wyatt

1-60. (and ALLISON, Edwin Chester) Cretaceous and Cenozoic history of Northeastern Pacific echinoid faunas [abs ] *Geol. Soc. America Bull.*, v. 71, no 12, pt 2, p. 1854-1855, Dec. 1960.

2-60 Evolutionary trends in clypeasteroid echinoids [abs ] *Geol. Soc. America Bull* , v. 71, no. 12, pt. 2, p 2058, Dec. 1960

3-60. (and ALLISON, Edwin Chester) The geologic history of Baja California [Mexico] and its marine faunas, in Symposium--The biogeography of Baja California and adjacent seas--Pt 1, Geologic history Systematic Zoology, v 9, no 2, p. 47-91, illus , June 1960.

DURR, Fritz

1-60. El marco geológico [El Salvador] *Energía Geotérmica Informe*, no 1, p. 8-29 incl. sketch maps and diagrams [1960]

2-60. Manifestaciones geotermales en El Salvador *Energía Geotérmica Informe*, no. 1, p. 35-39 incl. sketch map [1960].

3-60 Desarrollo histórico [El Salvador] *Energía Geotérmica Informe*, no. 1, p 40-42 [1960]

4-60. La región de Ahuachapán [El Salvador] *Energía Geotérmica Informe*, no. 1, p 43-47 incl sketch maps [1960]

5-60. Mediciones calorimétricas [El Salvador] *Energía Geotérmica Informe*, no. 1, p. 86-88 [1960].

6-60. Importancia de estratos poco permeables *Energía Geotérmica Informe*, no. 1, p. 137-143 incl diagrams [1960].

7-60. Exploración del subsuelo [El Salvador] *Energía Geotérmica Informe*, no. 1, p. 151-178 incl. sketch map, tables, and diagrams [1960].

8-60. Informes de expertos extranjeros [El Salvador] *Energía Geotérmica Informe*, no. 1, p. 206-212 [1960]

9-60 Interpretaciones y recomendaciones *Energía Geotérmica Informe*, no. 1, p. 213-268 incl. diagrams [1960].

- 10-60. (and KLINGE, Hans) Die Verbreitung der jüngsten Bims-Aschen um San Salvador, El Salvador, Zentralamerika Neues Jahrb. Geologie u. Paläontologie Abh. (Stuttgart, Germany), Band 110, Heft 3, p 393-396, Aug. 1960.
- 11-60. (and KLINGE, Hans) Beiträge zur Stratigraphie und zur Paläopedologie des mittleren El Salvadors Neues Jahrb. Geologie u. Paläontologie Monatsh. (Stuttgart, Germany), Jahrg. 1960, Heft 3, p 111-132, illus. incl. geol. map, with a contribution by W. Haberland, Mar. 1960
- DURY, George Harry  
1-60. Misfit streams--Problems in interpretation, discharge, and distribution Geog. Rev., v. 50, no. 2, p. 219-242 incl. sketch map and diagrams, Apr. 1960.
- DUTCHER, Russell Richardson See also MANSFIELD, S. P. 1-60  
1-60. (and SPACKMAN, William, Jr.) Electron microscopic observation of vitrinitic materials [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1855, Dec. 1960
- DUTRO, John Thomas, Jr. See SANDO, William Jasper 4-60, YOCHELSON, Ellis Leon 3-60
- DUWELL, Ernest John. See CADWELL, Donald E. 1-60
- DWIGGINS, Claudius William, Jr.  
1-60. (and DUNNING, Herbert Neal) Quantitative determination of traces of vanadium, iron, and nickel in oils by x-ray spectrography Anal. Chemistry, v. 32, no. 9, p. 1137-1141 incl. tables, Aug. 1960  
2-60. (and LORENZ, Philip Boalt, and DUNNING, Herbert Neal) Colloidal nature of petroleum [abs.] Am. Assoc. Petroleum Geologists Bull., v. 44, no. 7, p. 1248, July 1960.
- DYCK, Willy J. See McCALLUM, Kenneth James 1-60
- DYKSTRA, L. J.  
1-60. X-ray study of the ternary system U-Al-O General Atomic Div., General Dynamics Corp., San Diego, California, Rept. GA-1479, 21 p., illus., Sept. 19, 1960
- DYSON, James Lindsay  
1-60. The geologic story of Glacier National Park [Montana] Glacier Nat. History Assoc. Spec. Bull. 3, 24 p., illus., revised, 1960, (originally published 1949)
- EADE, Kenneth Edgar See CANADA GEOL. SURVEY 25-60, 29-60
- EAGLESON, Peter Sturges  
1-60. (and DEAN, Robert George) Wave-induced motion of bottom sediment particles Am. Soc. Civil Engineers Proc., v. 85, paper 2202, Jour. Hydraulics Div., no. HY 10, pt. 1, p. 53-79, illus., Oct. 1959, discussion by Robert L. Miller, v. 86, paper 2489, no. HY 5, p. 129-131, May 1960
- EAKIN, Thomas Emory  
1-60. Ground-water appraisal of Newark Valley, White Pine County, Nevada. Nevada Dept. Conserv. and Nat. Resources Ground-Water Resources--Reconn. Ser. Rept. 1, 33 p., illus., Dec. 1960.
- EAKINS, P. R.  
1-60. The geologist's role in modern exploration Canadian Mining and Metall. Bull., v. 53, no. 583, p. 873-876, Nov. 1960, Canadian Inst. Mining and Metallurgy Trans., v. 63, p. 598-601, 1960.
- EAMES, F. E. See SMOUT, Alan H. 1-60, STAINFORTH, Robert Masterman 1-60

## EARDLEY

EARDLEY, Armand John. See also GOODE, H. D. 1-60

- 1-60. (and GVOSDETSKY, Vasyi) Analysis of Pleistocene core from Great Salt Lake, Utah Geol. Soc. America Bull., v. 71, no. 9, p. 1323-1344 incl. chart and tables, logs, Sept. 1960.
- 2-60. Igneous and tectonic provinces of western United States Internat. Geol. Cong., 21st, Copenhagen, 1960, Rept., pt. 13, p. 18-27 incl. geol. and tectonic sketch maps and sections, 1960.
- 3-60. Phases of orogeny in the deformed belt of southwestern Montana and adjacent areas of Idaho and Wyoming, in West Yellowstone--Earthquake area Billings Geol. Soc., 11th Ann. Field Conf., Sept. 1960, [Guidebook] p. 86-91 incl. geol. and tectonic sketch maps, 1960.
- 4-60. Phases of orogeny in the fold belt of western Wyoming and southeastern Idaho, in Overthrust belt of southwestern Wyoming and adjacent areas Wyoming Geol. Assoc., 15th Ann. Field Conf., 1960, Guidebook, p. 37-40 incl. sketch maps, 1960
- 5-60. The cause of mountain building--An enigma, in Science in progress, 11th ser., Taylor, H. S., ed., New Haven, Conn., Yale Univ. Press, p. 1-37, illus., 1960.

EARGLE, Dolan Hoye. See also WEEKS, A. D. 1-60

- 1-60. Uranium find heralds Texas wildcat action Oil and Gas Jour., v. 58, no. 10, p. 148, 150, 154-155, 158 incl. geol. and sketch maps, and sections, Mar. 7, 1960.
- 2-60. Stratigraphy of Pennsylvanian and lower Permian rocks in Brown and Coleman Counties, Texas U. S. Geol. Survey Prof. Paper 315-D, p. 55-77, illus. incl. geol. map, 1960.

EARL, Jack Franklin. See HENDERSON, Homer 1-60

## EARTH SCIENCE

- 1-60. Uncover bones of mastodon--Important new finds in Indiana Earth Sci., v. 13, no. 5, p. 178-179 incl. illus., Oct. 1960.

EASTERN NEVADA GEOLOGICAL SOCIETY. See INTERMOUNTAIN ASSOC. PETROLEUM GEOLOGISTS

EASTON, George B.

- 1-60. Report of Coal Mine Inspection Department from July 1, 1959 to June 30, 1960 North Dakota Coal Mine Inspection Dept., 42d Ann. Rept., 16 p., tables, 1960.

EASTON, William Heyden

- 1-60. Permian corals from Nevada and California Jour. Paleontology, v. 34, no. 3, p. 570-583 incl. section and illus., May 1960.
- 2-60. Invertebrate paleontology. New York, N. Y., Harper and Brothers, 701 p., illus., 1960

EASTWOOD, William Parker. See ANDERSON, Sidney Bakken 3-60

EATON, Gordon Pryor. See also JOHNSTON, J. E. 1-60

- 1-60. (and ROSENFELD, John Lang) Gravimetric and structural investigations in central Connecticut Internat. Geol. Cong., 21st, Copenhagen, 1960, Rept., pt. 2, p. 168-178 incl. geol. and tectonic sketch maps, sections, and tables, 1960
- 2-60. Ground distribution of wind-borne volcanic ash as a possible index to polar wandering [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1855, Dec. 1960

EATON, Jerry Paul

- 1-60. (and MURATA, Kiguma Jack) How volcanoes grow [Hawaii]. Science, v. 132, no. 3432, p. 925-938 incl. sketch map, diagrams, table, and illus., Oct. 7, 1960.
- 2-60 (and RICHTER, Donald Herman) The 1959 eruption of Kilauea [Hawaii] GeoTimes, v. 4, no. 5, p. 24-27, 45 incl. index map and illus., Jan.-Feb. 1960.

EATON, Robert Wesley

- 1-60. A resume of Jurassic exploration in northeast Texas [abs ] Gulf Coast Assoc. Geol. Soc. Trans., v 10, p 241, 1960

EATON, Theodore Hildreth, Jr

- 1-60. The aquatic origin of tetrapods. Kansas Acad. Sci. Trans , v. 63, no. 3, p. 115-120, illus , fall 1960  
 2-60. A new armored dinosaur from the Cretaceous of Kansas. Kansas Univ. Paleont. Contr. [25], Vertebrata, art. 8, 24 p , illus , Nov 21, 1960.  
 3-60. (and STEWART, Peggy Lou) A new order of fishlike amphibia from the Pennsylvanian of Kansas Kansas Univ. Mus. Nat History Pub., v 12, no. 4, p. 219-240, illus., May 2, 1960.

EBERHARDT, Peter

- 1-60. (and HESS, David Clarence) Helium in stone meteorites Astrophys. Jour , v 131, no. 1, p 38-46 incl diagrams and tables, Jan. 1960

ECHOLS, Dorothy J.

- 1-60. (and SCHAEFFER, Katherine M. M.) Microforaminifera of the Marianna limestone (Oligocene), from Little Stave Creek, Alabama Micro-paleontology, v. 6, no. 4, p. 399-415, illus , Oct 1960.

ECKEL, Edwin Butt

- 1-60 Opportunities and responsibilities of earth scientists in the nuclear age U. S. Geol Survey Circ 430, 8 p., 1960

ECKELMANN, Frank Donald. See KULP, John Laurence 2-60

ECKELMANN, Walter R

- 1-60. (and BROECKER, Wallace S., and KULP, John Laurence) Half-life of Pb210 [abs.] Phys Rev. Letters, v 4, no 5, p 262, Mar 1, 1960

ECKHARDT, Engelhardt August

- 1-60. William Schriever [1894-1958] Geophysics, v 25, no. 2, p 543-544 incl. portrait, Apr. 1960.

EDGERTON, J H See BOWEN, B M.

EDMONTON GEOLOGICAL SOCIETY

- 1-60. Rock Lake [Alberta], 2d annual field trip guide book, August 1960 Edmonton, Alberta, 98 p., illus. incl geol. maps, 1960 Includes individual papers which are cited separately

EDMUND, Alexander Gordon

- 1-60. Evolution of dental patterns in the lower vertebrates, in Evolution, its science and doctrine Royal Soc. Canada "Studia Varia" Ser. 4, p 45-62 incl. diagrams and table, 1960

EDWARDS, Acus Rex

- 1-60. Facies changes in Pennsylvania rocks along the north flank of the Wichita Mountains [Oklahoma] [abs ] Tulsa Geol. Soc Digest, v. 28, p 83, 1960.

EDWARDS, George See ADAMS, John Allan Stewart 4-60

EDWARDS, Robert Gary

- 1-60. Cretaceous Spinney Hill sand in west-central Saskatchewan Alberta Soc Petroleum Geologists Jour., v 8, no 5, p 141-153 incl. index, structure, and sketch maps, sections, diagrams, tables, and illus , May 1960.

EGBERT, Robert L See BILLINGS GEOL SOC.

EGE, John R. See PRUSOK, Rudl A. 1-60

EGGERT

EGGERT, Donald A.

- 1-60. (and DELEVORYAS, Theodore) *Callospermation*--A new seed genus from the Upper Pennsylvanian of Illinois Phytomorphology (Delhi, India), v. 10, no. 2, p. 131-138 incl. illus., July 1960

EHLERS, Ernest George

- 1-60. The properties and synthesis of the zeolite minerals Ohio State Univ. Coll. Eng. News Eng., v. 32, no. 2, p. 20-22, illus., Apr. 1960.

EHLERS, George Marion. See GALLOWAY, Jesse James 3-60

EHLMANN, Arthur J.

- 1-60. (and HULINGS, Neil Carlton, and GLOVER, Everett D.) Stages of glauconite formation in modern foraminiferal sediments [abs.]. Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1856, Dec. 1960

EICHER, Don L. See also WAAGÉ, K. M. 2-60

- 1-60. (and BRADDOCK, William Alfred) Landslide folds in the Dakota hogback of northern Colorado [abs.]. Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1856, Dec. 1960  
2-60 Stratigraphy and micropaleontology of the Thermopolis Shale [Wyoming] Yale Univ. Peabody Mus. Nat. History Bull. 15, 126 p., illus., 1960.

EICHOFF, Hans-J.

- 1-60. Spectrochemical rubidium-strontium method for geological age determination Appl. Spectroscopy, v. 14, no. 3, p. 74-76 incl. diagrams and tables, June 1960

EIRICH, Frederick Roland. See WEYL, Woldemar Anatol 1-60

EISENSTATT, Phillip

- 1-60. Little Creek field, Lincoln and Pike Counties, Mississippi [abs.]. Am. Assoc. Petroleum Geologists Bull., v. 44, no. 9, p. 1600, Sept. 1960  
2-60. Little Creek Field, Lincoln and Pike Counties, Mississippi Gulf Coast Assoc. Geol. Soc. Trans., v. 10, p. 206-213 incl. index, structure, and isopach maps, and sections, 1960.

EISHER, Robert Lloyd. See CARSOLA, Alfred James 1-60

EKBLAW, George Elbert. See FRYE, John Chapman 1-60

EKREN, Einar Bartlett. See ANDERSON, Lennart A. 2-60, FRISCHKNECHT, Frank Conrad 1-60

ELA, Robert E. See THOMSON, Robert D. 1-60

ELAM, Jack Gordon

- 1-60. Sedimentology of the west-central Taconic region, New York [abs.]. Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1857, Dec. 1960  
2-60. Geology of Troy South and East Greenbush quadrangles, New York [abs.]. Dissert. Abs., v. 21, no. 6, p. 1523-1524, Dec. 1960

ELARDE, Paul Frank

- 1-60. Fluorescence Earth Sci., v. 13, no. 6, p. 219-220, Dec. 1960.

ELBERTY, William T. See also BECK, C. W. 2-60, STOIBER, R. E. 1-60

- 1-60. (and GREENBERG, Seymour Samuel) Deltaite is crandallite plus hydroxylapatite [abs.]. Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1857, Dec. 1960.  
2-60 (and BECK, Carl Wellington) Effect of clay minerals on ceramic properties--Pt. 2, Results [abs.]. Am. Ceramic Soc. Bull., v. 39, no. 4, p. 239, 241, Apr. 1960.

ELIAS, Maxim Konrad

- 1-60. Marine Carboniferous of N. America and Europe Cong. Av. Études de Stratigraphie et de Géologie du Carbonifère, 4th, Sept. 15-20, 1958, Heerlen, Compte rendu, tome 1, p. 151-161, Maastricht, Netherlands, 1960



ELIASBERG, Vera F. See SCHURR, Sam H. 1-60

ELLIOTT, Douglas Howard

- 1-60. Reconnaissance photogeology--Cokeville NE quadrangle, in Overthrust belt of southwestern Wyoming and adjacent areas Wyoming Geol. Assoc., 15th Ann. Field Conf., 1960, Guidebook, p. 42-43 incl. photogeologic map, 1960

ELLIOTT, Robert Howard Jackson

- 1-60. Subsurface correlation of the Edmonton formation Alberta Soc. Petroleum Geologists Jour., v. 8, no. 11, p. 324-338 incl. index, structure, and isopach maps, diagram, and sections, Nov. 1960, reprinted from Edmonton Geol. Soc. Quart., v. 2, no. 2, p. 1-6, June 1958.

ELLIS, Brooks Fleming

- 1-60. (and MESSINA, Angelina Rose) Catalogue of Ostracoda, V. 15 New York, N. Y., Am. Mus. Nat. History Spec. Pub., [509] p., illus., 1960  
 2-60 (and MESSINA, Angelina Rose) Catalogue of Foraminifera, Supplement for 1959, no. 1 New York, N. Y., Am. Mus. Nat. History [710] p., illus., 1960  
 3-60. (and MESSINA, Angelina Rose) Catalogue of Ostracoda, V. 14 New York, N. Y., Am. Mus. Nat. History, unpag., illus., 1960

ELLIS, Charles W.

- 1-60. Marine sedimentary environments in the vicinity of the Norwalk Islands, Connecticut [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1857-1858, Dec. 1960

ELLIS, Jessie Bird

- 1-60. A statistical analysis of conodonts from the Upper Devonian of Missouri [abs.] Dissert. Abs., v. 20, no. 10, p. 4075, Apr. 1960

ELLIS, Michael J.

- 1-60. Use of chemical analysis for correlation of carbonate rocks [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 2033, Dec. 1960

ELLIS, William C.

- 1-60 The problem of perched ground water in northeastern Sacramento County, California [abs.] California Assoc. Eng. Geologists, 3d Ann. Mtg., Berkeley, Oct. 14-16, 1960, p. 7 [1960]

ELLISON, B. E., Jr. See PARKS, William Scott 1-60

ELLISON, Samuel Porter, Jr.

- 1-60. Thinking patterns for geologists Am. Assoc. Petroleum Geologists Bull., v. 44, no. 7, p. 980-983, July 1960  
 2-60. Thinking patterns for geologists Jour. Paleontology, v. 34, no. 4, p. 763-767, July 1960.  
 3-60 Oil and gas in north-central Texas, United States Internat. Geol. Cong., 21st, Copenhagen, 1960, Rept., pt. 11, p. 19-26 incl. index and structure maps and section, 1960, reprinted in Natural gas in the Southwest Southwestern Federation Geol. Soc. Trans., v. 1, p. 115-124, 1960

ELLS, Garland Delos. See also IVES, R. E. 1-60

- 1-60. Silurian oil and gas developments in Michigan Interstate Oil Compact Comm. Comm. Bull., v. 2, no. 1, p. 64-78, illus., June 1960.

ELSON, John

- 1-60. Soils of the glacial Lake Agassiz region [abs.] Royal Soc. Canada Minutes Proc., 3d ser., v. 54, App. C, p. 38, 1960

ELSON, John Albert. See CANADA GEOL. SURVEY 3-60

ELSTON, Donald Parker

- 1-60. (and LANDIS, Edwin Robert) Pre-Cutler unconformities and early growth of the Paradox Valley and Gypsum Valley salt anticlines, Colorado

## ELSTON

- Art. 118 in U. S. Geol. Survey Prof Paper 400-B, p. B261-B265 incl geol. and index maps, section, and diagram, 1960.
- 2-60 Early growth of the salt anticlines of the Paradox Basin, Colorado and Utah [abs.] Geol Soc. America Bull., v 71, no. 12, pt. 2, p. 1858, Dec 1960.
- 3-60. (and SHOEMAKER, Eugene Merle) Late Paleozoic and early Mesozoic structural history of the Uncompahgre front [Colorado Plateau], in Geology of the Paradox Basin fold and fault belt Four Corners Geol. Soc., 3d Field Conf., 1960, [Guidebook] p. 47-55, illus., 1960.

## ELSTON, Wolfgang Eugene

- 1-60. Structural development and Paleozoic stratigraphy of Black Mesa basin, northeastern Arizona, and surrounding areas Am. Assoc. Petroleum Geologists Bull., v. 44, no. 1, p. 21-36 incl. sketch maps, chart, and table, Jan. 1960.
- 2-60. Reconnaissance geologic map of Virden thirty-minute quadrangle New Mexico Bur. Mines and Mineral Resources Geol. Map 15, scale 1 126,720 (1 in to 2 mi), with section, 1960

## EMELEUS, Charles H. See HARRY, William Trevelyan 1-60

## EMERSON, Alfred Edwards. See HUXLEY, Julian Sorell 1-60

## EMERSON, Donald Orville

- 1-60. Structure and composition of potassium feldspar from the Inyo batholith, California-Nevada [abs.] Geol. Soc America Bull., v 71, no. 12, pt. 2, p. 1858-1859, Dec. 1960.
- 2-60. Modal variations within an outcrop of the Sagehen adamellite [abs.] Geol Soc America Bull., v. 71, no. 12, pt. 2, p. 2058, Dec. 1960.

## EMERSON, William Keith. See also JOHNSON, R. G. 1-60

- 1-60. Results of the Puritan-American Museum of Natural History Expedition to western Mexico--[Pt.] 11, Pleistocene invertebrates from Cerralvo Island Am. Mus. Novitates, no 1995, 6 p. incl index map, Mar. 29, 1960
- 2-60. Pleistocene invertebrates from near Punta San José, Baja California, Mexico Am. Mus. Novitates, no 2002, 7 p incl. sketch map, Mar. 29, 1960
- 3-60. (and HERTLEIN, Leo George) Pliocene and Pleistocene invertebrates from Punta Rosalia, Baja California, Mexico Am. Mus. Novitates, no. 2004, 8 p. incl. sketch map and illus., May 2, 1960.
- 4-60. Results of the Puritan-American Museum of Natural History Expedition to western Mexico--[Pt.] 12, Shell middens of San José Island Am. Mus Novitates, no. 2013, 9 p. incl. illus., Aug. 18, 1960.

## EMERY, Kenneth Orris See also BROMERY, R. W 2-60, BYRNE, J. V. 1-60

- 1-60. Basin plains and aprons off southern California Jour. Geology, v. 68, no. 4, p. 464-479 incl. sketch maps and diagrams, July 1960
- 2-60. Dependence of petroleum source materials on rate of burial [abs.] Am. Assoc. Petroleum Geologists Bull., v. 44, no. 7, p. 1248-1249, July 1960.
- 3-60. The sea off southern California--a modern habitat of petroleum New York, N. Y., John Wiley and Sons, 366 p., illus., 1960.

## EMIGH, George Donald

- 1-60. Phosphate rock--Geology, Chap. 2 in Chemistry and technology of fertilizers, Sauchelli, V., ed New York, N Y, Reinhold Publishing Corp., p. 55-67 incl. diagram and illus., 1960.

## EMILIANI, Cesare. See also HEEZEN, B. C. 1-60

- 1-60. Dating human evolution, in Tax, S., ed, Evolution after Darwin, V. 2 Chicago, Ill., Univ Chicago Press, p. 57-66, illus., 1960
- 2-60. Deep-sea sediments Am Geophys Union Trans., v. 41, no 2, p. 275-279, June 1960

## EMMONS, Richard Conrad

- 1-60 (and CRUMP, R. M., and KETNER, Keith B.) High- and low-temperature plagioclase Geol. Soc America Bull., v 71, no 9, p 1417-1420 incl. diagrams, Sept. 1960.

EMMONS, William Harvey, 1876-1948

1-60. (and others) *Geology--principles and processes* 5th ed., New York, N Y., McGraw-Hill Book Co., 491 p , illus., 1960, (originally published 1932.)

EMPSON, F M. See PARKER, Frank L. 1-60, 2-60

EMRICH, Grover Harry. See also ATHERTON, Elwood 1-60

1-60. Cross-bedding and textural variations of the Miocene Hawthorne Formation in northern Florida *Jour Sed. Petrology*, v. 30, no. 4, p 561-567 incl index and sketch maps and diagram, Dec. 1960.

ENCK, Ernest G.

1-60 Strontium minerals, in *Am. Inst Mining, Metall., and Petroleum Engineers, Industrial minerals and rocks*, p 815-818 incl. tables, 1960

ENGEL, Albert Edward John

1-60. (and ENGEL, Celeste G.) Migration of elements during metamorphism in the northwest Adirondack Mountains, New York *Art. 212 in U. S Geol Survey Prof. Paper* 400-B, p B465-B470 incl. geol sketch map, diagrams, and table, 1960.

2-60 (and ENGEL, Celeste G ) Progressive metamorphism and granitization of the major paragneiss, northwest Adirondack Mountains, New York--Pt. 2, Mineralogy, with analyses of trace elements, by A. A Chodos and Elisabeth Godijn *Geol Soc. America Bull* , v. 71, no. 1, p 1-57 incl diagrams and tables, also geol map and illus , Jan. 1960.

3-60 (and WRIGHT, Lauren Albert) Talc and soapstone, in *Am Inst. Mining, Metall., and Petroleum Engineers, Industrial minerals and rocks*, p. 835-850 incl. map, diagrams, tables, and illus , 1960

ENGEL, Celeste G. See ENGEL, Albert Edward John 1-60, 2-60

ENGEL, James E. See SHEARER, Eugene Merle 1-60, 2-60

ENGELHARDT, Donald W

1-60. A comparative pollen study of two early Wisconsin bogs in Indiana *Indiana Acad Sci. Proc.* 1959, v. 69, p. 110-118, illus., 1960

ENGINEERING and MINING JOURNAL

1-60 Quebec's columbium will be tapped *Eng and Mining Jour.*, v. 161, no. 10, p. 92-95 incl sketch map and diagrams, Oct 1960

ENGLAND, Joseph Loveday. See BOYD, Francis R 1-60, 2-60, 3-60, 4-60

ENGLE, Eloise

1-60. Men on the mountain [Hawaii] *Natl. Parks Mag.*, v. 34, no. 148, p 4-6 incl. sketch map and illus., Jan. 1960.

ENGLUND, Kenneth John

1-60. (and SMITH, Henry Landiss) Intertonguing and lateral gradation between the Pennington and Lee formations in the Tri-State area of Kentucky, Tennessee, and Virginia [abs ]: *Geol. Soc. America Bull* , v 71, no. 12, pt 2, p 2015, Dec 1960.

ENRIGHT, Robert J

1-60. Scientists solving reservoir mystery *Oil and Gas Jour.*, v. 58, no. 37, p. 66-68 incl. illus., Sept. 12, 1960.

ENZMANN, Robert Duncan

1-60. Morphology of frost polygons as related to ground slope in eastern Greenland *Iowa Acad Sci Proc.* 1960, v. 67, p. 357-361 incl illus , Dec. 27, 1960.

EPSTEIN, Samuel See SHARP, Robert Phillip 2-60, TAYLOR, H. P., Jr. 2-60, 3-60

ERD, Richard Clarkson. See also BENDA, W. K. 1-60  
1-60. (and GREENBERG, Seymour Samuel) Minerals of Indiana Indiana Geol. Survey Bull. 18, 73 p, illus. incl. geol. map, Sept. 1960.

ERDMAN, John Gordon  
1-60. (and HANSON, William Ellum) Sources and modes of genesis of nitrogen and sulphur compounds in crude oils [abs.] Am. Assoc. Petroleum Geologists Bull., v. 44, no. 7, p. 1249, July 1960.

ERDMANN, Charles Edgar See FISHER, Daniel Jerome 4-60

ERGUN, Sabri. See also MENTSER, Morris 1-60  
1-60. (and MENTZER, Morris, and O'DONNELL, Hugh John) Three-dimensional x-ray reflections from anthracite and meta-anthracite Science, v. 132, no. 3436, p. 1314-1316 incl. diagrams, Nov. 4, 1960.  
2-60. (and DONALDSON, W. F., and BREGER, Irving Arthur) Some physical and chemical properties of vitrains associated with uranium Fuel (London), v. 39, no. 1, p. 71-77, illus., Jan. 1960.  
3-60. (and McCARTNEY, James Thomas) Reflectance of coals, graphite and diamond Fuel (London), v. 39, no. 6, p. 449-454 incl. diagrams and tables, Nov 1960.

ERICKSON, Bruce R.  
1-60. Prospecting for dinosaurs in Montana Mus. Observer, v. 1, no. 1, p. 2-4, 1960.

ERICKSON, G. P.  
1-60. (and KULP, John Laurence) Potassium-argon measurements on the Palisades diabase [New Jersey] and associated basalts [abs.] Jour. Geophys. Research, v. 65, no. 8, p. 2487-2488, Aug. 1960.

ERICKSON, L. G. See MULLIS, Ira B. 1-60

ERICKSON, Ralph LeRoy  
1-60. (and MARRANZINO, Albert P.) Geochemical prospecting for copper in the Rocky Range, Beaver County, Utah Art. 47 in U S. Geol Survey Prof. Paper 400-B, p. B98-B101 incl. geochem.-geol. maps, 1960.

ERICSON, David Barnard See EWING, William Maurice 1-60, GRIFFIN, James B. 1-60

ERNSBERGER, F. M.  
1-60. Structural effects in the chemical reactivity of silica and silicates, in Symposium on defect structure of quartz and glassy silica Physics and Chemistry Solids, v. 13, nos. 3-4, p. 347-351, illus., June 1960.

ERNST, Wallace Gary  
1-60. Stability relations of riebeckite and riebeckite-arfvedsonite solid solutions [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1859, Dec. 1960.  
2-60. Diabase-granophyre relations in the Endion sill, Duluth, Minnesota [abs.]. Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 2058-2059, Dec. 1960.  
3-60. Diabase-granophyre relations in the Endion sill, Duluth, Minnesota Jour. Petrology (Oxford, England), v. 1, no. 3, p. 286-303 incl. geol. sketch map, sections, diagram, and tables, Oct. 1960.  
4-60. Glaucophane stability and the glaucophane schist problem [abs.] Washington Acad. Sci. Jour., v. 50, no. 7, p. 2-3, Nov. 1960.

ESPACH, Ralph Homeward, Jr See also BIGGS, Paul 1-60  
1-60. (and ROYSE, Frank, Jr.) Stratigraphic variations in the eastern Big Hole Mountains, Teton and Bonneville Counties, Idaho, in Overthrust belt of southwestern Wyoming and adjacent areas Wyoming Geol. Assoc., 15th Ann. Field Conf., 1960, Guidebook, p. 61-71 incl. geol. map and sections, also chart, 1960.

ESPENSHADE, Gilbert Howry

- 1-60. (and POTTER, Donald B.) Kyanite, sillimanite, and andalusite deposits of the southeastern States U. S. Geol. Survey Prof. Paper 336, 121 p., illus. incl. geol. maps, 1960.

ESTES, Richard. See also HECHT, M. K. 1-60

- 1-60. Change of name for a Cretaceous chimaeroid Jour. Paleontology, v. 34, no. 5, p. 1054, Sept. 1960.

ETHERIDGE, Richard

- 1-60. The Pliocene lizard genus *Eumecoides* Taylor Southern California Acad. Sci. Bull., May-Aug. 1960, v. 59, pt. 2, p. 62-69, Aug. 23, 1960

ETHINGTON, Raymond Lindsay

- 1-60 (and FURNISH, William Madison, Jr.) Upper Ordovician conodonts from southern Manitoba Jour. Paleontology, v. 34, no. 2, p. 265-274 incl. table, and illus., Mar. 1960.

EUBANKS, Wallace

- 1-60. Fossil woods of Oregon Ore.-Bin, v. 22, no. 7, p. 65-69 incl. index map and sections, July 1960

EUGSTER, Hans Peter

- 1-60 (and WRIGHT, Thomas L.) Synthetic hydrous boron micas. Art. 202 in U. S. Geol. Survey Prof. Paper 400-B, p. B441-B442 incl. tables, 1960  
2-60. (and PROSTKA, Harold J.) Synthetic scapolites [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1859-1860, Dec. 1960

EVANS, Arthur Lynden

- 1-60. Red River formation [Manitoba]--Structural and stratigraphic interpretation [abs.] Am. Assoc. Petroleum Geologists Bull., v. 44, no. 6, p. 955, June 1960.  
2-60 The Red River formation in Saskatchewan and Manitoba--A structural and stratigraphic interpretation. Am. Assoc. Petroleum Geologists Rocky Mtn. Sec. Geol. Record 1960, p. 103-122 incl. illus. [1960].

EVANS, David LeCount

- 1-60 (and MAYO, Evans Blakemore) Discussion--Lineament tectonics and some ore districts of the southwest. Am. Inst. Mining, Metall., and Petroleum Engineers Trans. 1959, v. 214, p. 612, 1960.

EVANS, Glen Louis See VERTREES, Charles David 1-60

EVANS, Howard Tasker, Jr. See also MORIMOTO, Nobuo, 4-60, SKINNER, B. J. 2-60

- 1-60. (and MROSE, Mary Emma) A crystal chemical study of the vanadium oxide minerals, haggite and doloresite Am. Mineralogist, v. 45, nos. 11-12, p. 1144-1166 incl. diagrams, tables and illus., Nov.-Dec. 1960.  
2-60. Recent developments in the crystal chemistry of vanadium oxide minerals Art. 203 in U. S. Geol. Survey Prof. Paper 400-B, p. B443-B446 incl. diagrams and table, 1960.  
3-60. Square pyramid coordination in polyvanadate complexes [abs.]. Acta Cryst., v. 13, pt. 12, p. 1019, Dec. 1960.  
4-60. Crystal structure refinement and vanadium bonding in the metavanadates  $KVO_3$ ,  $NH_4VO_3$  and  $KVO_3 \cdot H_2O$  Zeitschr. Kristallographie (Frankfurt am Main, Germany), Band 114 Heft 3-4, p. 257-277 incl. diagrams and tables, with German abs., Oct. 1960.

EVANS, James R

- 1-60. Grain size of fragmental sedimentary rocks California Div. Mines Mineral Inf. Service, v. 13, no. 9, 8 p., illus., Sept. 1960.

EVERHART, Donald Lough. See NININGER, Robert D. 1-60, WRIGHT, Robert James 1-60

## EVERNDEN

EVERNDEN, Jack Foord. See also SAVAGE, D. E. 1-60

- 1-60. (and others) Argon diffusion in glauconite, microcline, sanidine, leucite and phlogopite Am. Jour. Sci., v. 258, no. 8, p. 583-604 incl. diagrams and tables, Oct. 1960

EVISON, F. F.

- 1-60. On the growth of continents by plastic flow under gravity. Royal Astron. Soc. Geophys. Jour. (London), v. 3, no. 2, p. 155-190 incl. sections and diagrams, June 1960.

EWING, John Isaac. See also LUSKIN, Bernard 1-60

- 1-60. (and others) Sub-bottom reflection measurements on the continental shelf, Bermuda banks, West Indies Arc, and in the west Atlantic basins: Jour. Geophys. Research, v. 65, no. 9, p. 2849-2859 incl. sketch map and diagrams, Sept. 1960.
- 2-60. (and ANTOINE, John Woodworth, and EWING, William Maurice) Geophysical measurements in the western Caribbean Sea and in the Gulf of Mexico Jour. Geophys. Research, v. 65, no. 12, p. 4087-4126 incl. index maps, physiographic chart, sections, diagrams, and table, Dec. 1960.
- 3-60. (and EWING, William Maurice, and FRAY, C.) Buried erosional terrace on the edge of the continental shelf east of New Jersey [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1860, Dec. 1960.

EWING, William Maurice. See also BROECKER, W. S., 1-60, 2-60, DORMAN, H. J. 2-60, DRAKE, C. L. 2-60, EWING, J. I. 2-60, 3-60, HUNKINS, Kenneth Leland 1-60, OLIVER, Jack Ertle 1-60, SATO, Yasuo 1-60, TALWANI, Manik 1-60, 2-60

- 1-60. (and DONN, William L.) On Pleistocene surface temperatures of the North Atlantic and Arctic Oceans Science, v. 131, no. 3393, p. 99, Jan. 8, 1960, discussion of paper by Ericson, D. B., v. 130, no. 3369, p. 219-220, July 24, 1959.
- 2-60. (and DONN, William L., and FARRAND, William Richard) Revised estimate of Pleistocene ice volume and sea-level lowering [abs.]. Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1861, Dec. 1960.
- 3-60. The ice ages--Theory Alberta Soc. Petroleum Geologists Jour., v. 8, no. 7, p. 191-201 incl. sketch maps, July 1960.
- 4-60. Earth's crust below the oceans and in continents Am. Geophys. Union Trans., v. 41, no. 2, p. 172-173, June 1960.

EWOLDT, Harold Boaden

- 1-60. Gideon A[sof] Apell [1887-1959]--An appreciation Mining Eng., v. 12, no. 4, p. 405-406, Apr. 1960.

FABRE, René

- 1-60. (and CHAIGNEAU, Marcel) Technique de prélèvement et d'analyse de gaz de fumeroles de volcans--Exemples d'analyses de gaz prélevés à montagne Pelée (Martinique) et à la Grande Soufrière (Guadeloupe): Bull. Volcanol. (Naples, Italy), sér. 2, tome 23, p. 21-30 incl. sketch maps and tables, with discussion, 1960.

FAGAN, John J.

- 1-60. Origin of bedded cherts, turbidites, and volcanic rocks of the Carboniferous of Northern Independence Range, Nevada [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1861, Dec. 1960.

FAGAN, Sylvia Robinson

- 1-60. Osteology of Mylagaulus laevis, a fossorial rodent from the upper Miocene of Colorado Kansas Univ. Paleont. Contr. [26], Vertebrata, art. 9, 32 p., illus., Nov. 21, 1960.

FAGERSTROM, John Alfred

- 1-60. The age, stratigraphic relations, and fauna of the Middle Devonian Formosa reef limestone of southwestern Ontario [abs.] Dissert. Abs., v. 20, no. 12, p. 4633, June 1960.
- 2-60. The correlation of the Middle Devonian Formosa reef limestone of southwestern Ontario [abs.] Nebraska Acad. Sci. Proc., 70th Ann. Mtg., p. 15 [1960].

- FAHEY, Joseph John. See also MILTON, Charles 2-60, 3-60, 5-60  
 1-60. (and ROSS, Malcolm, and AXELROD, Joseph Meyer) Loughlinite, a new hydrous sodium magnesium silicate *Am. Mineralogist*, v. 45, nos. 3-4, p. 270-281 incl. diagrams and tables, Mar.-Apr. 1960.
- FAHNESTOCK, C. R.  
 1-60. Use of seismic techniques in analyzing subsurface materials [abs.]. *Mining Eng.*, v. 12, no. 12, p. 1249, Dec. 1960.
- FAHNESTOCK, Robert Kendall  
 1-60. Morphology and hydrology of a glacial stream [abs.] *Geol. Soc. America Bull.*, v. 71, no. 12, pt. 2, p. 1862, Dec. 1960.  
 2-60. Significance of a braided channel pattern [abs.]. *Geol. Soc. America Bull.*, v. 71, no. 12, pt. 2, p. 1862, Dec. 1960.  
 3-60. Morphology and hydrology of a glacial stream [Washington] [abs.]: *Dissert. Abs.*, v. 21, no. 6, p. 1524, Dec. 1960.
- FAHRIG, Walter Frederick  
 1-60. Shabogamo Lake, Newfoundland and Quebec. *Canada Geol. Survey Paper* 60-9, 4 p., geol. map, 1960
- FAICK, John Nicholas  
 1-60. Stratigraphy, structure and composition of cement materials in north central California [abs.] *Arizona Geol. Soc. Digest*, v. 3, p. 172-173, Mar. 1960.
- FAILS, Thomas Glenn, Jr.  
 1-60. Permian stratigraphy at Carlin Canyon, Nevada: *Am. Assoc. Petroleum Geologists Bull.*, v. 44, no. 10, p. 1692-1703 incl. geol. map and sections, Oct. 1960.
- FAIRBAIRN, Harold Williams. See also HART, S. R. 1-60, HURLEY, P. M. 1-60  
 1-60. (and HURLEY, Patrick Mason, and PINSON, William Hamet, Jr., and CORMIER, Randall F.) Age of the granitic rocks of Nova Scotia. *Geol. Soc. America Bull.*, v. 71, no. 4, p. 399-413 incl. diagrams and tables, geol. index map, Apr. 1960.  
 2-60. (and PINSON, William Hamet, Jr., and HURLEY, Patrick Mason) Comparison of Rb-Sr mineral and whole-rock ages at Sudbury, Ontario [abs.] *Jour. Geophys. Research*, v. 65, no. 8, p. 2488-2489 incl. table, Aug. 1960.  
 3-60. (and HURLEY, Patrick Mason, and PINSON, William Hamet, Jr.) Mineral and rock ages at Sudbury-Blind River, Ontario. *Geol. Assoc. Canada Proc.*, v. 12, p. 41-66, illus., Dec. 1960.
- FAIRBRIDGE, Rhodes Whitmore. See also NEWMAN, W. S. 1-60, 2-60  
 1-60. Long-range correlation of solar radiation, climate, and sea-level cycles [abs.] *Jour. Geophys. Research*, v. 65, no. 8, p. 2489, Aug. 1960.  
 2-60. Convergence of evidence on climatic change and ice ages [abs.]: *Geol. Soc. America Bull.*, v. 71, no. 12, pt. 2, p. 2095, Dec. 1960.  
 3-60. The changing level of the sea. *Sci. Am.*, v. 202, no. 5, p. 70-79 incl. sketch maps, diagrams, and illus., May 1960.
- FANG, Jen-Ho. See BROWN, W. Liddle 1-60
- FANSHAWE, John Richardson, 2d  
 1-60. Significance of interruptions to hydrodynamics in Northern Rocky Mountain Province, U.S.A. *Internat. Geol. Cong.*, 21st, Copenhagen, 1960, Rept., pt. 11, p. 7-18 incl. index and structure maps and section, 1960.  
 2-60. New interpretation for Wolf Springs field, Montana [abs.] *Am. Assoc. Petroleum Geologists Bull.*, v. 44, no. 6, p. 955-956, June 1960.  
 3-60. A new interpretation--Wolf Springs Field [Montana] *Am. Assoc. Petroleum Geologists Rocky Mtn. Sec. Geol. Record* 1960, p. 49-57 incl. index and structure maps, and sections [1960].

## FARKAS

FARKAS, Steven Eugene

- 1-60. Cross-lamination analysis in the Upper Cambrian Franconia Formation of Wisconsin Jour. Sed. Petrology, v 30, no. 3, p. 447-458 incl. sketch maps, sections, diagrams, and tables, Sept 1960.

FARLEY, Thomas Albert

- 1-60. Half-period of  $\text{Th}^{232}$  Canadian Jour. Physics, v. 38, no 8, p 1059-1068 incl. diagrams and tables, Aug 1960.

FARLEY, William Horace

- 1-60. A pedologic study of the Aura soil [New Jersey] [abs.] Dissert. Abs., v. 20, no. 11, p. 4225, May 1960

FARQUHAR, Oswald Cornell

- 1-60 Occurrences and origin of the hourglass structure Internat. Geol. Cong , 21st, Copenhagen, 1960, Rept.,pt. 21, p 194-200 incl. illus., 1960.

FARQUHAR, Ronald McCunn See also RUSSELL, R. Doncaster 3-60

- 1-60. (and RUSSELL, Richard Doncaster) Isotopic abundance variations in lead minerals from the Cobalt and Sault Ste. Marie regions of Ontario [abs ] Royal Soc. Canada Minutes Proc., 3d ser., v. 54, App. C, p. 35, 1960.

FARR, Thomas Howard See SANDERSON, Milton William 1-60

FARRAND, William Richard. See also EWING, W. M. 2-60

- 1-60. Comparative rates of late glacial and postglacial uplift in North America [abs ] Geol. Soc America Bull , v. 71, no. 12, pt. 2, p 1862-1863, Dec. 1960

FASSEL, Velmer Arthur

- 1-60 Analytical spectroscopy of the rare earths Anal Chemistry, v. 32, no 11, p. 19A-46A incl. ads , diagrams and tables, Oct 1960

FATT, Irving. See MANN, Robert L 1-60

FAUL, Henry

- 1-60 Geologic time scale Geol. Soc. America Bull., v 71, no 5, p 637-644 incl tables, May 1960.

FAXON, Richard Dike

- 1-60 Geological review of waterflood prospects, in Symposium on geology and secondary recovery Tulsa Geol Soc. Digest, v 28, p 33-42 incl diagrams, 1960.

FAY, Robert Oran

- 1-60. Ptychoblastus, a new Mississippian blastoid from Missouri Jour Paleontology, v. 34, no. 6, p. 1198-1201 incl. illus., Nov. 1960.  
2-60 The type of Nucleocrinus Conrad Oklahoma Geology Notes, v 20, no 9, p 236-239, illus , Sept 1960.  
3-60 The "pores" of Stephanocrinus Conrad Oklahoma Geology Notes, v. 20, no 10, p 256-259, illus , Oct 1960.  
4-60. The type species of Globoblastus Hambach Oklahoma Geology Notes, v 20, no 11, p 292-299, illus., Nov 1960.

FECHTIG, H

- 1-60. (and GENTNER, W., and Zähringer, J.) Diffusion loss of argon in minerals and its effect on the potassium-argon age measurements [abs.] Jour Geophys Research, v. 65, no 8, p 2489, Aug. 1960.

FEDER, Allen M

- 1-60. Interpreting natural terrain from radar displays Photogramm Eng., v 26, no 4, p 618-630 incl. geol sketch map, diagrams, charts, section, and illus., Sept 1960

FEDOROFF, M. See FEDOROFF, N. 1-60



## FEDOROFF, N.

- 1-60. (and FEDOROFF, M.) Le loess en Amérique du Nord Rev. Géo-graphie Phys. et Géologie Dynamique (Paris), 2<sup>e</sup> sér., v 3, fasc 3, p 167-172 incl. sketch maps and table, July-Sept 1960

FEHRMAN, Rollie Gregg. See LANE, Kenneth Stacy 1-60FEIERABEND, Raymond H. See LEE, Clarence O. 1-60FELD, Jacob. See MULLIS, Ira B 1-60

## FELIX, Charles Jeffrey

- 1-60 Some neglected aspects of plant microfossil research Ohio Jour. Sci., v 60, no. 2, p 88-93, Mar. 1960.

## FELLOWS, Ralph Sanborn

- 1-60. The influence of climatic factors on the geomorphology of a part of the Coastal Plain of northern Alaska [abs ] Dissert. Abs , v 20, no 11, p. 4368, May 1960.

## FENTON, Carroll Lane

- 1-60. Wildlife through Arizona's ages Arizona Highways, v 36, no 3, p 32-35, illus , Mar 1960.

## FENTRESS, George Howard

- 1-60. The Denver Basin of Colorado, Chap 13 in Mineral resources of Colorado, 1st sequel Denver, Colorado Mineral Resources Board, p. 505, 507-530 incl. index and sketch maps, diagrams, and tables, 1960.

## FERENCZI, István

- 1-60. Structural control of the North Carolina Coastal Plain Southeastern Geology, v. 1, no. 3, p 105-116, illus., Autumn 1959, erratum, no. 4, p 155, 1959 [Apr. 1950].

FERGUSON, Herman W. See KING, Philip Burke 2-60

## FERGUSON, Hershhal Cevera, Jr.

- 1-60. Turtle Bayou-Kent Bayou-North Turtle Bayou complex [Louisiana] [abs ] Am Assoc Petroleum Geologists Bull., v 44, no. 9, p 1600-1601, Sept. 1960  
2-60. The Turtle Bayou-Kent Bayou-North Turtle Bayou Complex [Louisiana] Gulf Coast Assoc Geol. Soc's Trans., v. 10, p 188-199 incl index, structure, and isopach maps, and sections, 1960

## FERGUSON, Robert Bury

- 1-60 The low-temperature phases of the alkali feldspars and their origin Canadian Mineralogist, v 6, pt 4, p. 415-436, illus , 1960

FERGUSON, Stewart Alexander See also CHISHOLM, E O 1-60

- 1-60 Prospecting activities in Bateman township, Red Lake area, Ontario Canadian Mining Jour , v. 81, no. 4, p. 76-77 incl geol sketch map, Apr 1960  
2-60. (and others) Tisdale township, southwest quarter Ontario Dept. Mines Prelim Geol. Map P 7, revised, geol map, scale 1 in to 500 ft , with separate legend, 1960.  
3-60. (and others) Tisdale township, southeast quarter Ontario Dept. Mines Prelim. Geol. Map P.8, revised, geol. map, scale 1 in. to 500 ft., with separate legend, 1960  
4-60. (and others) Bateman township, south half Ontario Dept. Mines Prelim Geol. Map [P.40], scale 1 in. to 1,000 ft [Jan. 20, 1960].

FERGUSON, William Sidney. See also BAKER, D. R. 1-60

- 1-60 Analytical problems in determining hydrocarbons in sediments [abs ] Geol Soc America Bull , v. 71, no. 12, pt 2, p 1863, Dec. 1960

## FERM

FERM, John Charles

- 1-60. (and WILLIAMS, Eugene Griffin) Stratigraphic variation in some Allegheny rocks of western Pennsylvania Am. Assoc Petroleum Geologists Bull , v. 44, no 4, p 495-497 incl. sections and table, Apr. 1960

FERNALD, Arthur Thomas

- 1-60. Geomorphology of the upper Kuskokwim region, Alaska U. S. Geol Survey Bull. 1071-G, p 191-279, illus incl geol maps, 1960.

FETH, John Henry

- 1-60. Chemical characteristics of waters from selected monolithologic terranes [abs ] Geol. Soc America Bull., v 71, no. 12, pt. 2, p 1863-1864, Dec. 1960.

FESSENDEN, Franklin Wheeler

- 1-60 A petrologic investigation of the Manlius and Coeymans limestones [abs ] New York Acad. Sci. Trans , ser 2, v 22, no. 3, p 173, Jan. 1960
- 2-60. A petrologic investigation of the Manlius and Coeymans limestones New York Acad Sci. Annals, v 84, art 8, p. 287-302, illus., June 24, 1960.

FETTKE, Charles Reinhard

- 1-60. Jesse B. Miller No. 1 well, Napier Township, Bedford County Pennsylvania Geol Survey, 4th ser , Well-sample Record, no. 56, 43 p incl tables, 1960.

FETZNER, Richard Walter

- 1-60 Pennsylvanian paleotectonics of Colorado Plateau Am Assoc. Petroleum Geologists Bull., v. 44, no. 8, p 1371-1413 incl paleotectonic and stratigraphic-lithologic maps, and chart, Aug 1960.

FEULNER, Alvin J.

- 1-60. (and HUBBLE, John H ) Occurrence of strontium in the surface and ground waters of Champaign County, Ohio Econ. Geology, v. 55, no. 1, p 176-186 incl. geol. sketch maps and tables, Jan -Feb. 1960

FIELD, A J See BAUER, R. F. 1-60

FIELD, C. W

- 1-60 (and JENSEN, Mead LeRoy) Sulfur isotope geology of vein-type and sandstone-type uranium deposits [abs ] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p 1864, Dec 1960, Econ Geology, v. 55, no 6, p 1329-1330, Sept -Oct 1960

FIELD, William Osgood, Jr.

- 1-60. Some recent observations of glacier behavior in Alaska [abs ] Alaskan Sci Conf., 10th, Juneau, Aug 25-28, 1959, Proc , p 107, Dec. 1960

FIFE, Clyde Lee, Jr.

- 1-60. Moro area, Taylor County, Texas, in Abilene Geol. Soc , Geological contributions 1960, p. 87-96, illus , 1960

FIGUEROA ABARCA, Jesús C

- 1-60. Some consideration about the effect of Mexican earthquakes World Conf. Earthquake Eng., 2d, Tokyo and Kyoto, Japan, July 11-18, 1960, Proc., v. 3, p. 1553-1561 incl. tables and discussion by C. F. Richter, Tokyo, Sci Council Japan, 1960.
- 2-60. "Macrosismo de Jáltipan" México Univ. Nac. Inst. Geofísica Anales, v. 6, p. 55-69 incl. tables, sketch map, 1960.
- 3-60. Nota sobre periodos sísmicos México Univ Nac Inst. Geofísica Anales, v. 6, p 71-77 incl. tables, with English abs., 1960

FILBY, Royston H

- 1-60. (and LEININGER, Richard Keith) Spectrographic determinations of the major constituents of granite G-1 and diabase W-1, Pt. 3 in Second report on a cooperative investigation of the composition of two silicate rocks U S. Geol Survey Bull. 1113, p. 57-82 incl. tables, 1960.

FILLOUX, Jean See INMAN, Douglas Lamar 1-60

FINCH, Warren Irvin See MIESCH, Alfred Thomas 2-60

FINE, Morris M. See HAHN, Abner Decker 1-60

FINGER, Glenn Charles

- 1-60. (and RISSER, Hubert E., and BRADBURY, James Clifford) Illinois fluorspar Illinois State Geol Survey Div. Circ. 296, 36 p. incl. index maps, diagrams, tables, and illus., 1960

FINKS, Robert Melvin

- 1-60 Late Paleozoic sponge faunas of the Texas region--The siliceous sponges Am Mus Nat History Bull., v 120, art. 1, p 1-160, illus., Nov. 7, 1960.

FINN, Fenton H

- 1-60. Memorial to Charles Reinhard Fetteke (1888-1959) Geol Soc. America Proc 1959, p 125-132, portrait, Oct 1960

FINOS, S See BARNES, D. 1-60

FIREMAN, Edward Leonard

- 1-60 (and DeFELICE, J) Argon 37, argon 39, and tritium in meteorites and the spatial constancy of cosmic rays Jour Geophys Research, v. 65, no 10, p 3035-3041 incl diagrams and table, Oct. 1960.  
2-60. (and DeFELICE, J) Argon radioactivity in a recently fallen meteorite--A deep-space probe for cosmic rays [abs] Jour. Geophys Research, v. 65, no 8, p 2489-2490, Aug 1960.

FISCHBUCH, Norman R.

- 1-60. Stromatoporoids of the Kaybob reef, Alberta Alberta Soc Petroleum Geologists Jour., v. 8, no. 4, p 113-131 incl. index maps, chart, logs, and illus., Apr. 1960.

FISCHER, Alfred George See OSGOOD, Richard Grosvenor, Jr 1-60

FISCHER, Richard Philip

- 1-60 (and STEWART, John Harris) Distribution and lithologic characteristics of sandstone beds that contain deposits of copper, vanadium, and uranium Art 22 in U S. Geol. Survey Prof Paper 400-B, p. B42-B44 incl table, 1960.  
2-60. Vanadium-uranium deposits of the Rifle Creek area, Garfield County, Colorado, with section on mineralogy by Theodore Botinelly U. S. Geol. Survey Bull 1101, 52 p. incl index map, diagrams, and tables, also geol. and structure maps and sections and illus., 1960

FISCHER, William Alfred

- 1-60. Yellowstone's living geology, earthquakes and mountains--Highlights of Yellowstone geology with an interpretation of the 1959 earthquakes and their effects in Yellowstone National Park Yellowstone Nature Notes, 1959-60 Spec Issue, v 33, 62 p incl sketch maps, sections, diagrams, illus., and tables, also separate seismic maps, June 1960

FISCHER, William August See also RAY, R. G 1-60

- 1-60 Spectral reflectance measurements as a basis for film-filter selection for photographic differentiation of rock units Art 61 in U. S. Geol. Survey Prof. Paper 400-B, p. B136-B138 incl diagram and illus., 1960

FISH, Robert A.

- 1-60. (and GOLES, Gordon George, and ANDERS, Edward) The record in the meteorites--[Pt] 3, On the development of meteorites in asteroidal bodies Astrophys Jour., v 132, no 1, p 243-258 incl diagrams and table, illus., July 1960

## FISHER

### FISHER, Daniel Jerome

- 1-60. (and VOLBORTH, Alex) Morinite-apatite-whitlockite Am Mineralogist, v 45, nos. 5-6, p 645-667 incl diagrams, tables, and illus., May-June 1960.
- 2-60 Modified coaxial powder x-ray camera Rev. Sci. Instruments, v. 31, no 12, p 1341-1343 incl diagrams and illus , Dec. 1960.
- 3-60 A new universal-type microscope Zeitschr. Kristallographie (Frankfurt am Main, Germany), Band 113, Max von Laue Festschr 2, p. 77-93 incl diagram and illus , with German abs., Apr. 1960.
- 4-60. (and ERDMANN, Charles Edgar, and REESIDE, John Bernard, Jr ) Cretaceous and Tertiary formations of the Book Cliffs, Carbon, Emery, and Grand Counties, Utah, and Garfield and Mesa Counties, Colorado U. S. Geol. Survey Prof Paper 332, 80 p , illus incl. geol map, 1960.
- 5-60 Interference figures Indian Mineralogist, v. 1, no. 1, p. 11-23, illus., Madras, Jan. 1960.

### FISHER, David E. See also SCHAEFFER, O. A. 2-60

- 1-60. Comparative ages of stone and iron meteorites [abs.] Jour Geophys. Research, v 65, no 8, p 2490, Aug 1960

### FISHER, Donald William

- 1-60. Correlation of the Silurian rocks in New York State New York State Mus and Sci. Service Geol Survey Map and Chart Ser. [no.1], with text, 1959 [1960]

### FISHER, James

- 1-60. (and HUXLEY, Julian, and BARRY, Gerald, and BRONOWSKI, J , editors) The Doubleday pictorial library of nature--V. 2, Earth, plants animals Garden City, N Y., Doubleday and Co., Inc., 359 p. incl. illus , diagrams, and tables, 1960. Includes papers by J. Fisher, A J. Perry, and N. Guppy, which are cited separately
- 2-60. The earth in space, in Fisher, James and others, eds , The Doubleday pictorial library of nature--V. 2, Earth, plants, animals Garden City, N. Y., Doubleday and Co., Inc., p 14-29 incl. illus., and maps, 1960.
- 3-60. The fact of evolution, in Fisher, James and others, eds., The Doubleday pictorial library of nature--V. 2, Earth, plants, animals Garden City, N. Y., Doubleday and Co., Inc., p 158-173 incl illus , 1960.
- 4-60. How evolution works, in Fisher, James and others, eds., The Doubleday pictorial library of nature--V. 2, Earth, plants, animals Garden City, N Y., Doubleday and Co , Inc , p. 174-189 incl. illus., 1960.

### FISHER, John Joseph

- 1-60. Geomorphic expression of former inlets in the outer banks of North Carolina [abs.] Elisha Mitchell Sci. Soc Jour., v 76, no 2, p 187-188, Nov. 1960.

### FISHER, Richard Virgil

- 1-60. (and WILCOX, Ray Everett) The John Day formation in the Monument quadrangle, Oregon Art 140 in U. S Geol. Survey Prof Paper 400-B, p. B302-B304, 1960.
- 2-60 Criteria for recognition of lahatic breccias, southern Cascade Mountains, Washington Geol Soc. America Bull , v. 71, no. 2, p. 127-132 incl. index map, Feb. 1960.
- 3-60. Classification of volcanic breccias Geol. Soc. America Bull., v. 71, no. 7, p. 973-981, July 1960
- 4-60. Proposed classification of volcanoclastic rocks [abs ] Geol. Soc. America Bull., v. 71, no 12, pt. 2, p 1864-1865, Dec. 1960
- 5-60. (and WILCOX, Ray E.) Volcanic clastic rocks of the John Day formation in the Monument quadrangle, north-central Oregon [abs ] Geol. Soc. America Bull., v 71, no. 12, pt. 2, p 1865, Dec 1960.

### FISHER, Wilson, Jr

- 1-60. Post-Canadian disconformity and the related Mosheim limestone near Chatham Hill, Virginia [abs.] Virginia Jour. Sci , v. 11, no 4, p. 214-215, Sept 1960.

FISK, Harold Norman

- 1-60. Bar-finger sands of Mississippi delta [abs.] Am Assoc. Petroleum Geologists Bull., v 44, no 7, p. 1249, July 1960.
- 2-60. Recent Mississippi River sedimentation and peat accumulation Cong. Av. Etudes de Stratigraphie et de Géologie du Carbonifère, 4th, Sept. 15-20, 1958, Heerlen, Compte rendu, p. 187-199, illus., Maastricht, Netherlands, 1960.

FITCH, John Lawrence. See HURD, B. G. 1-60

FLAGG, Arthur Leonard

- 1-60. Color magic in fluorescent minerals Arizona Highways, v 36, no. 1, p. 24-31, illus., Jan 1960.

FLANAGAN, Francis James See also SENFTLE, F. E. 1-60

- 1-60. (and SMITH, William Lee, and SHERWOOD, Alexander M) A comparison of two estimates of the thorium content of the Conway granite, New Hampshire Art. 75 in U. S. Geol. Survey Prof. Paper 400-B, p. B168-B169 incl. table, 1960.
- 2-60. The lead content of G-1, Pt. 5 in Second report on a cooperative investigation of the composition of two silicate rocks. U. S. Geol. Survey Bull. 1113, p. 113-121 incl. diagrams and tables, 1960.

FLANDERS, P. L. See ADAMS, W. M. 2-60

FLANGAS, William G.

- 1-60. (and SHAFFER, Lysle Edward) An application of nuclear explosives to block caving mining [Nevada] California, Univ., Livermore, Lawrence Radiation Lab. Rept. UCRL-5949, 21 p., illus., June 2, 1960.

FLAWN, Peter Tyrrell

- 1-60. A.A.P.G. Basement project [abs.] Am Assoc. Petroleum Geologists Bull., v. 44, no. 7, p. 1249, July 1960.
- 2-60. The subsurface Ouachita structural belt in Texas [abs.] Houston Geol. Soc. Bull., v. 2, no. 5, unpag., Jan 1960.

FLECK, W. E. P.

- 1-60. (and others) The differential thermal analysis of natural and synthetic hydrates of calcium sulphate Canadian Jour. Chemistry, v. 38, no. 6, p. 936-943 incl. diagrams and tables, June 1960.

FLEISCHER, Michael. See also AHRENS, L. H. 1-60, CHAO, E. C.-T. 4-60, HARTMAN, J. A. 1-60, HEWETT, D. F. 1-60

- 1-60. Studies of the manganese oxide minerals--[Pt.] 3, Psilomelane Am Mineralogist, v. 45, nos. 1-2, p. 176-187 incl. diagrams and tables, Jan.-Feb. 1960.
- 2-60. The geochemistry of rhenium--addendum Econ. Geology, v. 55, no. 3, p. 607-609 incl. tables, May 1960, addendum to paper, v. 54, p. 1406-1413, 1959
- 3-60. (and CHAO, Edward Ching-Te) Some problems in the estimation of abundances of elements in the earth's crust Internat. Geol. Cong., 21st, Copenhagen, 1960, Rept., pt. 1, p. 141-148 incl. tables, 1960.
- 4-60. Abundance and distribution of elements Am. Geophys. Union Trans., v. 41, no. 2, p. 292-297, June 1960.

FLEMING, H. W. W.

- 1-60. The Murray deposit, Restigouche county, New Brunswick--A geochemical-geophysical discovery [abs.] Canadian Mining and Metall. Bull., v. 53, no. 575, p. 193, Mar. 1960

FLEMING, Richard Howell

- 1-60. Oceanographic survey of the eastern Chukchi Sea [Alaska] [abs.] Jour. Geophys. Research, v. 65, no. 4, p. 1314, Apr. 1960.

## FLINN

FLINN, Donald J.

- 1-60. Mineralogy of the South Dakota-Wyoming bentonites [abs ] South Dakota Acad. Sci. Proc. 1959, v. 38, p. 71, Jan. 1960

FLINT, Richard Foster

- 1-60. (and SANDERS, John Essington, and RODGERS, John) Symmictite-- A name for nonsorted terrigenous sedimentary rocks that contain a wide range of particle sizes Geol Soc. America Bull , v 71, no. 4, p 507-509, Apr. 1960, addendum with title, Diamictite, a substitute term for symmictite, v. 71, no. 12, pt. 1, p. 1809, Dec. 1960
- 2-60. Two tills in southern Connecticut [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1865-1866, Dec. 1960.

FLORKIN, Marcel

- 1-60. (editor) Aspects of the origin of life, V. 6 of Internat. Ser. Mons. Pure and Appl. Biology, Zoology Div. New York, New York, Pergamon Press, 199 p incl. tables, diagrams, maps, and illus., 1960.

FLOWER, Rousseau Hayner

- 1-60. Microorganisms attached to Ordovician corals [abs.] Geol Soc. America Bull., v 71, no 12, pt. 2, p. 1866, Dec. 1960
- 2-60. Relationships of some colonial Ordovician corals [abs ] Geol Soc. America Bull., v. 71, no. 12, pt 2, p. 1866, Dec. 1960.

FLOYD, E. O See BROWN, Philip Monroe 1-60

FOGARTY, Charles Franklin

- 1-60. (and MOLLISON, R. D.) Sulfur and pyrites, in Am. Inst Mining, Metall., and Petroleum Engineers, Industrial minerals and rocks, p 819-832 incl diagrams, 1960.

FOLEY, Lyndon L.

- 1-60. Zonal arrangement of metals in hypogene veins in Arkansas Econ. Geology, v. 55, no 7, p. 1551-1553 incl. table, Nov. 1960.
- 2-60. Selenium, rubidium, and yttrium in mineral veins in Arkansas Econ. Geology, v. 55, no. 7, p 1553-1554, Nov. 1960
- 3-60. Gold and silver in manganese ore, Polk Co., Arkansas Econ. Geology, v. 55, no 8, p. 1757, Dec 1960.

FOLINSBEE, Robert Edward. See also BAADSGAARD, Halfdan 1-60

- 1-60. (and BAADSGAARD, Halfdan, and LIPSON, Joseph Isaac) Potassium-argon time scale. Internat. Geol Cong., 21st, Copenhagen, 1960, Rept., pt 3, p. 7-17 incl. diagrams and table, 1960.

FOLK, Robert Louis. See also SIEVER, Raymond 2-60, TEXAS UNIV. GEOL. SOC. 1-60

- 1-60. Petrography and origin of the Tuscarora, Rose Hill, and Keefer Formations, Lower and Middle Silurian of eastern West Virginia Jour. Sed. Petrology, v. 30, no. 1, p 1-58 incl. geol. sketch maps, sections, diagrams and illus , Mar. 1960.

FOLKS, Homer Clifton

- 1-60. Physical and mineralogical properties of Pleistocene(?) surficial deposits in the upper Coastal Plain of North Carolina Southeastern Geology, v. 1, no. 4, p. 147-153, tables, 1959 [Apr. 1960]

FOLLIS, Richard H., Jr.

- 1-60. Calcification of cartilage, in Sognnaes, R. F , ed., Calcification of biological systems--A symposium, Washington, D. C., Dec. 29, 1958 Am. Assoc. Adv Sci Pub 64, p 245-259, 1960.

FOLSOM, Clarence Burton, Jr.

- 1-60. Engineering data, in Oil fields in the Burke County area, North Dakota--Geological, magnetic, and engineering studies North Dakota Geol. Survey Rept. Inv. 36, p. 38-41, illus., 1960.

FONG, George

- 1-60. Geology of Devonian Beaverhill Lake formation, Swan Hills area, Alberta, Canada Am. Assoc. Petroleum Geologists Bull., v. 44, no. 2, p. 195-209 incl index and sketch maps, sections, and illus., Feb 1960.

FONT-ALTABA, M.

- 1-60. A thermal study of thaumasite [Virginia] Mineralog. Mag. (London), v 32, no. 250, p. 567-572 incl. diagrams, tables, and illus., Sept. 1960.

FOOSE, Richard Martin

- 1-60. Secondary structures associated with vertical uplift in the Beartooth Mountains, Montana Internat Geol. Cong., 21st, Copenhagen, 1960, Rept., pt 18, p. 53-61 incl sketch maps, 1960.

FORBES, Robert Briedwell

- 1-60. Preliminary investigations of the petrology and structure of the Birch Creek schist in the Fairbanks and Circle districts, Alaska [abs.] Geol. Soc. America Bull., v 71, no 12, pt 2, p 2085, Dec. 1960.  
2-60. The bedrock geology and petrology of the Juneau ice field area, south-eastern Alaska [abs.] Dissert. Abs., v. 20, no. 7, p 2756-2757, Jan. 1960.  
3-60. The bedrock geology and petrology of the Juneau ice field area [abs.] Alaskan Sci Conf., 10th, Juneau, Aug 25-28, 1959, Proc., p. 107-108, Dec. 1960

FORD, A. E. See YATES, Robert Giertz 1-60

FORD, Arthur Barnes

- 1-60. Metamorphism and granitic intrusion in the Glacier Peak quadrangle, northern Cascade Mountains of Washington [abs.] Geol. Soc. America Bull., v 71, no. 12, pt. 2, p 2059, Dec. 1960.

FORDE, R. H. See MURRAY, Grover, Elmer 3-60

FORGOTSON, James Morris, Jr.

- 1-60. Review and classification of quantitative mapping techniques Am. Assoc. Petroleum Geologists Bull., v. 44, no. 1, p. 83-100 incl. isopach and lithofacies maps, diagrams, and table, Jan. 1960

FORMAN, Sydney Alexander

- 1-60. Clay mineralogy of Canadian soils [abs.]: Royal Soc. Canada Minutes Proc., 3d ser., v 54, App. C, p. 40, 1960

FORRESTER, John Stanley

- 1-60. (and JONES, J. L.) Rapid chemical determination of iron, nickel, and vanadium in petroleum oils Anal Chemistry, v. 32, no 11, p. 1443-1446 incl diagrams and tables, Oct. 1960.

FORSYTH, Jane Louise

- 1-60. Correlation of "late" Wisconsin tills in Knox County, Ohio, with those in western Ohio on the basis of soils [abs.] Geol. Soc. America Bull., v. 71, no 12, pt. 2, p. 1867, Dec. 1960.  
2-60 Correlation of tills exposed in Toledo Edison Dam cut, Ohio Ohio Jour Sci., v 60, no 2, p. 94-100 incl index map, section, and diagram, Mar 1960.

FORTSON, Charles Wellborn, Jr. See FURCRON, Aurelius Sydney 2-60;  
HURST, Vernon J. 1-60

FORWARD, Charles N.

- 1-60. Shoreline changes in Egmont Bay and Bedeque Bay, Prince Edward Island Canada Dept. Mines and Tech. Surveys Geog. Br. Geog Paper 26, 15 p., illus., 1960.

FOSHAG, William Frederick, 1894-1956. See GONZÁLEZ REYNA, Jenaro 2-60

## FOSS

FOSS, Ted Harry

- 1-60. Structure and composition of associated Neurodontiformes and Astraspis scales from the Harding formation of Colorado Jour Paleontology, v. 34, no. 2, p. 372-373 incl. table, Mar. 1960.

FOSTER, Frank Gordon See NIELSEN, James Willard 1-60

FOSTER, Frank Wesley

- 1-60 Oil sands at base of Pennsylvanian in Williston Basin [abs.] Am. Assoc. Petroleum Geologists Bull., v. 44, no. 6, p. 956, June 1960.
- 2-60. Oil sands at the base of the Pennsylvanian in the Williston Basin Am. Assoc. Petroleum Geologists Rocky Mtn. Sec. Geol. Record 1960, p. 79-84 incl. illus. [1960].

FOSTER, Margaret Dorothy

- 1-60. Layer charge relations in the dioctahedral and trioctahedral micas Am. Mineralogist, v. 45, nos. 3-4, p. 383-398 incl. diagram and tables, Mar.-Apr. 1960.
- 2-60. (and BRYANT, Bruce Hazelton, and HATHAWAY, John Cummins) Iron-rich muscovitic mica from the Grandfather Mountain area, North Carolina Am. Mineralogist, v. 45, nos. 7-8, p. 839-851 incl. sketch map, diagram, tables, and illus., July-Aug. 1960.
- 3-60.  $\text{Fe}_2\text{O}_3$  in chlorites [abs.]. Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1867, Dec. 1960
- 4-60. Interpretation of the composition of trioctahedral micas U. S. Geol. Survey Prof. Paper 354-B, p. 11-49, illus., 1960.
- 5-60. Interpretation of the composition of lithium micas U. S. Geol. Survey Prof. Paper 354-E, p. 115-147, illus., 1960.

FOSTER, Perry Alanson, Jr

- 1-60. Determination of the cryolite-alumina phase diagram by quenching methods Am. Ceramic Soc. Jour., v. 43, no. 2, p. 66-68 incl. diagram, table, and illus., Feb. 1, 1960.

FOSTER, Philip C. See CARPENTER, Alden B. 1-60

FOSTER, Richard F. See HONSTEAD, J. F. 1-60

FOSTER, Robert John

- 1-60. Origin of embayed quartz crystals in acidic volcanic rocks Am. Mineralogist, v. 45, nos. 7-8, p. 892-894, July-Aug. 1960.
- 2-60 Tertiary geology of a portion of the Central Cascade Mountains, Washington. Geol. Soc. America Bull., v. 71, no. 2, p. 99-125 incl. index map, chart, and illus., geol. map, Feb. 1960.
- 3-60. Precambrian corundum-bearing rocks in the Madison Range, southwestern Montana [abs.]. Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 2059-2060, Dec. 1960.

FOSTER, Roy Woodrow. See KOTTLOWSKI, Frank Edward 1-60, ROSWELL GEOL. SOC. 1-60

FOSTER, Wilfrid Raymond. See also GENTILE, A. L. 2-60

- 1-60 The sillimanite group--kyanite, andalusite, sillimanite, dumortierite, topaz, in Am. Inst. Mining, Metall., and Petroleum Engineers, Industrial minerals and rocks, p. 773-789 incl. tables, 1960

FOUNTAIN, Richard C.

- 1-60. A contribution to the petrography of the Silurian iron ores of northwest Georgia [abs.]. Georgia Acad. Sci. Bull., v. 18, nos. 1-2, p. 14, Apr. 1960.
- 2-60. A contribution to the petrography of the Silurian iron ores of northwest Georgia Georgia Mineral Newsletter, v. 13, no. 3, p. 114-116, illus., fall 1960

FOUR CORNERS GEOLOGICAL SOCIETY

- 1-60. Geology of the Paradox Basin fold and fault belt [Colorado Plateau], 3d field conference, 1960 [guidebook] Durango, Colorado, Petroleum



Inf., 183 p. incl. index, and sketch maps, sections, charts, diagrams, tables, and illus., also tectonic map, sections, and correlation chart, 1960. Includes individual papers which are cited separately.

FOUR CORNERS GEOLOGICAL SOCIETY, Nomenclature Committee

1-60. Stratigraphic nomenclature of the northern Paradox Basin [Colorado-Utah], in *Geology of the Paradox Basin fold and fault belt* Four Corners Geol. Soc., 3d Field Conf., 1960, [Guidebook] p. 26-30, 1960

FOURNIER, A. L. See GREGORY, Alan Frank 1-60

FOURNIER, Robert Orville

1-60. Solubility of quartz in water in the temperature interval from 25°C. to 300°C. [abs.] *Geol. Soc. America Bull.*, v. 71, no. 12, pt. 2, p. 1867-1868, Dec. 1960.

FOUST, Roscoe Thornton, Jr. See REAGAN, Marion Allen, Jr. 1-60, 2-60

FOUTZ, Dell R

1-60. Geology of the Wash Canyon area, southern Wasatch Mountains, Utah Brigham Young Univ. Research Studies Geology Ser., v. 7, no. 2, 37 p., illus. incl. geol. map, Apr. 1960

FOWKES, Walter W.

1-60. (and FROST, Clyde M.) Leonardite--A lignite byproduct U. S. Bur. Mines Rept. Inv. 5611, 12 p. incl. diagrams and tables, 1960

FOWLER, George Malcolm

1-60. Structural deformation and ore deposits--Oklahoma-Kansas mining field in Tri-State mining district *Eng. and Mining Jour.*, v. 161, no. 6, p. 183-188 incl. tectonic and sketch maps and sections, June 1960.

FOWLER, K. H.

1-60. Preliminary report on ground water in the Salmon Falls area, Twin Falls County, Idaho U. S. Geol. Survey Circ. 436, 17 p. incl. maps, diagrams, and tables, 1960

FOX, Frederick Glenn

1-60. Wildhay structure [Alberta], in *Rock Lake* Edmonton Geol. Soc., 2d Ann. Field Trip, Aug. 1960, Guidebook, p. 79-81, illus., 1960

FOX, Kenneth F., Jr.

1-60. Recognition of intrusive igneous rocks on aerial photographs *De Re Metallica* [v. 25, no. 2], p. 13-17, illus., Feb. 1960.

FOX, W. J.

1-60. (and HOPKINS, Otho Neil, Jr.) The Georgetown limestone, in *Cretaceous stratigraphy of the Grand and Black Prairies, east-central Texas* Baylor Geol. Soc., Field Conf., Apr. 1960, Guidebook, p. 88-94, 1960

FOXWORTH, Wyckliff Riley

1-60. Montmorillonite clay--A weathering factor *Compass*, v. 37, no. 4, p. 315-318 incl. illus., May 1960.

FRANK, Ernest C. See BLACK, Peter E. 1-60

FRANKEL, Larry

1-60. Geographic distribution of *Planorbula vulcanata* Leonard in Nebraska *Jour. Paleontology*, v. 34, no. 3, p. 591-592 incl. index map, May 1960

FRANKLIN, Louis

1-60. Warner-Gardner field, Coleman County, Texas, in *Abilene Geol. Soc., Geological contributions* 1960, p. 151-161, illus., 1960.

FRAREY, Murray James See CANADA GEOL. SURVEY 35-60

## FRASER

FRASER, Donald B

- 1-60. Survey of the primary zinc industry in Canada, 1959 Canada Dept. Mines and Tech. Surveys Mineral Resources Div. Mineral Inf. Bull. MR 43, 84 p. incl. sketch map, diagrams, and tables, 1960.

FRASER, George DeWitt

- 1-60. Pahala ash--An unusual deposit from Kilauea volcano, Hawaii Art. 163 in U. S. Geol. Survey Prof. Paper 400-B, p. B354-B355 incl. sketch map, 1960.  
2-60. Geologic interpretation of the Hebgen Lake earthquake, Montana [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 2034, Dec. 1960

FRASER, James Allan. See also CANADA GEOL. SURVEY 14-60, 42-60

- 1-60 The Precambrian of the Arctic mainland, Pt. 2 of Precambrian geology of Arctic Canada--a summary account Canada Geol. Survey Paper 60-8, p. 12-24, table, 1960

FRAY, C. See EWING, J. I. 3-60

FREBOLD, Hans Wilhelm Ludwig

- 1-60. The Jurassic faunas of the Canadian Arctic--Lower Jurassic and lowermost Middle Jurassic ammonites Canada Geol. Survey Bull. 59, 33 p., illus., 1960

FREDERIKSEN, N. O. See KREMP, Gerhard Otto Wilhelm 2-60

FREDERICKSON, Arman Frederick. See also MUCKLERROY, J. A. 1-60

- 1-60. Method for evaluating certain types of geochemical anomalies Am. Assoc. Petroleum Geologists Bull., v. 44, no. 5, p. 632-637 incl. sketch map and diagrams, May 1960, addendum, no. 7, p. 1205, July 1960.  
2-60. (and REYNOLDS, Robert Coltart, Jr.) How measuring paleosalinity aids exploration Oil and Gas Jour., v. 58, no. 5, p. 154-155, 157-158 incl. diagrams and tables, Feb. 1, 1960.  
3-60. (and REYNOLDS, Robert Coltart, Jr.) Geochemical method for determining paleosalinity, in Swineford, Ada, ed., Clays and clay minerals, V.8 Natl. Conf. Clays and Clay Minerals, 8th, Norman, Okla., Oct. 1959, Proc., p. 203-213 incl. diagrams and tables, 1960. (Issued as Internat. Earth Science Ser. Mon. 9 of Pergamon Press, New York)

FREDERICKSON, Edward Arthur

- 1-60. New evidence concerning Dolmanites oklahomae Oklahoma Geology Notes, v. 20, no. 3, p. 53-54, illus., Mar. 1960.  
2-60. (and WADDELL, Dwight E.) An unusual crinoid from the Pennsylvanian of Oklahoma Oklahoma Geology Notes, v. 20, no. 7, p. 172-174, illus., July 1960.

FREEMAN, Gerald W. See PRUSS, Donald E. 1-60

[FREITAG, Dean Richard]. See also LAMBE, T. W. 1-60

- 1-60. Soils as a factor in shoaling processes, a literature review U. S. Army, Corps of Engineers, Comm. Tidal Hydraulics Tech. Bull. 4, 47 p., illus., June 1960

FREMLIN, Gerald

- 1-60. Some observations on a recent article by Dr. Michel Brochu Zeitschr. Geomorphologie (Berlin), New Folge, Band 4, Heft 3-4, p. 288-291, Dec. 1960.

FRENTROP, Arthur H

- 1-60. (and SHERMAN, Harold) Neutrons from small tubes--[Pt.] 2, Schlumberger tube, for oil-well logging. Nucleonics, v. 18, no. 12, p. 72-74 incl. diagrams and illus., Dec. 1960

FRENZEL, Hugh N.

- 1-60. Introduction, in Geology of the Delaware basin West Texas Geol. Soc., Field Trip, Sept.-Oct. 1960, Guidebook, p. 6-7, 1960

FREY, David Grover

- 1-60. On the occurrence of cladoceran remains in lake sediments [Wisc.] Natl. Acad. Sci. Proc., v. 46, no. 6, p. 917-920 incl. tables, June 1960.

FRIEDLANDER, Gerhart. See SEGRÈ, Emilio Gino 1-60

FRIEDMAN, Estelle

- 1-60. Man in the making. New York, N. Y., G. P. Putnam's Sons, 192 p., illus., 1960.

FRIEDMAN, Gerald Manfred See also WOLF, K. H.

- 1-60. Chemical analyses of rocks with the petrographic microscope. Am. Mineralogist, v. 45, nos. 1-2, p. 69-78 incl. tables, Jan.-Feb. 1960.

FRIEDMAN, Melvin See BORG, Iris Y. 1-60 HIGGS, D. V. 1-60

FRIEDMAN, Irving I.

- 1-60. (and THORPE, Arthur, and SENFTLE, Frank Edward) Tektites and glasses from melted terrestrial rocks [abs.] Jour. Geophys. Research, v. 65, no. 8, p. 2491-2492, Aug. 1960.  
2-60. (and SMITH, Robert Leland) A new dating method using obsidian-- Pt. 1, The development of the method. Am. Antiquity, v. 25, no. 4, p. 476-522 incl. diagrams, table, and illus., Apr. 1960.  
3-60 (and THORPE, Arthur Nathaniel, and SENFTLE, Frank Edward) Comparison of the chemical composition and magnetic properties of tektites and glasses formed by fusion of terrestrial rocks. Nature (London), v. 187, no. 4743, p. 1089-1092, tables, Sept. 24, 1960.

FRIEDMAN, Samuel Arthur

- 1-60. Channel-fill sandstones in the middle Pennsylvanian rocks of Indiana. Indiana Geol. Survey Rept. Prog. 23, 59 p., illus., Dec. 1960.  
2-60. Coal geology of Gibson, Posey, and Vanderburgh Counties, Indiana [abs.] Indiana Acad. Sci. Proc. 1959, v. 69, p. 182-183, 1960.

FRIENDS of the PLEISTOCENE, Mid-Western

- 1-60. Eastern South Dakota, 11th annual field conference, May 14-15, 1960, guidebook. Vermillion, South Dakota Geol. Survey, [33] p. incl. sketch maps, sections, diagram, and illus., 1960. Includes paper by F. V. Steece, which is cited separately.

FRIENDS of the PLEISTOCENE, Rocky Mountain Section

- 1-60. (GOODE, Harry Donald, and MORRISON, Roger Barron, leaders) Little Valley, Promontory Point, Utah, September 10, 1960 [and] Little Cottonwood-Draper area, near Salt Lake City, Utah, September 11, 1960, 6th annual field trip [guidebook] [8] p., illus., 1960.

FRIENDS of PLEISTOCENE GEOLOGY, Eastern Section

- 1-60. (by MULLER, Ernest Hathaway) Glacial geology of Cattaraugus County, New York, 23d reunion, Dunkirk, New York, May 21-22, 1960 [guidebook] Syracuse, N. Y., Syracuse Univ., 33 p. incl. sketch map and chart, 1960.

FRIES, Carl, Jr.

- 1-60. Geología del Estado de Morelos y de partes adyacentes de México y Guerrero, región central meridional de México. México Univ. Nac. Inst. Geología Bol. 60, 236 p., illus., 1960.

FRISCHKNECHT, Frank Conrad See also ANDERSON, L. A. 2-60, KELLER, G. V. 5-60

- 1-60. (and EKREN, Einar Bartlett) Mapping conductive strata by electromagnetic methods. Art. 56 in U. S. Geol. Survey Prof. Paper 400-B, p. B121-B125 incl. index map and diagrams, 1960.

FRISTRUP, Borge

- 1-60. Studies of four glaciers in Greenland. Geog. Tidsskr., bind 59, p. 89-102, illus., Copenhagen, 1960.

## FRISTRUP

- 2-60. Recent investigations of the Greenland Ice Cap, in Denmark--Contributions to problems discussed in symposia and excursions Internat. Geog. Cong., 19th, Norden, 1960, Guidebook, p. 142-170 incl sketch maps, section, and diagrams, Copenhagen Univ. Geog. Inst., 1960.
- 3-60. Studies of four glaciers in Greenland, in Denmark--Contributions to problems discussed in symposia and excursions Internat. Geog. Cong., 19th, Norden, 1960, Guidebook, p. 171-184 incl index map, diagrams, table, and illus., Copenhagen Univ. Geog. Inst., 1960.

FRITZ, Axel M., Jr.

- 1-60 The MD engineering seismograph and its application to highway engineering, in Tanner, W. F., ed., Symposium on highway engineering geology, 11th Ann., Feb. 1960, Proc., p. 55-65, illus., Sept. 1960

FROELICH, Albert Joseph

- 1-60. (and KLEINHAMPL, Frank Joseph) Botanical prospecting for uranium in the Deer Flat area, White Canyon district, San Juan County, Utah U. S. Geol. Survey Bull. 1085-B, p. 51-84 incl. sketch map, diagram, and tables, botanical map, 1960.

FROHBERG, Max Hans

- 1-60. (and NUFFIELD, Edward Wilfred) Über ein ungewöhnliches Vorkommen von Millerit auf Temagami Island, Temagami Distrikt, Ontario Neues Jahrb. Mineralogie Abh. (Stuttgart, Germany), Band 94, Festband Ramdohr, 2. Hälfte, p. 1183-1186 incl. English abs., July 1960

FRONDEL, Clifford See also ALBANESE, J. S. 4-60

- 1-60. (and MARVIN, U. B., and ITO, Jun) New data on birnessite and hollandite Am. Mineralogist, v. 45, nos. 7-8, p. 871-875 incl. tables and illus., July-Aug. 1960.
- 2-60. (and MARVIN, U. B., and ITO, Jun) New occurrences of todorokite Am. Mineralogist, v. 45, nos. 11-12, p. 1167-1173 incl. diagrams, tables, and illus., Nov.-Dec. 1960

FROSCH, Alex. See HOWELL, Lynn Gorman 1-60

FROST, Clyde M. See FOWKES, Walter W. 1-60

FROST, Irving Condie

- 1-60. Comparison of three methods for the determination of total and organic carbon in geochemical studies Art. 217 in U. S. Geol. Survey Prof. Paper 400-B, p. B480-B483 incl. tables, 1960.

FROST, Robert Edson

- 1-60. Aerial photography in arctic and subarctic engineering Am. Soc. Civil Engineers Proc., v. 86, paper 2463, Jour. Air Transport Div., no. AT 1, p. 27-56, illus., May 1960
- 2-60. (and others) Photo interpretation of soils, Chap. 5 in Am. Soc. Photogrammetry, Manual of photographic interpretation Washington, D. C., p. 343-402 incl. diagrams, table, and illus., 1960

FROST, Sherman L.

- 1-60. Principles of water--Its uses, behavior, problems, and conservation Columbus, Ohio Dept. Nat. Resources, Div. Water, revised 1960.

FRUECHTENICHT, H. L.

- 1-60. Underground gas storage in Michigan Interstate Oil Compact Comm. Comm. Bull., v. 2, no. 1, p. 40-45, illus., June 1960

FRUEH, Alfred Joseph, Jr.

- 1-60. Polymorphism of  $\text{Ag}_2\text{Te}$  [abs.] Acta Cryst., v. 13, pt. 12, p. 1007, Dec. 1960
- 2-60. Polymorphism of  $\text{Ag}_2\text{Te}$  [abs.] Canadian Mining and Metall. Bull., v. 53, no. 575, p. 200, Mar. 1960

FRY, Wayne Lyle

- 1-60. Noncalcareous marine algae from the Upper Ordovician of the Lake Winnipeg region, Manitoba [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1868, Dec. 1960.
- 2-60. Early Tertiary flora from the lower Fraser River Valley, British Columbia [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 2060, Dec. 1960.

FRYE, John Chapman. See also LEONARD, A. B. 1-60

- 1-60. (and others) Accretion-gley and the gumbotil dilemma Am. Jour. Sci., v. 258, no. 3, p. 185-190, Mar 1960.
- 2-60 (and WILLMAN, Harold Bowen) Classification of the Wisconsinan Stage in the Lake Michigan glacial lobe Illinois State Geol. Survey Div. Circ 285, 16 p incl sections and chart, 1960
- 3-60. (and WILLMAN, Harold Bowen, and GLASS, Herbert David) Gumbotil, accretion-gley, and the weathering profile Illinois State Geol. Survey Div. Circ 295, 39 p. incl diagrams and tables, 1960

FRYKLUND, Verne Charles, Jr.

- 1-60 Origin of the Main period veins, Coeur d'Alene district, Idaho Art. 15 in U S. Geol Survey Prof Paper 400-B, p. B29-B30, 1960.

FRYSINGER, Galen Royen

- 1-60. Cation exchange behavior of vermiculite-biotite mixtures, in Swineford, Ada, ed., Clays and clay minerals, V. 8 Natl. Conf. Clays and Clay Minerals, 8th, Norman, Okla, Oct. 1959, Proc, p. 116-121 incl tables, 1960. (Issued as Internat Earth Science Ser. Mon. 5 of Pergamon Press, New York.)

FRYXELL, Roald

- 1-60. Problems in glacial chronology of northern Washington [abs.] Geol. Soc. America Bull, v. 71, no. 12, pt. 2, p. 2060-2061, Dec. 1960.

FUCHS, Louis H. See HOEKSTRA, Henry R 1-60

FUENNING, Paul

- 1-60 (and BRAUN, Lewis Timothy) New tools increase photogeology's value. Oilweek, v. 11, no. 9, p. 37-45 incl. ads, illus., Apr. 16, 1960.

FUJII, Takashi

- 1-60. Correlation of some physical properties and chemical composition of solid solution Am. Mineralogist, v. 45, nos. 3-4, p. 370-382 incl diagram, Mar.-Apr. 1960.

FUKTOMI, Takabaru

- 1-60. On the hot springs in Yellowstone [Wyoming] and Lassen [California] volcanic areas, U.S.A. Balneolog Soc. Japan Jour., v. 11, no. 4, p. 55-56, in Japanese, Tokyo, Dec 1, 1960.

FULKERSON, F. B. See ROBY, Robert Neil 1-60

FULLER, John George Charles Martin

- 1-60. Ordovician and Silurian of central and southern parts of Williston basin [abs.] Am. Assoc. Petroleum Geologists Bull, v. 44, no. 6, p. 956-957, June 1960.
- 2-60 Ordovician and Silurian of the central and southern parts of the Williston basin [abs.] Am. Assoc. Petroleum Geologists Rocky Mtn Sec Geol. Record 1960, p. 162-163 [1960].

FULLER, Keith

- 1-60. Diving for gold--The complete handbook Sacramento, Calif., Underwater Enterprises, 126 p., illus., 1960.

FULTON, R. J. See CANADA GEOL. SURVEY 42-60

## FUNDERBURG

FUNDERBURG, John B.

- 1-60. Fossil manatee from North Carolina Jour Mammalogy, v. 41, no. 4, p. 521, Nov. 1960.

FUQUA, Wallace Dunham

- 1-60. (and LUCAS, Clifford V., and PEAK, Wilferd W.) Landsubsidence in the San Joaquin Valley, California, resulting from water application [abs.]. Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1869, Dec. 1960
- 2-60. (and PEAK, Wilferd W., and LUCAS, Clifford Vincent) Land subsidence in the San Joaquin Valley, California, resulting from water application [abs.]. California Assoc. Eng. Geologists, 3d Ann. Mtg., Berkeley, Oct. 14-16, 1960, p. 8 [1960].
- 3-60. (and RICHTER, Raymond) Photographic interpretation as an aid in delimiting areas of shallow land subsidence in California, App. A of Chap. 6 in Am. Soc. Photogrammetry, Manual of photographic interpretation Washington, D. C., p. 442-456 incl. sketch map and illus., 1960.

FURCRON, Aurelius Sydney

- 1-60 Kyanite, sillimanite and andalusite in Georgia Georgia Mineral Newsletter, v. 13, no. 1, p. 9-21, illus., spring 1960.
- 2-60. (and FORTSON, Charles Wellborn, Jr.) Commercial limestones of the Flint River Basin south of Albany, Georgia Georgia Mineral Newsletter, v. 13, no. 2, p. 45-57, illus., summer 1960
- 3-60. What's the matter with industrial minerals? Georgia Mineral Newsletter, v. 13, no. 3, p. 113-114, fall 1960.
- 4-60. Some lost mineral localities in Georgia Georgia Mineral Newsletter, v. 13, no. 3, p. 124-129, fall 1960.
- 5-60 (compiler) Corundum in Georgia Georgia Mineral Newsletter, v. 13, no. 4, p. 167-177, illus., winter 1960

FURLONG, Ira Ellsworth

- 1-60. The geology of the Farmington Quadrangle [Maine] [abs.] Dissert. Abs., v. 21, no. 4, p. 848, Oct. 1960

FURNAS, Thomas C., Jr.

- 1-60. A new diffractometer for diffraction studies [abs.] Acta Cryst., v. 13, pt. 12, p. 985, Dec. 1960.

FURNISH, William Madison, Jr. See ETHINGTON, Raymond Lindsay 1-60,  
MURRAY, Grover Elmer 2-60, SELLERS, David H. A. 1-60

FUZESY, L. M.

- 1-60. Problems in correlation of Mississippian strata in southeastern Saskatchewan [abs.] Am. Assoc. Petroleum Geologists Bull., v. 44, no. 6, p. 957, June 1960.
- 2-60. Problems in the correlation of Mississippian strata in southeastern Saskatchewan Am. Assoc. Petroleum Geologists Rocky Mtn. Sec. Geol. Record 1960, p. 123-140 incl. illus. [1960].

FYFE, William S. See also CAMPBELL, A. S. 1-60

- 1-60 Hydrothermal synthesis and determination of equilibrium between minerals in the subliquidus region Jour. Geology, v. 68, no. 5, p. 553-566 incl. diagrams and table, Sept. 1960.
- 2-60 Hydrothermal synthesis and equilibrium [abs.] Jour. Geophys. Research, v. 65, no. 8, p. 2492, Aug. 1960
- 3-60. Stability of epidote minerals Nature (London), v. 187, no. 4736, p. 497, Aug. 6, 1960.

FYLES, John Gladstone. See also CANADA GEOL. SURVEY 23-60, 40-60,  
CRAIG, Bruce Gordon 2-60, 3-60

- 1-60. (and CRAIG, Bruce Gordon) Pleistocene geology of western Canada [abs.] Oilweek, v. 10, no. 49, p. 17, Jan. 23, 1960.

GAAL, Robert A. See MOTTS, Ward Sundt 1-60

- GABRIELSE, Hubert. See also CANADA GEOL. SURVEY 30-60  
 1-60. The genesis of chrysotile asbestos in the Cassiar Asbestos deposit, northern British Columbia Econ. Geology, v. 55, no 2, p. 327-337 incl. geol. sketch maps, table, and illus., Mar-Apr. 1960.  
 2-60. (and WHEELER, John Oliver) Tectonic framework of southern Yukon and northwestern British Columbia, Canada [abs.] Geol Soc America Bull., v. 71, no. 12, pt. 2, p. 1869, Dec. 1960
- GADD, Nelson Raymond See also CANADA GEOL SURVEY 24-60, 27-60  
 1-60. Surficial geology, Upton, Quebec, 31 H/15 Canada Geol. Survey Paper 60-27, 4 p., geol. map, 1960.  
 2-60. Surficial geology of the Bécancour map-area, Quebec Canada Geol. Survey Paper 59-8, 34 p., illus. incl. geol. map, 1960.
- GAEDE, Verne F.  
 1-60. Esperanza oil field California Oil Fields--Summ. Operations July-Dec. 1959, v. 45, no 2, p. 13-16, illus., 1960
- GAFFRON, Hans See also SHAPELY, Harlow 1-60  
 1-60. The origin of life, in Tax, S., ed., Evolution after Darwin, V. 1 Chicago, Ill., Univ. Chicago Press, p. 39-84 incl. illus., 1960
- GAGNON, George C. See NAGY, Bartholomew Stephen 1-60
- GALBRAITH, Denman S.  
 1-60. Beryllium, Chap. 8 in Mineral resources of Colorado, 1st sequel Denver, Colorado Mineral Resources Board, p. 399-421 incl. index map and tables, 1960.
- GALEANO, Sergio Fortún  
 1-60. Estudios hidrológicos para la fuente de abastecimiento de Manzanillo [Mexico] Ing Civil, v. 11, no 5, p. 263-286, illus., May 1960  
 2-60 Estudios hidrológicos para la Fuente de Abastecimiento de Manzanillo Soc Cubana Ingenieros Rev., v 60, nos 4-6, p 91-98 incl. tables, also sketch map and diagrams, Apr.-June 1960.
- GALLANT, Robert P See SEAMAN, David Martin 3-60
- GALLANT, Roy A.  
 1-60 Exploring under the earth. Garden City, N Y, Garden City Books, 121 p, illus., 1960.
- GALLE, O. Karmie  
 1-60. (and RUNNELS, Russell Tyson) Determination of CO<sub>2</sub> in carbonate rocks by controlled loss on ignition Jour Sed Petrology, v 30, no 4, p 613-618 incl diagrams and tables, Dec. 1960
- GALLOWAY, Jesse James  
 1-60. Devonian stromatoporoids from the lower Mackenzie Valley of Canada [Northwest Territories] Jour. Paleontology, v. 34, no 4, p. 620-636, illus., July 1960, correction, no 6, p 1218, Nov 1960.  
 2-60 (and St. JEAN, Joseph, Jr.) Ordovician Stromatoporoidea of North America [abs.] Geol. Soc. America Bull., v. 71, no 12, pt. 2, p 1870, Dec. 1960.  
 3-60 (and EHLERS, George Marion) Some Middle Devonian stromatoporoids from Michigan and southwestern Ontario, including the types described by Alexander Winchell and A. W. Grabau Michigan Univ. Mus Paleontology Contr., v 15, no 4, p. 39-120, illus., Jan. 8, 1960
- GALLOWAY, Raymond A See KRAUSS, Robert W 1-60
- GALLUP, William B.  
 1-60. How geologists hunt for oil in the far north [Northwest Territories] Oil and Gas Jour., v 58, no 11, p. 240-242, 244-245 incl. index map and illus., Mar 14, 1960

## GALLUP

- 2-60. Exploratory techniques in the Athabasca bituminous sands area [Alberta] Canadian Oil and Gas Industries, v. 13, no 7, p. 55-59 incl. sketch map, section, and illus., July 1960.
  - 3-60. Current exploratory techniques in the Athabasca Bituminous Sands area [Alberta] Canadian Mining and Metall. Bull., v. 53, no. 576, p. 245-249 incl. sketch maps, section, and illus., Apr. 1960, Canadian Inst. Mining and Metallurgy Trans , v. 63, p 157-161, 1960.
  - 4-60. Exploratory techniques today in the Athabasca sands area [Alberta]· World Petroleum, v. 31, no. 10, p 54, 57-58 incl sketch maps, section, and table, Sept 1960.
  - 5-60. Current exploratory techniques in the Athabasca bituminous sands area [Alberta] Oil in Canada, v. 12, no. 26, p. 32-36, illus., Apr 25, 1960.
  - 6-60. Geology of the Parry Islands, Queen Elizabeth group, Arctic archipelago [Northwest Territories][abs.] Oil in Canada, v. 12, no 29, p 28, May 16, 1960.
- GAMBLE, Erling S. See GOODING, Ansel Miller 1-60
- GAMSON, B. W See BROWN, R. J. S. 1-60
- GARCIA ROJAS, Antonio
- 1-60. Cómo aprovechan el gas en México Petróleo Interamericano, v. 18, no 6, p. 50-55 incl. sketch maps, diagram, and English text, June 1960.
- GARD, John Alan See also ROY, D. M. 1-60
- 1-60. (and TAYLOR, Harry Francis West) The crystal structure of foshagite· Acta Cryst., v. 13, pt. 10, p. 785-793 incl diagrams and tables, Oct. 1960.
- GARD, Leonard Meade, Jr.
- 1-60. Suggested source of Miocene volcanic detritus flanking the central Cascade Range, Washington Art. 142 in U. S. Geol. Survey Prof. Paper 400-B, p B306-B307 incl. sketch map, 1960
- GARDNER, Frank Johnson
- 1-60. Cambrian strike gives Nebraska wildcatters another objective Oil and Gas Jour., v. 58, no 24, p. 167 incl. index map, June 13, 1960.
  - 2-60. Michigan's far north draws 43 eager bidders Oil and Gas Jour., v. 58, no 25, p. 171 incl sketch map, June 20, 1960.
  - 3-60. Canadians watch two British Columbia wildcats Oil and Gas Jour., v 58, no. 30, p. 293 incl. index map, July 25, 1960
  - 4-60. New X-ray computer "fingerprints" rock samples Oil and Gas Jour , v. 58, no 51, p. 133 incl. illus., Dec. 19, 1960.
- GARDNER, Gerald Henry Fraser. See van der KNAPP, W. 1-60
- GARDNER, John K See RICHTER, Charles Francis 2-60
- GARDNER, Robert Alfred, Jr.
- 1-60. The Boonsville (Bend conglomerate gas) field, Wise County, Texas, in Abilene Geol. Soc., Geological contributions 1960, p. 7-18, illus., 1960.
- GARDNER, William E. See BLAND, Francis X. 1-60, 2-60, HORSTMAN, Elwood Louis 1-60
- GARDNER, William Irving
- 1-60. Tunnels in the Franciscan formation [abs.] California Assoc. Eng. Geologists, 3d Ann. Mtg., Berkeley, Oct. 14-16, 1960, p. 8-9 [1960].
- GARDUÑO ARIAS, Ricardo Luis
- 1-60 "Continuous velocity logging" y sus aplicaciones al servicio de la industria petrolera Asoc Mexicana Geofísicos Explor Bol , v. 1, no. 1, p 38-64, illus., Jan -Mar. 1960.



GARNER, Hesse Filmore

- 1-60. Upper Paleozoic stratigraphy and sedimentation of northern Arkansas [abs.] Geol Soc America Bull, v 71, no. 12, pt 2, p 1870, Dec. 1960

GARRELS, Robert Minard

- 1-60. (and THOMPSON, Mary Eleanor, and SIEVER, Raymond) Stability of some carbonates at 25°C and one atmosphere total pressure Am. Jour Sci., v 258, no. 6, p 402-418 incl. diagrams and tables, June 1960.  
2-60. (and THOMPSON, Mary Eleanor) Oxidation of pyrite by iron sulfate solutions Am. Jour. Sci., v. 258-A (Bradley Volume), p. 57-67 incl diagrams and tables, 1960.  
3-60. Mineral equilibria--At low temperature and pressure New York, N Y., Harper and Brothers, Pubs, 254 p., 1960

GARRETT, Donald Everett. See also CARPENTER, L. G. 1-60

- 1-60. (and PHILLIPS, Julien F.) Sodium carbonate from natural sources in the United States, in Am Inst. Mining, Metall, and Petroleum Engineers, Industrial minerals and rocks, p. 799-808 incl diagrams and tables, 1960

GARRITY, Martin J See PIERCE, R. Lacy 1-60

GASKELL, Thomas Frohock

- 1-60 The Mohole project, in Science Survey 1, Haslett, A. W., and St John, J, eds. New York, N. Y., Macmillan Co., p. 279-289, illus., 1960  
2-60. Under the deep oceans--twentieth century voyages of discovery New York, N. Y., W.W. Norton and Company, 240 p., illus., 1960.

GAST, Paul Werner

- 1-60 Limitations on the composition of the upper mantle Jour. Geophys Research, v. 65, no 4, p. 1287-1297 incl tables, Apr 1960

GASTIL, Russell Gordon

- 1-60. The distribution of mineral dates in time and space Am. Jour. Sci., v 258, no 1, p 1-35 incl. index and sketch maps, diagrams, and tables, Jan 1960  
2-60. (and KNOWLES, David Martin) Geology of the Wabush Lake area, southwestern Labrador and eastern Quebec, Canada Geol Soc. America Bull, v. 71, no. 8, p. 1243-1254 incl. sketch maps, section, and tables, Aug. 1960.  
3-60. (and BLAIS, Roger A., and KNOWLES, David Martin, and BERGERON, Robert) The Labrador geosyncline Internat. Geol Cong., 21st, Copenhagen, 1960, Rept, pt. 9, p. 21-38 incl. geol sketch maps and table, 1960.  
4-60. Continents and mobile belts in the light of mineral dating Internat. Geol. Cong, 21st, Copenhagen, 1960, Rept., pt. 9, p 162-169 incl sketch maps and diagram, 1960.

GATES, Gary Rickey. See also WINSLOW, J D. 3-60

- 1-60 (and SMITH, Ned Myron, and MELHORN, Wilton Newton) A "fossil" cave-filling in the St. Louis Limestone in Putnam County, Indiana [abs.] Indiana Acad. Sci. Proc. 1959, v. 69, p. 185-186, 1960

GATES, Olcott

- 1-60. (editor) Lower Paleozoic carbonate rocks in Maryland and Pennsylvania Johns Hopkins Univ. Studies Geology, no. 18, Guidebook 3, 101 p. incl. route and geol. sketch maps, sections, charts, diagrams, and table 1960. (1960 annual convention, American Association of Petroleum Geologists and Society of Economic Paleontologists and Mineralogists.) Includes individual papers which are cited separately.

GATLIN, Carl

- 1-60 Petroleum engineering--drilling and well completions Englewood Cliffs, N. J., Prentice-Hall, Inc., 341 p., illus., 1960.

## GAUCHER

GAUCHER, Edwin H. S.

- 1-60 Preliminary report on the southeast quarter of Barlow township, electoral district of Abitibi-East Quebec Dept. Mines Mineral Deposits Br Prelim Rept. 425, 13 p, geol. map, 1960, also French ed

GAVELIN, S.

- 1-60 (and PARWEL, A., and RYHAGE, R.) Sulfur isotope fractionation in sulfide mineralization Econ. Geology, v. 55, no. 3, p 510-530 incl. geol sketch map, diagram, tables, and illus, May 1960.

GAY, Peter. See BOWN, M. G. 1-60

GAY, Thomas E, Jr. See LYDON, Philip A. 1-60

GEBHART, John E. See HIGGS, D. V. 1-60

GEERTSMA, J.

- 1-60. Velocity-log interpretation--The effect of rock bulk compressibility [abs.] Mining Eng, v 12, no 10, p 1057, Oct. 1960

GEIS, Darlene

- 1-60 The how and why book of dinosaurs New York, N Y., Grosset & Dunlap, 48 p, illus., 1960.

GELDERN, J van

- 1-60 Mineral and mining guide to Western Mexico Los Angeles, Calif, Mineral Guide, 7 p, illus, 1960.

GÉLINAS, Léopold

- 1-60 Preliminary report on the Gabriel Lake area (east part) and the Fort Chimo area (west part), New Quebec Quebec Dept. Mines Geol Surveys Br Prelim Rept 407, 9 p, geol. map, 1960, also French ed.  
2-60. Preliminary report on the Fort Chimo area (east part), New Quebec Quebec Dept Mines Geol Surveys Br. Prelim Rept. 418, 6 p, geol. map, 1960, also French ed

GELLER, Seymour

- 1-60. (and DURAND, J L.) Refinement of the structure of  $\text{LiMnPO}_4$  Acta Cryst, v 13, pt 4, p 325-331 incl diagrams and tables, Apr. 1960.

GELPHMAN, Norman Ray

- 1-60. West Sentinel Oil Field, Washita County, Oklahoma--Sedimentology of the "Granite Wash" and structural geology Shale Shaker, v. 10, no. 6, p 2-16 incl. index and sketch maps, sections, table, illus., and discussion by R. L. Roberts, Feb. 1960

GENESKY, S. M.

- 1-60. (and LOOFBOUROW, R. L.) Geological covering materials for deep underground installations U. S. Air Force Proj Rand Research Memo. RM-2617, 56 p incl. sketch map, diagrams, sections and illus, Aug. 4, 1960

GENOVÉS T., Santiago

- 1-60 Revaluation of age, stature and sex of the Tepexpan remains, Mexico: Am. Jour Phys Anthropology, v. 18, no. 3, p 205-217 incl. tables and illus, Sept 1960

GENTILE, Anthony L.

- 1-60. (and ROY, Rustum) Isomorphism and crystalline solubility in the garnet family Am. Mineralogist, v 45, nos. 5-6, p 701-711 incl. tables, May-June 1960.  
2-60. (and FOSTER, Wilfrid Raymond) Phase relations in the high-alumina portion of the system  $\text{CaO-Al}_2\text{O}_3\text{-SiO}_2$  [abs.] Geol. Soc. America Bull, v. 71, no 12, pt 2, p 1870-1871, Dec. 1960  
3-60. Investigation of phase relations in the high alumina portion of the system lime-alumina-silica [abs.] Dissert Abs, v. 21, no 4, p. 919-920, Oct 1960

GENTNER, W See also FECHTIG, H 1-60

- 1-60 (and ZHRINGER, J.) The potassium-argon ages of tektites [abs.] Jour Geophys Research, v. 65, no 8, p. 2492, Aug 1960

GEOFFROY, Paul R

- 1-60. (and KOULOMZINE, Theodore) Mogador sulphide deposit (Vendome Mines Limited) [Quebec] Canadian Mining and Metall Bull, v 53, no 576, p 268-274 incl index and geol sketch map, diagrams, and illus., Apr 1960, Canadian Inst. Mining and Metallurgy Trans, v. 63, p 180-186, 1960.

#### GEOLOGICAL DISCUSSION CLUB

- 1-60 Guidebook for geological field trips in southwestern British Columbia Vancouver, B C, 53 p incl sketch maps, correlation chart, and sections, geol map, Mar 1960. (Prepared for meetings of Geological Society of America Cordilleran Section.) Includes individual papers which are cited separately

GEOLOGICAL SOCIETY of AMERICA, Bibliographic Staff

- 1-60 Annotated bibliography of economic geology for January-June 1959, V. 32, no 1 Urbana, Ill, Econ Geology Pub. Co., p 1-161, 1960

GEOLOGICAL SOCIETY of AMERICA, Rocky Mountain Section

- 1-60. Guidebook for field trips, 13th annual meeting, Rapid City, South Dakota, April 28-30, 1960 20 p, illus, prepared by geol. staffs of South Dakota School of Mines and Homestake Mining Co, 1960

GEOLOGICAL SOCIETY of SACRAMENTO

- 1-60 Northwestern California--A traverse of the Klamath uplift, northern Coast Ranges and Eel River Basin, annual field trip, June 3-5, 1960 [guidebook] Sacramento, Calif, 43 p, section, 1960. Includes individual papers which are cited separately

GEORGE, William Owsley. See TURNER, Samuel Foster 1-60

GEORGI, Johannes

- 1-60. Nord-Gronland--die Forschungen der Britischen Nordgrönland expedition, 1952-1954 Erdkunde, Band 12, Heft 1, p 51-61, illus., with English summary, Bonn, Germany, Feb 1958, addendum, Band 14, Heft 1, p. 66, Mar. 1960  
2-60. Otto Fabricius und Andere über die Eisverhältnisse auf Gronland mit einem Exkurs auf den Jakobshavner Gletscher--[Pt.] 1, Der Inlandeis-Vorstoss von 1740 bis 1870 Polarforschung (Holzminden, Germany) 1958, Jahrg 28, Band 4, Heft 1-2, p. 79-86, illus, Apr. 1960.

GERARD, Robert See BROECKER, Wallace S. 2-60

GERLACH, George Smith

- 1-60. (and SCHARON, Harry LeRoy) A regional gravity survey of the St. Francois Mountains of Missouri [abs.]. Jour Geophys. Research, v. 65, no. 8, p. 2492-2493, Aug. 1960

GERRITSEN, Francisco. See BOWMAN, Joseph Richmond 1-60, BRUUN, Per 1-60

GERSTENHAUER, A.

- 1-60. Der tropische Kegelkarst in Tabasco (Mexico) Zeitschr Geomorphologie (Berlin), Supplementband 2, p. 22-48 incl sketch maps, diagrams, graph, illus., and tables, 1960  
2-60. Zur Frage der absoluten Geschwindigkeit der Kalkkorrosion in verschiedenen Klimaten [Pt.] 2 Zeitschr Geomorphologie (Berlin), Supplementband 2, p. 67-73 incl graphs, 1960.

GERWELS, Richard P.

- 1-60 A case history--Shaft sinking in heavy ground [Cuba] Mining Eng, v 12, no. 12, p 1257-1259 incl. sketch map and diagrams, Dec. 1960.

## GETZ

GETZ, Lowell L.

- 1-60. Middle Pleistocene carnivores from southwestern Kansas Jour. Mammalogy, v 41, no. 3, p. 361-365 incl tables and illus., Aug. 1960

GEYL, W F.

- 1-60. Geophysical speculations on the origin of stepped erosion surfaces Jour. Geology, v 68, no. 2, p. 154-176 incl. diagrams and table, Mar 1960

GIANELLA, Vincent Paul

- 1-60. Faulting in northeastern Sonora, Mexico, in 1887 [abs.] Geol. Soc. America Bull., v 71, no. 12, pt 2, p 2061, Dec 1960  
2-60 (and LARSON, Edward Richard) Marine Permian at Black Rock, Nevada [abs.] Geol Soc. America Bull., v. 71, no. 12, pt 2, p. 2061, Dec 1960

GIARDINI, Armando Alfonzo

- 1-60. (and TYDINGS, J. E, and LEVIN, Samuel Benedict) A very high pressure-high temperature research apparatus and the synthesis of diamond Am. Mineralogist, v. 45, nos. 1-2, p. 217-221 incl. diagram and illus., Jan.-Feb. 1960.

GIBBONS, Anthony Benjamin

- 1-60. (and HINRICHS, Edgar Neal, and BOTINELLY, Theodore) The role of impermeable rocks in controlling zeolitic alteration of tuff Art. 214 in U. S. Geol. Survey Prof Paper 400-B, p. B473-B475 incl. sections and table, 1960.

GIBBS, Gerald V. See also BROWN, W. L. 1-60

- 1-60 (and BLOSS, Fred Donald, and SHELL, Haskell Roy) Proto-amphibole, a new polytype Am Mineralogist, v 45, nos 9-10, p. 974-989 incl. diagrams and tables, Sept -Oct. 1960

GIBBS, Harold J. See also WILSON, S. D. 1-60

- 1-60. A laboratory testing study of land subsidence [California] Cong. Panam. Mecánica Suelos y Cimentaciones, 1st, México, D. F , Sept. 7-12, 1959, Mem., v. 1, p. 13-29 incl. index and sketch maps, diagrams, table, Spanish abs. and conclusions, and discussion by Leonardo Zeevaert, 1960.  
2-60 (and HOLLAND, William Yates) Petrographic and engineering properties of loess U. S. Bur. Reclamation Eng Mon. 28, 37 p , illus., Nov. 1960.

GIBBS, Peter Godbe. See SCHEUPLEIN, Robert 1-60

GIBSON, F. Harold. See ODE, William Harlan 1-60

GIBSON, William Murel

- 1-60. Submarine topography in the Gulf of Alaska Geol. Soc America Bull., v. 71, no. 7, p. 1087-1107 incl sketch map and profiles, bathymetric chart, July 1960.

GIDDENS, Joel

- 1-60. (and PERKINS, Henry Frank, and CARTER, R. L.) Soils of Georgia Soil Sci., v 89, no. 4, p 229-238 incl. sketch maps, diagrams, and table, Apr 1960.

GIELOW, Donald G. See GULBRANDSEN, Robert Allen 1-60

GIESE, Graham S. See ZEIGLER, John M. 2-60

GIFFIN, Charles E.

- 1-60 (and KULP, John Laurence) Potassium-argon ages in the Precambrian basement of Colorado Geol. Soc. America Bull., v 71, no. 2, p 219-222 incl geol. sketch maps and table, Feb. 1960.

GILBERT, Freeman. See KNOPOFF, Leon 4-60

## GILBERT, Joseph Evan Josaphat

- 1-60. Distribution and general characteristics of the massive sulphide deposits of the Province of Quebec, in Symposium on the occurrence of massive sulphide deposits in Canada Canadian Mining and Metall. Bull., v. 53, no. 575, p. 128-135 incl sketch maps and tables, Mar 1960, Canadian Inst Mining and Metallurgy Trans., v 63, p 69-76, 1960.

## GILES, Eugene

- 1-60. Multivariate analysis of Pleistocene and Recent coyotes (*Canis latrans*) from California California Univ Pubs. Geol. Sci., v. 36, no. 8, p 369-390, illus., Nov 17, 1960.

## GILETTI, Bruno John

- 1-60. Rb-Sr and K-A ages of the Precambrian of western Montana and Wyoming [abs.] Geol. Soc. America Bull , v. 71, no. 12, pt. 2, p. 1871, Dec. 1960

## GILL, James Edward

- 1-60. Solid diffusion of sulphides and ore formation Internat Geol. Cong , 21st, Copenhagen, 1960, Rept., pt. 16, p. 209-217 incl. illus., 1960.  
2-60. (and others) Symposium on the occurrence of massive sulphide deposits in Canada Canadian Mining and Metall Bull., v. 53, no. 574, p 75-98 incl. sketch maps, diagrams, tables, and illus., Feb 1960, continued, no 575, p. 128-156 incl. index and geol. sketch maps, diagrams, and tables, Mar 1960, entire symposium, Canadian Inst. Mining and Metallurgy Trans., v. 63, p. 37-97, 1960. Includes individual papers which are cited separately

## GILL, James Rogers. See also TOURTELOT, H. A. 1-60, SCHULTZ, L. G. 1-60

- 1-60. (and SCHULTZ, Leonard G., and TOURTELOT, Harry Allison) Correlation of units in lower part of the Pierre shale, Great Plains region [abs ] Geol. Soc. America Bull , v 71, no. 12, pt 2, p 2034, Dec. 1960.

## GILLARY, Herman W. See UDANE, Bernard 1-60

## GILLESPIE, W H.

- 1-60. (and LATIMER, I S , Jr.) A guide to the common fossil plants of West Virginia Morgantown, West Virginia Geol. and Econ Survey, 59 p., illus. incl. geol. map, June 1960.

## GILLETT, John Montague

- 1-60. The flora of the vicinity of the Merewether Crater, northern Labrador Canadian Field Naturalist, v 74, no 1, p 8-27 incl sketch maps, tables, and illus , Jan.-Mar 1960

## GILLSON, Joseph L. See also AM. INST. MINING, METALL., and PETROLEUM ENGINEERS 1-60, CASTLE, J E 1-60

- 1-60. Intriguing examples of geology applied to industrial minerals Econ. Geology, v 55, no 4, p. 629-644, June-July 1960  
2-60. (and others) The carbonate rocks, in Am. Inst. Mining, Metall , and Petroleum Engineers, Industrial minerals and rocks, p 123-201 incl. maps, sections, diagram, and tables, 1960.  
3-60. Bentonite, in Am. Inst. Mining, Metall., and Petroleum Engineers, Industrial minerals and rocks, p 87-91 incl. tables, 1960  
4-60. Sand deposits of titanium minerals Am. Inst. Mining, Metall., and Petroleum Engineers Trans 1959, v 214, p. 421-429 incl sketch maps, 1960.

## GILLULY, James

- 1-60. Structure of Paleozoic and early Mesozoic rocks in the northern part of the Shoshone Range, Nevada Art 119 in U S. Geol Survey Prof. Paper 400-B, p B265, 1960.  
2-60 A folded thrust in Nevada--Inferences as to time relations between folding and faulting Am. Jour. Sci., v. 258-A (Bradley Volume), p. 68-79 incl geol. maps, sketch maps, and diagrams, 1960

## GILMAN

GILMAN, Ralph

- 1-60. Report on some experimental long-period seismographs. Seismol. Soc. America Bull., v. 50, no. 4, p. 553-559 incl. diagrams and illus., Oct 1960.

GILREATH, James A.

- 1-60. Interpretation of dipmeter surveys in Mississippi [abs.] Am. Assoc. Petroleum Geologists Bull., v. 44, no. 9, p. 1601, Sept. 1960
- 2-60. Interpretation of dipmeter surveys in Mississippi Soc. Prof. Well Log Analysts, 1st. Ann. Logging Symposium, Tulsa, Oklahoma, May 16-17, 1960, Trans., 6 p., paged separately, sections, diagrams, and illus., 1960.
- 3-60. Interpretation of dipmeter surveys in Mississippi: Gulf Coast Assoc. Geol. Soc. Trans., v. 10, p. 267-275 incl. diagrams and illus., 1960.

GINN, Robert McGunegal

- 1-60. (and others) Geology of Nairn and Lorne townships, District of Sudbury, Ontario Ontario Dept. Mines Prelim. Map P.48, scale 1 in. to 1,320 ft. [Mar. 8, 1960].
- 2-60. (and THOMSON, James Edgar, and others) Geology of Baldwin and Porter townships, District of Sudbury, Ontario Ontario Dept. Mines Prelim. Map P.49, scale 1 in. to 1,320 ft., with sections [Mar. 8, 1960].

GINSBURG, Robert Nathan See also LOGAN, B. W. 1-60

- 1-60. Ancient analogues of Recent stromatolites Internat. Geol. Cong., 21st, Copenhagen, 1960, Rept., pt. 22, p. 26-35 incl. table and illus., 1960.

GIOVANDO, L. F. See PICKARD, George Lawson 1-60

GIROUX, Paul R. See also DEUTSCH, Morris 1-60

- 1-60. (and THOMPSON, Ted) Summary of ground-water conditions in Michigan, 1958 Michigan Geol. Survey Div. Water Supply Rept. 3, 77 p., illus. incl. geol. map, 1960.

GITTINS, John

- 1-60. (and TUTTLE, Orville Frank) The system  $\text{CaF}_2\text{-Ca(OH)}_2\text{-CaCO}_3$  at 1000 bars [abs.]. Jour. Geophys. Research, v. 65, no. 8, p. 2493, Aug. 1960

GIUDICE, Daniele del. See also ZOPPI BRACCI, Luigi 2-60, 3-60

- 1-60. Apuntes sobre la geología del Departamento de Nueva Segovia. Nicaragua Servicio Geol. Nac. Bol. 4, p. 17-37, illus. incl. geol. sketch map, 1960.

GLAISTER, Rowland Perry See THOMAS, G. E. 1-60, 2-60

GLASS, Herbert David. See ATHERTON, Elwood 1-60, FRYE, John Chapman 3-60, GROOT, Johan Jacob 2-60

GLASS, Marion George

- 1-60. North missile site water wells [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 2034-2035, Dec. 1960

GLASS, Robert David. See HUGHES, Paul Warren 1-60

GLASSER, Frederick Paul

- 1-60. (and OSBORN, Elbert Franklin) The ternary system  $\text{MgO-MnO-SiO}_2$  Am Ceramic Soc Jour., v. 43, no. 3, p. 132-140 incl. diagrams and tables, Mar. 1, 1960

GLASSMIRE, S. H.

- 1-60. Gold in Mosquitia [Honduras] Mining Jour (London), v. 255, no. 6520, p. 146-148, Aug. 5, 1960.
- 2-60. Placer gold in Mosquitia [Honduras] Mining Jour (London), v. 255, no. 6536, p. 597-598, illus., Nov. 25, 1960.

## GLEASON, Sterling

- 1-60. Ultraviolet guide to minerals--a complete working manual for the use of ultraviolet light in locating and recognizing minerals, including field identification charts Princeton, N. J., D. Van Nostrand Co., Inc., 244 p , illus., 1960

## GLEN, William

- 1-60. Pliocene fresh-water gastropods from San Mateo County, California. Jour. Paleontology, v 34, no. 6, p. 1207-1209 incl. illus., Nov. 1960.

## GLENN, R C.

- 1-60. (and others) Chemical weathering of layer silicate clays in loess-derived Tama silt loam of southwestern Wisconsin, in Swineford, Ada, ed , Clays and clay minerals, V. 8 Natl. Conf. Clays and Clay Minerals, 8th, Norman, Okla , Oct 1959, Proc , p. 63-83 incl diagrams and tables, 1960. (Issued as Internat Earth Science Ser. Mon 9 of Pergamon Press, New York.)  
2-60. Chemical weathering of layer silicate minerals in loess-derived Loring silt loam of Mississippi Internat. Cong Soil Sci , 7th, Madison, Wis., 1960, v. 4, comm. 7, p. 523-531 incl. diagrams, tables, French and German summaries, and discussion [1960].

GLOVER, Everett D. See EHLMANN, Arthur J. 1-60GLOVER, Lynn, 3d. See also BERRYHILL, H. L., Jr 1-60, 2-60, MATTSON, P H. 1-60

- 1-60. (and MATTSON, Peter Humphrey) Successive thrust and transcurrent faulting during the early Tertiary in south-central Puerto Rico Art. 166 in U. S. Geol Survey Prof. Paper 400-B, p. B357, B363-B365 incl. index and geol maps and sections, 1960.

GLOYNA, Earnest Frederick. See REYNOLDS, Tom D. 1-60, SERATA, Shosei 1-60GODFREY, Curtis L. See NELSON, L. A. 2-60

## GODFREY, John A , Jr.

- 1-60. SMS field, Kent County, Texas, in Abilene Geol Soc , Geological contributions 1960, p 114-123, illus., 1960.

GODFREY, John Derrick See also GRAVENOR, C P 3-60

- 1-60. Northeast corner of Alberta and adjacent area--Its development and mineral potential Canadian Mining and Metall. Bull , v 53, no. 576, p. 250-259 incl sketch maps and illus , Apr 1960, Canadian Inst. Mining and Metallurgy Trans , v. 63, p. 162-171, 1960

GODIEN, Elisabeth. See ENGEL, Albert Edward John 2-60, STEVENS, Rollin Elbert 1-60GOEBEL, Edwin D. See also HILPMAN, P. L 1-60, JEWETT, J. M 2-60, MERRIAM, D. F 1-60

- 1-60. (and MERRIAM, Daniel F.) Kansas-Nebraska--Mid-America's latest exploration payoff Oil and Gas Jour., v. 58, no. 17, p. 171-172, 174 incl. structure contour maps, section, and tables, Apr. 25, 1960.

GOECKERMANN, Robert H. See SHELTON, A. Vay 1-60

## GOERING, Milford Wayne

- 1-60. (and SMITH, Billy George) Preliminary geologic interpretation, Amerada Petroleum Corporation No 1 Chicken Creek Unit, SW Section 30, T. 22 N., R 117 W., Lincoln County, Wyoming, in Overthrust belt of southwestern Wyoming and adjacent areas Wyoming Geol. Assoc , 15h Ann. Field Conf , 1960, Guidebook, p 178-180 incl sketch map and section, 1960

## GOLD

GOLD, L. W.

- 1-60. The cracking activity in ice during creep Canadian Jour. Physics, v. 38, no. 9, p 1137-1148 incl. diagrams, illus., Sept 1960

GOLDBERG, Edward D. See also GRIFFIN, John 1-60, LAL, Devendra 1-60  
1-60. (and PARKER, Robert Hallett) Phosphatized wood from the Pacific sea floor Geol. Soc. America Bull., v. 71, no. 5, p 631-632 incl. diagram, May 1960.

- 2-60. (and KOIDE, Minoru) Ionium/thorium chronology of the deep-sea sediments [abs.]. Jour. Geophys. Research, v. 65, no. 8, p 2493, Aug. 1960
- 3-60. Chemists and the oceans Chymia--Ann. Studies History Chemistry, v. 6, p. 162-179 incl. tables, 1960.

GOLDICH, Samuel S See QUIRKE, Terence T., Jr. 1-60

GOLDIN, Abraham Samuel. See SODD, Vincent J. 1-60

GOLDMAN, Harold B.

- 1-60. Crushed stone, sand and gravel, dimension stone, Pt. 2 of Franciscan formation as a source of construction materials [abs.] California Assoc. Eng. Geologists, 3d Ann. Mtg., Berkeley, Oct. 14-16, 1960, p. 9 [1960].

GOLDSMITH, Julian Royce. See also JAMIESON, J. C. 1-60

- 1-60. Exsolution of dolomite from calcite Jour. Geology, v. 68, no. 1, p. 103-109 incl. diagram and table, illus., Jan. 1960
- 2-60. (and GRAF, Donald Lee) Subsolvus relations in the systems  $\text{CaCO}_3\text{-MgCO}_3\text{-MnCO}_3$  Jour. Geology, v. 68, no. 3, p. 324-335 incl. diagrams and tables, May 1960.
- 3-60. (and GRAF, Donald Lee, and WITTERS, Juanita) Studies in the system  $\text{CaCO}_3\text{-MgCO}_3\text{-FeCO}_3$  [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p 1871-1872, Dec. 1960.
- 4-60. (and HEARD, Hugh C.) Subsolvus phase relations in the system  $\text{CaCO}_3\text{-MgCO}_3$  [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1872, Dec. 1960.

GOLDSMITH, Richard

- 1-60. A post-Harbor Hill-Charlestown moraine in southeastern Connecticut Am Jour. Sci., v. 258, no. 10, p 740-743 incl. sketch map and illus., Dec. 1960
- 2-60. Surficial geology of the Uncasville quadrangle, Connecticut U. S. Geol. Survey Geol. Quad. Map GQ-138, scale 1:24,000 (1 in. to 2,000 ft.), with text, 1960

GOLDTHWAIT, Lawrence

- 1-60. Teaching a geology course at secondary level [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1872, Dec. 1960

GOLDTHWAIT, Richard Parker

- 1-60. Post-Wisconsin glacial changes in southeast Alaska [abs.] Alaskan Sci. Conf., 10th, Juneau, Aug. 25-28, 1959, Proc., p. 108-109, Dec. 1960.
- 2-60. Study of ice cliff in Nunatarssuaq, Greenland U. S. Army, Corps of Engineers, Cold Regions Research and Eng. Lab. Tech. Rept. 39, 108 p. incl. sketch maps, diagrams, tables, and illus., Oct. 1960

GOLES, Gordon George. See also FISH, R. A. 1-60

- 1-60. (and ANDERS, Edward) Iodine content of meteorites and their  $\text{I}^{129}\text{-Xe}^{129}$  ages Jour. Geophys. Research, v. 65, no. 12, p 4181-4184 incl. tables, Dec. 1960.

GOLTZ, Eugene M.

- 1-60. Tuscola North (Fluppen Sand) field, Taylor County, Texas, in Abilene Geol. Soc., Geological contributions 1960, p. 141-149, illus., 1960.

GONZÁLEZ, José

- 1-60. Breves consideraciones sobre tsunamis, y su aplicación al registrado en la Estación Mareográfico de La Unión, el 23 de mayo de 1960 El Salvador Servicio Geol. Nac. Bol. Sismol., May-Aug 1960, v. 6, p. 24-27, illus., Nov. 1960.



## GONZALES REYNA, Jenaro

- 1-60. Las pegmatitas graníticas de Santa Ana, Telixtlahuaca, Oax., México· Internat. Geol Cong , 21st, Copenhagen, 1960, Rept., pt 17, p 63-76 incl. index and geol. sketch maps, 1960.
- 2-60. (and FOSHAG, William Frederick) The birth of Parícutin [Mexico], in Smithsonian treasury of science, V. 2, True, W. P., ed. New York, N Y., Simon and Schuster, Inc , p. 398-421, illus., revised 1960, originally published 1947.

## GOOCH, Edwin Octavius

- 1-60 (and WOOD, Robert S , and PARROTT, William T ) Sources of aggregate used in Virginia highway construction Virginia Div. Mineral Resources, Mineral Resources Rept. 1, 65 p., illus., 1960

GOOD, John Maxwell See HANSEN, Wallace Ray 2-60GOODE, Harry Donald See also FRIENDS PLEISTOCENE, Rocky Mtn Sec. 1-60

- 1-60. (and EARDLEY, Armand John) Lake Bonneville--A preliminary report on the Quaternary deposits of Little Valley, Promontory Range, Utah [abs.] Geol Soc. America Bull., v. 71, no 12, pt. 2, p. 2035, Dec. 1960.
- 2-60. Surficial deposits, geomorphology, and Cenozoic history of the Eureka quadrangle, Utah [abs.] Dissert. Abs., v. 20, no. 10, p 4075-4076, Apr. 1960.

GOODELL, Horace Grant See also CHEN, C. S. 1-60

- 1-60. (and YON, J. William, Jr.) The regional lithostratigraphy of the post-Eocene rocks of Florida, in Late Cenozoic stratigraphy and sedimentation of central Florida Southeastern Geol. Soc , 9th Field Trip, May 1960, Guidebook, p 75-113 incl. sections, lithofacies maps, 1960

GOODING, Ansel Miller. See also KAPP, R. O. 1-60

- 1-60. (and GAMBLE, Erling S.) Leached, clay-enriched zones in post-Sangamon drift in southwestern Ohio and southeastern Indiana--New observations and data Geol Soc. America Bull , v. 71, no. 4, p. 511-514, Apr. 1960.

GOODLETT, John C. See DAVIS, Margaret Bryan 2-60, HACK, John Tilton 4-60GOODMAN, Alfred John. See also HAÏTES, T B. 1-60

- 1-60. Review of some hypotheses on mountain building Alberta Soc. Petroleum Geologists Jour., v. 8, no 8, p. 215-227 incl. diagrams, Aug. 1960.

## GOODMAN, Richard E.

- 1-60 Photo/field prospecting Photogramm Eng , v. 26, no 1, p 100-105, Mar 1960

## GOODWIN, Alan Murray

- 1-60 Gunflint iron formation of the Whitefish Lake area, district of Thunder Bay Ontario Dept. Mines [Ann. Rept.] 1960, v 69, pt. 7, p. 41-63, illus. incl geol. maps in separate folder, 1960.

## GORDER, John D.

- 1-60. The Lima Anticline [Montana-Idaho], in West Yellowstone--Earthquake area Billings Geol. Soc., 11th Ann Field Conf., Sept. 1960, [Guidebook] p 265-267 incl. sketch map and sections, 1960

## GORDON, Ellis Davis

- 1-60. (and others) Occurrence and quality of water in the northern Bridger basin and the adjacent Overthrust Belt, Wyoming, in Overthrust belt of southwestern Wyoming and adjacent areas Wyoming Geol. Assoc , 15th Ann. Field Conf., 1960, Guidebook, p. 226-247 incl. sketch maps, sections, diagrams, and tables, 1960.

## GORDON, Mackenzie, Jr

- 1-60. Some American midcontinent Carboniferous cephalopods Jour. Paleontology, v. 34, no 1, p. 133-151 incl. diagrams, illus., Jan. 1960.

## GORDON

GORDON, William Anthony

- 1-60. The age of the middle Tertiary rocks of northwestern Puerto Rico Caribbean Geol. Conf , 2d, Mayaguez, Puerto Rico, Jan. 4-9, 1959, Trans., p. 87-90, with discussion, 1960.

GORRELL, Harold Alvin

- 1-60. Some indications of subsurface features from ground water data [abs ] Canadian Oil and Gas Industries, v. 13, no. 4, p. 108, Apr. 1960.

GOSAR, Antone John

- 1-60. Stratigraphic and structural traps in Big Piney-La Barge area, Wyoming [abs.] Am. Assoc. Petroleum Geologists Bull., v. 44, no. 6, p. 957, June 1960.  
2-60. Stratigraphic and structural traps in the Big Piney-La Barge area, Wyoming [abs.]. Am. Assoc. Petroleum Geologists Rocky Mtn. Sec Geol. Record 1960, p 165-166 [1960].

GOSSE, Ralph C.

- 1-60. Spodumene Gems and Minerals, no. 277, p. 24-25, Oct. 1960.  
2-60. Some notes on Herkimer "diamonds" Mineralogist, v. 28, nos. 6-8, p. 135-136, June-Aug. 1960.

GOTT, Garland Bayard. See also WOLCOTT, D. E 1-60

- 1-60. (and BRADDOCK, William Alfred, and POST, Edwin Vanhorn) Uranium deposits of the southwestern Black Hills [abs.] Geol. Soc. America Bull., v 71, no. 12, pt. 2, p. 2035-2036, Dec 1960.

GOTTFRIED, David. See LARSEN, Esper Signius, 3d 1-60

GOUDGE, Monson Fraser

- 1-60 (and TOMKINS, R. V.) Sodium sulfate from natural sources, in Am. Inst. Mining, Metall., and Petroleum Engineers, Industrial minerals and rocks, p. 809-814 incl. tables, 1960.

GOULD, Donald Boyd See BRECHTEL, Frederick Charles

GOULD, Howard Ross

- 1-60. Amount of sediment, [Chap ] P in Pt. 4 of Smith, W O., Comprehensive survey of sedimentation in Lake Mead [Arizona-Nevada], 1948-49 U. S. Geol. Survey Prof. Paper 295, p. 195-200, illus., 1960  
2-60. Turbidity currents, [Chap ] Q in Pt. 4 of Smith, W. O., Comprehensive survey of sedimentation in Lake Mead [Arizona-Nevada], 1948-49 U. S. Geol Survey Prof. Paper 295, p. 201-207, illus., 1960  
3-60. Erosion in the reservoir, [Chap.] R in Pt. 4 of Smith, W O., Comprehensive survey of sedimentation in Lake Mead [Arizona-Nevada], 1948-49 U S. Geol. Survey Prof. Paper 295, p 209-213, illus., 1960

GOVETT, Raymond W.

- 1-60. Geology of Wagoner County, Oklahoma [abs.] Dissert Abs., v 20, no. 10, p. 4076, Apr. 1960.

GOW, James Donald

- 1-60. (and POLLOCK, Herbert Chermiside) Development of a compact evacuated pulsed neutron source. Rev. Sci Instruments, v. 31, no. 3, p 235-240 incl. diagrams, table, and illus., Mar. 1960.

GOWER, Howard Dale. See also BROWN, R. D., Jr. 2-60

- 1-60 (and VINE, James David, and SNAVELY, Parke Detweiler, Jr.) Depositional environment of the Eocene coal deposits of Washington [abs.] Geol. Soc. America Bull , v. 71, no. 12, pt. 2, p. 1873, Dec. 1960.  
2-60. Geology of the Pysht quadrangle, Washington U.S. Geol. Survey Geol. Quad. Map GQ-129, scale 1 62,500 (about 1 in. to 1 mi.), with sections and text, 1960.

GRABAU, Warren E.

- 1-60. Geology as an historical tool [abs.] Am. Assoc Petroleum Geologists Bull., v. 44, no. 9, p. 1601, Sept 1960.

- 2-60. Geology as an historical tool Gulf Coast Assoc Geol. Soc. Trans., v. 10, p. 87-91, 1960

## GRACE, Nathaniel Hew

- 1-60. Evolution and industry, in Evolution, its science and doctrine Royal Soc. Canada "Studia Varia" Ser. 4, p. 199-209, 1960

## GRAF, Donald Lee. See also GOLDSMITH, J. R. 2-60, 3-60

- 1-60. (and BRADLEY, William Frank) The crystal structure of huntite,  $Mg_3Ca(CO_3)_4$  [abs.] Acta Cryst., v. 13, pt. 12, p. 1017, Dec. 1960.  
 2-60. Geochemistry of carbonate sediments and sedimentary carbonate rocks--Pt. 1, Carbonate mineralogy, carbonate sediments Illinois State Geol. Survey Div. Circ. 297, 39 p. incl. diagrams and tables, 1960.  
 3-60. Geochemistry of carbonate sediments and sedimentary carbonate rocks--Pt. 2, Sedimentary carbonate rocks Illinois State Geol. Survey Div. Circ. 298, 43 p. incl. geol. sketch maps, diagrams, and tables, 1960  
 4-60. Geochemistry of carbonate sediments and sedimentary carbonate rocks--Pt. 3, Minor element distribution Illinois State Geol. Survey Div. Circ. 301, 71 p. incl. diagrams and tables, 1960.  
 5-60. Geochemistry of carbonate sediments and sedimentary carbonate rocks--Pt. 4-A, Isotopic composition - chemical analysis Illinois State Geol. Survey Div. Circ. 308, 42 p. incl. tables, 1960.  
 6-60. Geochemistry of carbonate sediments and sedimentary carbonate rocks--Pt. 4-B, Bibliography Illinois State Geol. Survey Div. Circ. 309, 55 p., 1960

## GRAHAM, Alan

- 1-60. (and HEIMSCH, Charles W.) Pollen studies of some Texas peat deposits Ecology, v. 41, no. 4, p. 751-763, illus., Oct. 1960

## GRAHAM, Joseph John. See also SCHENCK, H. G. 1-60

- 1-60. (and CLARK, Dana Kent) Lacosteina paynei, a new species from the Upper Cretaceous of California Cushman Found. Foram. Research Contr., v. 11, pt. 4, p. 115-116, illus., Oct. 1960.

## GRAHAM, Richard Percival Devereux. See CORSINI, A. 1-60

## GRAHAM, Robert Bruce

- 1-60. Geology of the New Hosco Mines Limited copper-zinc deposits, Mattagami area, Quebec [abs.] Canadian Mining Jour., v. 81, no. 4, p. 94, Apr. 1960

## GRALENSKI, L. J. See STUIVER, Minze 1-60

## GRANGER, Harry Clifford. See also NEUERBURG, G. J. 1-60

- 1-60. Pitchblende identified in a sandstone-type uranium deposit in the central part of the Ambrosia Lake district, New Mexico Art. 26 in U. S. Geol. Survey Prof. Paper 400-B, p. B54-B55, 1960.

## GRANNELL, Dana B.

- 1-60. A geologic section across the Durham Triassic Basin, North Carolina [abs.] Elisha Mitchell Sci. Soc. Jour., v. 76, no. 2, p. 187, Nov. 1960.

## GRANQUIST, William Thomas

- 1-60. (and POLLACK, Sidney Solomon) A study of the synthesis of hectorite in Swineford, Ada, ed., Clays and clay minerals, V. 8 Natl. Conf. Clays and Clay Minerals, 8th, Norman, Okla., Oct. 1959, Proc., p. 150-169 incl. diagrams and tables, also illus., 1960. (Issued as Internat. Earth Science Ser. Mon. 9 of Pergamon Press, New York.)

## GRANT, Fraser S. See RUSSELL, R. Doncaster 1-60

## GRANT, James A. See PHEMISTER, T. C. 2-60, 4-60

## GRANT, Leland Fauntleroy

- 1-60. Determination of cavity patterns in limestone [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1873, Dec. 1960

## GRANT

GRANT, Ulysses Simpson, 4th. See HERTLEIN, Leo George 2-60

GRANT, Willard Huntington

- 1-60 A turbidity meter for field use [abs.] Georgia Acad. Sci. Bull., v. 18, nos. 1-2, p. 15, Apr. 1960.

GRANTZ, Arthur. See also ZIETZ, Isidore 1-60

- 1-60. (and ZIETZ, Isidore) Possible significance of broad magnetic highs over belts of moderately deformed sedimentary rocks in Alaska and California. Art. 158 in U. S. Geol. Survey Prof. Paper 400-B, p. B342-B347 incl. aeromagnetic map and profiles, 1960.
- 2-60. (and JONES, David Lawrence) Stratigraphy and age of the Matanuska formation, south-central Alaska. Art. 159 in U. S. Geol. Survey Prof. Paper 400-B, p. B347-B350 incl. geol. sketch map, sections, and table, 1960.
- 3-60. Generalized geologic map of the Nelchina area, Alaska, showing igneous rocks and larger faults. U. S. Geol. Survey Misc. Geol. Inv. Map I-312, scale 1:96,000 (about 1 in. to 1½ mi.), with text, 1960.
- 4-60. Geologic map of Talkeetna Mountains (A-2) quadrangle, Alaska, and the contiguous area to the north and northwest. U. S. Geol. Survey Misc. Geol. Inv. Map I-313, scale 1:48,000 (1 in. to 4,000 ft.), with sections, 1960.
- 5-60. Geologic map of Talkeetna Mountains (A-1) quadrangle, and the south third of Talkeetna Mountains (B-1) quadrangle, Alaska. U. S. Geol. Survey Misc. Geol. Inv. Map I-314, scale 1:48,000 (1 in. to 4,000 ft.), with sections, 1960.

GRATON, L. C

- 1-60 If Lindgren were here. Econ. Geology, v. 55, no. 1, p. 192-201, Jan.-Feb. 1960.

GRAVENOR, Conrad Percival

- 1-60. (and BAYROCK, Lubsolaw Antin) Glacial deposits of Alberta [abs.] Royal Soc. Canada Minutes Proc., 3d ser., v. 54, App. C, p. 38, 1960.
- 2-60. Iron deposits in western Canada. Western Miner and Oil Rev., v. 33, no. 1, p. 30-40 incl. index and geol. sketch maps, section, tables, and illus., Jan. 1960.
- 3-60. (and GREEN, Robert, and GODFREY, John Derrick) Air photographs of Alberta. Research Council Alberta Bull. 5, [77] p., illus., 1960.

GRAY, Carlyle. See also ZIETZ, Isidore 2-60

- 1-60. (and others) Geologic map of Pennsylvania. Pennsylvania Geol. Survey, 4th ser., scale 1:250,000 (about 1 in. to 4 mi.), with sections, 1960.
- 2-60. (and WISE, Donald Underkofler) Nappe structures and the Annville quarry, in Some tectonic and structural problems of the Appalachian Piedmont along the Susquehanna River. Pennsylvania Geologists, 25th Ann. Field Conf., Oct. 1960, Guidebook, p. 89-91, geol. sketch map, 1960.

GRAY, Clifton H., Jr. See RICHMOND, James Frank 1-60

GRAY, Helen. See MUSGRAVE, Albert Wayne 1-60

GRAY, Henry Hamilton

- 1-60. (and JENKINS, Robert D., and WEIDMAN, Robert McMaster) Geology of the Huron area, south-central Indiana. Indiana Geol. Survey Bull. 20, 78 p., illus. incl. geol. map, Dec. 1960.

GRAY, Jane. See also LANGENHEIM, R. L., Jr. 1-60

- 1-60. Late Tertiary microflora from the Basin and Range Province, Arizona. Science, v. 132, no. 3420, p. 147-148 incl. table, July 15, 1960.
- 2-60. Temperate pollen genera in the Eocene (Claiborne) flora, Alabama. Science, v. 132, no. 3430, p. 808-810 incl. table and illus., Sept. 23, 1960.
- 3-60. Fossil chlorophycean algae from the Miocene of Oregon. Jour. Paleontology, v. 34, no. 3, p. 453-463 incl. index map, illus., May 1960.
- 4-60. Tertiary pollen flora from the Basin and Range Province, Arizona [abs.]. Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 2061-2062, Dec. 1960.

- 5-60. Micropaleobotanical research on the late Tertiary sediments of Arizona Arizona Geol. Soc. Digest, v 3, p 145-149 incl tables, Mar. 1960.

## GRAY, T. E

- 1-60. (and PALOWITCH, E. R.) Preparation characteristics of coal from Monongalia County, W. Va. U. S. Bur. Mines Rept. Inv. 5572, 42 p incl. sketch map, diagrams, and tables, 1960  
2-60 (and PALOWITCH, E. R.) Preparation characteristics of coal from Marion County, W. Va. U. S. Bur. Mines Rept. Inv. 5653, 29 p incl. index and sketch maps, diagrams, and tables, 1960.

## GRAYSON, John Francis

- 1-60. Application of palynology to geology [abs.] Am. Assoc. Petroleum Geologists Bull., v 44, no. 1, p. 127, Jan. 1960.  
2-60. Palynology as a working tool Oil and Gas Jour., v 58, no. 17, p. 136-140 incl section, diagrams, chart, and illus., Apr. 25, 1960.

## GREAT NORTHERN RAILWAY COMPANY MINERAL RESEARCH and DEVELOPMENT DEPARTMENT

- 1-60. Gypsum deposits adjacent to the Great Northern Railway in central Montana Great Northern Railway Co. Mineral Research and Devel. Dept. Rept. 10, 14 p, index and mineral maps, sections, and diagrams, Apr. 1960.  
2-60. Geology adjacent to the Great Falls-Billings line, Great Northern Railway, Montana (Pt 2) [Judith Basin and Fergus Counties] Great Northern Railway Co. Mineral Research and Devel. Dept. Rept. 12, 69 p. incl. tables, also index, geol., and sketch maps, diagrams, and sections, July 1960

## GREEN, Cecil Howard

- 1-60. Morris Miller Slotnick [1901-1956]--Memorial presentation Geophysics, v 25, no 2, p 547-550, Apr. 1960

## GREEN, F. Earl

- 1-60. (and KELLEY, Jane Holden) Comments on Alibates flint Am. Antiquity, v 25, no 3, p 413-414, Jan. 1960.

## GREEN, Jesse Robison

- 1-60. Concretions [abs.] Montana Acad. Sci. Proc. 1959, v. 19, p. 16-18, illus., 1960

## GREEN, Keith Ellsworth

- 1-60. Ecology of some Arctic foraminifera Micropaleontology, v 6, no 1, p. 57-78, illus., Jan. 1960

## GREEN, Lewis Howard. See also CANADA GEOL. SURVEY 38-60, 39-60, 40-60

- 1-60 (and RODDICK, James Archibald, and WHEELER, John Oliver) Geological reconnaissance of Pelly River district, Yukon Canadian Oil and Gas Industries, v. 13, no. 7, p. 51-54 incl. geol. map and sections, July 1960.  
2-60. (and McTAGGART, Kenneth Cunningham) Structural studies in the Mayo District, Yukon Territory Geol. Assoc. Canada Proc., v 12, p. 119-134, illus. incl. geol. sketch map, Dec. 1960.  
3-60. (and RODDICK, James Archibald, and WHEELER, John Oliver) A geological reconnaissance of Pelly Mountains and vicinity, southeastern Yukon Canadian Mining Jour., v. 81, no 4, p. 96-99 incl. index and geol. sketch map and sections, Apr. 1960

## GREEN, Morton

- 1-60. A Tertiary *Cynomys* from South Dakota Jour. Paleontology, v 34, no. 3, p. 545-547 incl. table and illus., May 1960.  
2-60. (and MARTIN, Harold) *Bison latifrons* in South Dakota Jour. Paleontology, v. 34, no 3, p. 548-550 incl. table and illus., May 1960.  
3-60. Late Pleistocene mammals from western South Dakota South Dakota Acad. Sci. Proc. 1960, v. 39, p. 38-40, Nov. 1, 1960.

## GREEN

GREEN, Robert. See GRAVENOR, Conrad Percival 3-60

GREEN, William D.

- 1-60. (and HALVA, Carroll J., and DAMON, Paul Edward) Reinvestigation of the suitability of magnetite for helium age dating [abs.] Geol Soc. America Bull., v 71, no. 12, pt. 2, p. 1873-1874, Dec 1960.

GREENBERG, Seymour Samuel. See also ELBERTY, W. T. 1-60, ERD, R. C. 1-60, SUNDERMAN, J. A. 1-60, 2-60

- 1-60 Outgrowths of authigenic brookite on leucoxene grains in Pennsylvanian and late Mississippian sandstones of Indiana Jour. Sed. Petrology, v. 30, no. 4, p. 622-623 incl. table and illus., Dec 1960  
2-60. Petrography of the Ste Genevieve limestone in Indiana [abs ] Dissert. Abs., v. 20, no. 10, p. 4076-4077, Apr. 1960.  
3-60. Petrography of Indiana sandstones collected for high-silica evaluation Indiana Geol. Survey Bull. 17, 64 p , illus., Aug 1960.  
4-60. Petrology of sandstones from the Big Clifty Formation of Indiana [abs ] Indiana Acad Sci. Proc 1959, v 69, p 186, 1960.

GREENE, Gordon W See also LACHENBRUCH, A. H. 3-60, 4-60

- 1-60. (and LACHENBRUCH, Arthur Herold, and BREWER, Max Clifton) Some thermal effects of a roadway on permafrost Art 63 in U. S. Geol. Survey Prof. Paper 400-B, p B141-B144 incl diagrams and table, 1960  
2-60. (and HUNT, Charles Butler) Observations of current tilting of the earth's surface in the Death Valley, California, area Art 124 in U. S. Geol Survey Prof. Paper 400-B, p B275-B276 incl sketch map and table, 1960

GREENE, W. D.

- 1-60. A day with the dinosaur hunters [Wyo.] Mineralogist, v 28, nos 4-5, p 54-57 incl. illus., Apr -May 1960.  
2-60. Wyoming's forests of stone Mineralogist, v. 28, nos. 11-12, p 222-226, Nov -Dec. 1960.

GREENKORN, Robert Albert. See also JOHNSON, C. R 1-60

- 1-60. (and JOHNSON, Carlton Robert) Variation of a natural sandstone reservoir element--An objective analysis of core measurements [abs.] Jour. Petroleum Technology, v. 12, no. 9, p. 58, Sept. 1960

GREENWOOD, Hugh John

- 1-60. Water pressure and total pressure in metamorphic rocks--System  $\text{NaAlSi}_2\text{O}_6\text{-H}_2\text{O-argon}$  [abs ] Geol. Soc. America Bull , v. 71, no 12, pt. 2, p. 1874, Dec 1960.

GREENWOOD, Robert

- 1-60. Availability of cesium for ion rockets Mining Eng., v. 12, no. 5, p 482-483 incl. tables, May 1960  
2-60. Sedimentary boudinage in Cretaceous limestones of Zimapan, Mexico Internat Geol. Cong., 21st, Copenhagen, 1960, Rept., pt 18, p. 389-398 incl. sketch map and illus., 1960

GREGORY, Alan Frank

- 1-60. (and FOURNIER, A. L.) The effect of temperature on the response of scintillation counters Geophysics, v. 25, no. 6, p 1288-1290 incl diagram and table, Dec. 1960.  
2-60. Geological interpretation of aeroradiometric data Canada Geol Survey Bull 66, 29 p , illus , 1960.  
3-60. (and BOWER, Margaret E., and MORLEY, L W ) Geological interpretation of aeromagnetic profiles from the Canadian Arctic Archipelago. Canada Geol Survey Paper 60-6, 13 p , illus., 1960  
4-60. (and BOWER, Margaret E., and MORLEY, Lawrence Whitaker) Geological interpretation of aeromagnetic profiles from the Canadian Arctic [abs.] Oilweek, v. 10, no. 49, p. 26-27, Jan. 23, 1960, Oil in Canada, v. 12, no. 16, p. 32, Feb. 15, 1960.

GREGORY, Doris

- 1-60. New museum for the world's 8th wonder New Mexico Mag., v. 38, no. 2, p. 32-35 incl. illus., Feb. 1960.

GREGORY, Joseph Nalle

- 1-60. Portable timer offers new seismic applications Oilweek, v. 11, no. 28, p. 28-30, illus., Aug. 27, 1960.

GREIG, Edmund Wendell See HARDER, Edmund Cecil 1-60

GRETENER, Peter E.

- 1-60. An analysis of the observed time discrepancies between continuous and conventional well velocity surveys Alberta Soc. Petroleum Geologists Jour., v. 8, no. 10, p. 272-286 incl. index map and diagrams, Oct. 1960

GRICE, Charles Richmond

- 1-60. The Grice field, Loving County, Texas, in Geology of the Delaware basin West Texas Geol. Soc., Field Trip, Sept.-Oct. 1960, Guidebook, p. 78-80 incl. structure contour maps, 1960.

GRIES, John Paul See AGNEW, Allen Francis 1-60, 2-60, 3-60

GRIFFIN, George M.

- 1-60. Clay-mineral facies development in recent surface sediments of the northeastern Gulf of Mexico [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1874, Dec. 1960

GRIFFIN, James B. See also CRANE, H. R. 1-60

- 1-60. Some prehistoric connections between Siberia and America Science, v. 131, no. 3403, p. 801-812 incl. charts and illus., Mar. 18, 1960, discussion with title, Chronology of the last glaciation, by D. B. Ericson, no. 3414, p. 1700, June 10, 1960.

GRIFFIN, John

- 1-60. (and GOLDBERG, Edward D.) Clay minerals in the Pacific Ocean [abs.] Jour. Geophys. Research, v. 65, no. 8, p. 2493-2494, Aug. 1960.

GRIFFIN, V. S. See RADER, E. K. 1-60

GRIFFITH, J. W.

- 1-60. A survey of the uranium industry in Canada, 1959 Canada Dept. Mines and Tech. Surveys Mineral Resources Div. Mineral Inf. Bull. MR 44, 46 p. incl. index and sketch maps, diagrams, tables, and illus., 1960

GRIFFITH, S. V.

- 1-60. Alluvial prospecting and mining. 2d revised ed., New York, N. Y., Pergamon Press, 245 p., illus., 1960.

GRIFFITHS, John Cedric

- 1-60. Frequency distributions in accessory mineral analysis [Pennsylvania] Jour. Geology, v. 68, no. 4, p. 353-365 incl. diagram and tables, July 1960.  
2-60. Relationships between reservoir petrography and reservoir behavior of some Appalachian oil sands, in Symposium on geology and secondary recovery Tulsa Geol. Soc. Digest, v. 28, p. 43-58 incl. diagram and tables, 1960.  
3-60. Aspects of measurement in the geosciences Mineral Industries, v. 29, no. 4, p. 1, 4-5, 8 incl. diagrams and illus., Jan. 1960  
4-60. Modal analysis of sediments Rev. Géographie Phys. et Géologie Dynamique (Paris), 2<sup>e</sup> sér., v. 3, fasc. 1, p. 29-48, illus., Jan.-Mar. 1960.

GRIFFITHS, Thomas M.

- 1-60. The landscapes of far Alaska Nat. History, v. 69, no. 1, p. 6-23 incl. illus., Jan. 1960.  
2-60. Glaciological investigations in the TUTO area of Greenland. U. S. Army, Corps of Engineers, Snow Ice and Permafrost Research Establishment Tech. Rept. 47, 63 p., illus., Apr. 1960.

## GRIFFITTS

GRIFFITTS, Wallace Rush See also HAWLEY, C. C 1-60

- 1-60. (and MARRANZINO, Albert P.) Fuller's earth as an agent for purifying heavy organic liquids *Am Mineralogist*, v. 45, nos 5-6, p 739-741 incl table, May-June 1960.
- 2-60 (and ODA, Uteana) Geochemical prospecting for beryllium Art. 44 in *U S. Geol Survey Prof. Paper 400-B*, p B90-B92 incl geol map and diagram, 1960.
- 3-60 (and NAKAGAWA, Harry M.) Variations in base-metal contents of monzonitic intrusives Art. 45 in *U S. Geol. Survey Prof Paper 400-B*, p. B93-B95 incl geochem -geol. map and tables, 1960.

GRIGGS, Allan Bingham See WALLACE, Robert Earl 1-60

GRIGGS, David Tressel. See also TURNER, F J 1-60

- 1-60. (and HANDIN, John, editors) Rock deformation--a symposium. *Geol. Soc America Mem.* 79, 382 p, illus, Mar 1, 1960
- 2-60. (and PRESS, Frank) Probing the earth with nuclear explosions California, Univ., Livermore, Lawrence Radiation Lab. Rept UCRL-6013, 40 p, illus., July 7, 1960.
- 3-60. Isostatic compensation, and origin of continents and mountains *Am. Geophys. Union Trans.*, v. 41, no. 2, p 166-167, June 1960
- 4-60 (and HANDIN, John Walter) Observations on fracture and a hypothesis of earthquakes, Chap 13 in Griggs, D T, ed., *Rock deformation--A symposium* *Geol Soc. America Mem* 79, p 347-364, illus, 1960.
- 5-60. (and TURNER, Francis John, and HEARD, Hugh C.) Deformation of rocks at 500° to 800°C., Chap. 4 in Griggs, D. T, ed, *Rock deformation--A symposium* *Geol Soc America Mem.* 79, p 39-104, illus., 1960
- 6-60. (and others) Annealing recrystallization in calcite crystals and aggregates, Chap 3 in Griggs, D. T., ed., *Rock deformation--A symposium* *Geol Soc. America Mem* 79, p. 21-37, illus, 1960.

GRIM, Ralph Early

- 1-60. Some applications of clay mineralogy *Am. Mineralogist*, v 45, nos. 3-4, p 259-269, Mar -Apr. 1960
- 2-60. (and KULBICKI, Georges, and CAROZZI, Albert Victor) Clay mineralogy of the sediments of the Great Salt Lake, Utah *Geol. Soc. America Bull.*, v. 71, no. 4, p 515-519 incl. geol sketch map, Apr 1960.
- 3-60 (and DROSTE, John Brown, and BRADLEY, William Frank) A mixed-layer clay mineral associated with an evaporite, in Swineford, Ada, ed., *Clays and clay minerals*, V. 8 Natl Conf. Clays and Clay Minerals, 8th, Norman, Okla., Oct. 1959, Proc, p. 228-236 incl diagrams and tables, 1960. (Issued as *Internat Earth Science Ser. Mon* 9 of Pergamon Press, New York.)

GRIMALDI, Frank Saverio. See also MILTON, Charles 1-60

- 1-60. Determination of niobium in the parts per million range in rocks *Anal. Chemistry*, v. 32, no. 1, p 119-121 incl tables, Jan. 1960.
- 2-60. Dilution-addition method for flame spectrophotometry Art. 225 in *U. S. Geol Prof. Paper 400-B*, p B494-B495 incl diagram and tables, 1960.

GRISCOM, Andrew See also NEW ENGLAND INTERCOLLEGIATE GEOL CONF. 1-60

- 1-60. The bulk composition of a zoned crystal *Am. Mineralogist*, v 45, nos. 11-12, p 1309-1312 incl diagram, Nov.-Dec 1960.
- 2-60. Geophysical studies in the Maryland piedmont [abs.] *Geol Soc. America Bull.*, v. 71, no 12, pt. 2, p 1875, Dec. 1960.
- 3-60. (and MILTON, Daniel Jeremy) Introduction, in *Field trips in west-central Maine* *New England Intercollegiate Geol. Conf.*, 52d Ann. Mtg., Oct. 1960, Guidebook, p. 1-2, 1960.
- 4-60. Geology of the Stratton quadrangle, Maine, Trip A in *Field trips in west-central Maine* *New England Intercollegiate Geol Conf.*, 52d Ann. Mtg., Oct 1960, Guidebook, p. 3-8 incl. sketch map, 1960

GRISWOLD, George Gary, Jr. See SALES, Reno Haber 1-60



GROGAN, Robert Mann

- 1-60. Fluorspar and cryolite, in Am Inst Mining, Metall, and Petroleum Engineers, Industrial minerals and rocks, p 363-382 incl tables, 1960.
- 2-60. Columblum at Powderhorn, Colorado Mines Mag, v. 50, no. 9, p 15-16, 27, Sept 1960.

GROGIN, M J See HOOD, James W. 1-60

GROLIER, Maurice Jean. See WALTERS, Kenneth L. 2-60

GROOT, Johan Jacob

- 1-60. (and PENNY, John Sloyan) Plant microfossils and age of nonmarine Cretaceous sediments of Maryland and Delaware Micropaleontology, v 6, no 2, p. 225-236, illus, Apr. 1960.
- 2-60. (and GLASS, Herbert David) Some aspects of the mineralogy of the northern Atlantic Coastal Plain, in Swineford, Ada, ed, Clays and clay minerals Natl Conf. Clays and Clay Minerals, 7th, Washington, D. C., Oct. 1958, Proc, p. 271-284 incl tables, 1960. (Issued as Internat. Earth Science Ser. Mon 5 of Pergamon Press, New York.)

GROSE, Lucius Trowbridge

- 1-60 Geologic formations and structure of Colorado Springs area, Colorado, in Rocky Mtn. Assoc. Geologists, Guide to the geology of Colorado Denver, p. 188-195 incl index and geol. sketch map, sections, and illus, 1960

GROSH, Wesley A

- 1-60 Shallow lead diggings, Grant and Lafayette Counties, Wis. U. S. Bur. Mines Rept Inv. 5694, 59 p. incl sketch maps, diagrams, tables, and illus, 1960.

GROSS, Eugene Bischoff. See HEINRICH, Eberhardt William 3-60

GROSS, Gerardo Wolfgang

- 1-60 Location of clay deposits by combined self-potential and resistivity surveys [Pennsylvania] [abs] Mining Eng., v 12, no. 1, p 23, Jan. 1960.

GROSS, Gordon Arnold

- 1-60. Metamorphism of iron formations and its bearing on their beneficiation [abs] Canadian Mining and Metall. Bull., v 53, no. 575, p 193, Mar. 1960

GRUBBS, Donald K.

- 1-60. (and BARNES, Robert C.) Mineral paragenesis in the Myers-L. Copenhaver barite mines, Smyth County, Virginia [abs.] Virginia Jour. Sci, v. 11, no 4, p 210, Sept. 1960

GRUNER, J. W. See AUSTIN, S. Ralph 1-60; CARROLL, Dorothy 3-60

GRYC, George See JONES, David Lawrence 3-60

GUALTIERI, James Louis. See WEIR, Gordon Whitney 5-60

[GUATEMALA] DIRECCIÓN GENERAL de MINERÍA e HIDROCARBUROS, Sección de Geología

- 1-60. Compilación geológica provisional de la República de Guatemala--con aportaciones de las cfas. petroleras y de otras fuentes indicadas arriba Scale 1 500,000 (about 1 in to 8 mi.), Sept. 1960.

GUDE, Arthur James, 3d

- 1-60 (and YOUNG, Edward Joseph, and KENNEDY, Vance Clifford, and RILEY, Leonard Benjamin) Whewellite and celestite from a fault opening in San Juan County, Utah: Am. Mineralogist, v. 45, nos. 11-12, p. 1257-1265 incl. diagrams, tables, and illus., Nov.-Dec. 1960.

GUENNEL, Gottfried Kurt See NEAVEL, Richard C. 1-60

## GUEST

GUEST, R. J

- 1-60. The determination of total rare earths in high grade uranium products  
Canada Dept Mines and Tech Surveys Mines Br Research Dept. R 67,  
22 p., illus., Aug. 1960

GUILBERT, John M. See CAMERON, Eugene Nathan 1-60

GUILCHER, André

- 1-60. La morphologie et la structure de l'Atlantique Nord et du Golfe du  
Mexique Norois (Poitiers, France), année, no 25, p. 78-82 incl. illus.,  
Jan.-Mar. 1960

GUILCHER, M. A.

- 1-60 Une visite du delta du Mississippi [Louisiana] Assoc. Géographes  
Français Bull (Paris), nos. 288-289, p 44-48 incl. sketch map, Jan -Feb.  
1960.

GUILDAY, John E.

- 1-60 (and BENDER, Martin S.) Late Pleistocene records of the yellow-  
cheeked vole, Microtus xanthognathus (Leach) Carnegie Mus. Annals,  
v. 35, art 14, p. 315-330 incl. index map, illus , diagrams, and tables,  
June 10, 1960.

GUILLEN M., J Jesús. See PESZUERA VELÁZQUEZ, Rubén 1-60

GULLOU, Robert Barton

- 1-60. (and SCHMIDT, Robert Gordon) Correlation of aeroradioactivity data  
and areal geology Art. 55 in U S. Geol. Survey Prof. Paper 400-B,  
p B119-B121 incl geol.-aeroradioactivity maps and profiles, 1960

GUIMOND, Roger

- 1-60. The story of Opemiska Copper Mines (Quebec) Limited--Copper  
pioneer of the Chibougamau Precambrian, v. 33, no. 7, p. 12-18 incl  
diagrams and illus., July 1960

GULBRANDSEN, Robert Allen

- 1-60. (and GIELOW, Donald G.) Mineral assemblage of a pyrometamorphic  
deposit near Tonopah, Nevada Art. 10 in U S. Geol Survey Prof Paper  
400-B, p. B20-B21 incl table, 1960  
2-60 Precipitation of salts from solution by ethyl alcohol as an aid to the  
study of evaporites Art 230 in U. S. Geol Survey Prof Paper 400-B,  
p B504, 1960.  
3-60. (and CRESSMAN, Earle Rupert) Analcime and albite in altered  
Jurassic tuff in Idaho and Wyoming Jour. Geology, v. 68, no 4, p. 458-  
464 incl index map and table, July 1960.  
4-60. Minor elements in phosphorites of the Phosphoria formation [abs.]:  
Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1876, Dec. 1960, Econ.  
Geology, v. 55, no. 6, p. 1333, Sept.-Oct. 1960  
5-60. Petrology of the Meade Peak phosphatic shale member of the Phos-  
phoria formation at Coal Canyon, Wyoming U S. Geol. Survey Bull. 1111-C,  
p 71-146, illus., 1960  
6-60. A method of X-ray analysis for determining the ratio of calcite to  
dolomite in mineral mixtures U. S. Geol. Survey Bull. 1111-D, p. 147-  
152, illus., 1960.

GULF COAST ASSOCIATION of GEOLOGICAL SOCIETIES

- 1-60. Cenozoic field trips [Mississippi], 10th annual meeting, October 19-  
22, 1960, Guide Book Houston, Tex., Cambe Log Libr., 22 p., illus., 1960  
Includes papers by R. R. Priddy and E. J. Harvey, which are cited separate-  
ly.

GUNDERSEN, James Novotny

- 1-60. Lithologic classification of taconite from the type locality Econ. Geol-  
ogy, v. 55, no. 3, p. 563-573 incl. diagrams and table, May 1960.  
2-60. Stratigraphy of the Eastern Mesabi district, Minnesota Econ. Geol-  
ogy, v. 55, no. 5, p. 1004-1029 incl geol. sketch maps and tables, Aug. 1960

GUNST, Robert. See BRAZEE, Rutlage J. 1-60

GUNTER, Herman

- 1-60 Memorial to Fred Harvey Hall Calhoun (1874[1873]-1959) Geol. Soc. America Proc 1959, p. 115-116, portrait, Oct. 1960

GUPPY, Nicholas Gareth Lechmere

- 1-60. Structure of the earth, in Fisher, James and others, eds., The Doubleday pictorial library of nature--V. 2, Earth, plants, animals Garden City, N. Y., Doubleday and Co., Inc , p. 30-61 incl. illus., 1960.

GURNEE, Russell H.

- 1-60. The stream that bridged the river--strange natural formation in Guatemala Américas, v. 12, no 7, p. 31-34, illus., July 1960.  
2-60 Observations on Warm River Cave, Virginia Natl. Speleol Soc. NSS News, v. 18, no. 4, p. 34-36 incl. sketch maps, Apr 1960.  
3-60 The caves of Guatemala [abs.] Natl Speleol Soc NSS News, v. 18, no. 7, p 75, July 1960

GUSSOW, William Carruthers

- 1-60 The pre-Devonian unconformity in North America Internat. Geol. Cong., 21st, Copenhagen, 1960, Rept., pt. 19, p. 158-163 incl. geol. sketch map, 1960  
2-60. Jurassic-Cretaceous boundary in western Canada and Late Jurassic age of the Kootenay [abs.] Royal Soc Canada Minutes Proc , 3d ser., v 54, App C, p 37, 1960  
3-60 Jurassic-Cretaceous boundary in Western Canada and late Jurassic age of the Kootenay formation Royal Soc. Canada Trans , 3d ser., v 54, sec 4, p 45-64, illus , June 1960

GUTENBERG, Beno, 1889-1960

- 1-60 Low-velocity layers in the earth, ocean, and atmosphere Science, v. 131, no 3405, p 959-965 incl sketch map and diagrams, Apr 1, 1960  
2-60 The shadow of the earth's core Jour Geophys Research, v. 65, no. 3, p 1013-1020 incl diagrams and tables, Mar 1960  
3-60. PKIKP and pseudo-PKIKP phases at distance of less than 140° Royal Astron Soc. Geophys. Jour. (London), v. 3, no. 2, p 250-257 incl. diagrams and tables, June 1960  
4-60. Earthquakes in North America, in Smithsonian treasury of science, V. 2, True, W P, ed New York, N Y, Simon and Schuster, Inc., p. 379-397, revised 1960, originally published 1950  
5-60. Waves reflected at the "surface" of the earth--P'P'P'P' Seismol Soc. America Bull , v. 50, no 1, p 71-79 incl. diagrams, Jan. 1960

GUTIERREZ GIL, Roberto

- 1-60. Isthmus of Tehuantepec [Mexico]--Pt 1, Tehuantepec oil ['salt] domes may mark potential oil territory for Mexico--Pt. 2 Oil and Gas Jour , v. 58, no 7, p. 159-160, 162-163 incl sketch maps, sections and table, Feb. 15, 1960, no. 8, p. 150, 152-153, 155, 158, 160-161 incl structure contour maps and sections, Feb. 22, 1960

GUTJAHR, Christiaan Carl Maria

- 1-60. Palynology and its application in petroleum exploration [abs.]. Am. Assoc Petroleum Geologists Bull., v. 44, no. 9, p 1601, Sept. 1960  
2-60. Palynology and its application in petroleum exploration Gulf Coast Assoc. Geol. Socs. Trans., v. 10, p. 175-187, 1960

GUTSCHICK, Raymond Charles

- 1-60 Photography of Paleozoic arenaceous Foraminifera Jour Paleontology, v. 34, no. 4, p. 756-758 incl. diagram, July 1960.  
2-60 Early Mississippian (Lower Carboniferous-Tournasian) micropaleontology in the United States Internat. Geol Cong , 21st, Copenhagen, 1960, Rept , pt. 6, p 114-134 incl chart and sections, 1960.  
3-60 Early Mississippian Foraminifera of the United States [abs.] Geol. Soc America Bull., v 71, no. 12, pt 2, p 1876-1877, Dec. 1960.

GVOSDETSKY

GVOSDETSKY, Vasyl See EARDLEY, Armand John 1-60

GWINN, Vinton E. See also MUTCH, T A 1-60

1-60. Cretaceous Colorado group west of the Boulder batholith in Montana [abs.] Geol Soc. America Bull , v. 71, no 12, pt. 2, p 1877, Dec. 1960.

HABERLAND, Wolfgang. See DURR, Fritz 2-60

HABERMANN, Ben

1-60 A study of the capillary pressure-hydrodynamic relationship to oil accumulation in stratigraphic traps Canadian Mining and Metall. Bull., v 53, no. 582, p. 811-817 incl. structure maps, diagrams, and tables, Oct. 1960, Canadian Inst. Mining and Metallurgy Trans., v. 63, p 562-568, 1960

HACK, John Tilton

1-60. Relation of solution features to chemical character of water in the Shenandoah Valley, Virginia Art 179 in U S. Geol Survey Prof Paper 400-B, p B387-B390 incl. geol. sketch map, section, and table, 1960

2-60. Interpretation of erosional topography in humid temperate regions Am. Jour. Sci , v 258-A (Bradley Volume), p 80-97 incl sketch maps and diagrams, 1960

3-60. Origin of talus and scree in northern Virginia [abs.] Geol. Soc. America Bull., v 71, no 12, pt 2, p 1877-1878, Dec. 1960

4-60. (and GOODLETT, John C.) Geomorphology and forest ecology of a mountain region in the central Appalachians [Virginia-West Virginia] U S. Geol Survey Prof. Paper 347, 66 p , illus. incl geol. map, 1960

HACKETT, James Edward. See also MAXEY, G B. 1-60

1-60 Ground-water geology of Winnebago County, Illinois Illinois State Geol Survey Rept Inv. 213, 63 p., illus , 1960

HACKETT, Orwoll Milton

1-60 (and VISHER, Frank Newell, and McMURTREY, Robert Gale, and STEINHILBER, W. L.) Geology and ground-water resources of the Gallatin Valley, Gallatin County, Montana, with a section on Surface-water resources by Frank Stermitz and F. C. Boner, and a section on Chemical equality of the water by R. A. Krieger U. S. Geol. Survey Water-Supply Paper 1482, 282 p incl. sketch maps, diagrams, tables, and illus , also hydrol. maps and diagrams, 1960.

HACKMAN, Robert Joseph

1-60. The isopachometer--A new type parallax bar Photogramm. Eng., v 26, no. 3, p 457-463 incl. diagrams, June 1960

HACQUEBARD, Peter Albertus

1-60 The value of a quantitative separation of the maceral vitrinite into its constituents telinite and collinite for the petrography of coking coals. Internat Comm. Coal Petrology, 1st Internat. Cong. Coal Petrology, Heerlen, Netherlands, Sept 1958, Proc., nr 3, p 131-139 incl diagrams and discussion, 1960.

2-60 Contribution to the stratigraphical colloquium--a summary of Carboniferous stratigraphy and paleontology of the Maritime Provinces of Canada Cong. Av Etudes de Stratigraphie et de Géologie du Carbonifère, 4th, Sept. 15-20, 1958, Heerlen, Compte rendu, tome 1, p 233-235, Maastricht, Netherlands, 1960.

HADLEY, C J. See BURGESS, Richard Joseph 3-60

HADLEY, Jarvis Bardwell

1-60 The Madison landslide [Montana], in West Yellowstone--Earthquake area Billings Geol. Soc , 11th Ann. Field Conf., Sept. 1960, [Guidebook] p. 45-48 incl geol map and section and illus , 1960

2-60. Geology of the northern part of the Gravelly Range, Madison County, Montana, in West Yellowstone--Earthquake area Billings Geol Soc., 11th Ann Field Conf , Sept 1960, [Guidebook] p. 149-153 incl geol and structure sketch map, section, and table, 1960

HADLEY, Richard Frederick.

- 1-60. Recent sedimentation and erosional history of Fivemile Creek, Fremont County, Wyoming U. S. Geol. Survey Prof. Paper 352-A, p. 1-16, illus. incl. geol. map, 1960.

HAGAN, Wallace Woodrow

- 1-60. Oil exploration in Green County, Kentucky, and adjacent areas [abs.]. Am. Assoc. Petroleum Geologists Bull., v. 44, no. 7, p. 1249-1250, July 1960.

HAGER, Dilworth S.

- 1-60. (and BURNETT, Claude Murphy) Mexia-Talco fault line in Hopkins and Delta counties, Texas. Am. Assoc. Petroleum Geologists Bull., v. 44, no. 3, p. 316-356 incl. index, geol. sketch, and structure contour maps, and sections, Mar. 1960.

HAGERMAN, Otto

- 1-60. Tales from geode land [Mo.] Mineralogist, v. 28, nos. 4-5, p. 51-53, Apr.-May 1960.

HAHN, Abner Decker

- 1-60. (and FINE, Morris M.) Examination of ilmenite-bearing sands in Otter Creek Valley, Kiowa and Tillman Counties, Okla. U. S. Bur. Mines Rept. Inv. 5577, 77 p. incl. index, geol., and other sketch maps, diagrams, tables, and illus., 1960.

HAHN, Glenn Walter. See also LaSALA, A. M., Jr. 2-60, MASON, R. A. 1-60, RANDALL, A. D. 1-60

- 1-60. (and WOSINSKI, Jean A.) Ground-water levels in Rhode Island, 1957. Rhode Island Water Resources Coordinating Board Hydrol. Bull., 32 p. incl. sketch map, diagrams, and tables, 1960.

HAHN, W. C., Jr.

- 1-60. (and MUAN, Arnulf) Studies in the system Mn-O--The  $Mn_2O_3$ - $Mn_3O_4$  and  $Mn_3O_4$ - $MnO$  equilibria. Am. Jour. Sci., v. 258, no. 1, p. 66-78 incl. diagrams and tables, Jan. 1960.

HAIL, William James, Jr.

- 1-60. (and LEWIS, George Edward) Probable late Miocene age of the North Park formation in the North Park area, Colorado. Art. 116 in U. S. Geol. Survey Prof. Paper 400-B, p. B259-B260, 1960.
- 2-60. (and LEOPOLD, Estella Bergère) Paleocene and Eocene age of the Coalmont formation, North Park, Colorado. Art. 117 in U. S. Geol. Survey Prof. Paper 400-B, p. B260-B261, 1960.

HAITES, T. Binnert

- 1-60. Transcurrent faults in western Canada. Alberta Soc. Petroleum Geologists Jour., v. 8, no. 2, p. 33-78 incl. geol. and structure maps, chart, diagrams, and illus., Feb. 1960, errata, no. 3, p. 87, and critical comment by A. J. Goodman, p. 91, Mar. 1960.
- 2-60. Perspectives in the solar system. Alberta Soc. Petroleum Geologists Jour., v. 8, no. 12, p. 345-362 incl. diagrams and tables, Dec. 1960.

HALBERTSMA, Henk Leendert

- 1-60. (and STAPLIN, Frank Lyons) Mississippian-Pennsylvanian boundary from Peace River area to Williston basin [abs.]. Am. Assoc. Petroleum Geologists Bull., v. 44, no. 6, p. 957, June 1960.
- 2-60. (and STAPLIN, Frank Lyons) The Mississippian-Pennsylvanian boundary from the Peace River area to the Williston basin. Alberta Soc. Petroleum Geologists Jour., v. 8, no. 12, p. 363-373 incl. sketch maps, chart, and sections, Dec. 1960.

HALBOUTY, Michel Thomas

- 1-60. Dr. John T. Lonsdale (1895-1960). Houston Geol. Soc. Bull., v. 3, no. 3, p. 6-7, Nov. 1960.

## HALE

HALE, Dean

- 1-60. Gas "bubble" storage Petroleum Engineer for Management, v. 32, no. 9, p. D29-D30 incl. diagrams, Aug. 1960.

HALE, Lyle A

- 1-60. Annotations to accompany Cretaceous correlation chart [Wyoming-Colorado-Utah], in Overthrust belt of southwestern Wyoming and adjacent areas Wyoming Geol. Assoc., 15th Ann. Field Conf., 1960, Guidebook, p. 131-135 incl. chart, 1960.  
2-60. Frontier formation--Coalville, Utah, and nearby areas of Wyoming and Colorado, in Overthrust belt of southwestern Wyoming and adjacent areas Wyoming Geol. Assoc., 15th Ann. Field Conf., 1960, Guidebook, p. 136-146 incl. sections and chart, 1960.

HALEY, Boyd Raymond

- 1-60. Coal resources of Arkansas, 1954 U. S. Geol. Survey Bull. 1072-P, p. 795-831, illus., 1960.

HALL, Clarence Albert, Jr.

- 1-60. Displaced Miocene molluscan provinces along the San Andreas fault, California California Univ. Pubs. Geol. Sci., v. 34, no. 6, p. 281-308, illus., Nov. 15, 1960.

HALL, Eugene Raymond

- 1-60. Small carnivores from San Josecito Cave (Pleistocene), Nuevo León, México Kansas Univ. Mus. Nat. History Pub., v. 9, no. 20, p. 533-538, illus., Jan. 14, 1960.

HALL, Howard Tracy

- 1-60. Ultra-high pressure, high-temperature apparatus--the "belt" Rev. Sci. Instruments, v. 31, no. 2, p. 125-131 incl. diagrams and illus., Feb. 1960.

HALL, Thomas Ola

- 1-60. It takes an optimist to find oil Am. Assoc. Petroleum Geologists Bull., v. 44, no. 7, p. 984-986, July 1960

HALL, W. Ellis

- 1-60. Upper Permian correlations in southeastern New Mexico and adjacent parts of West Texas, in Geology of the Delaware basin West Texas Geol. Soc., Field Trip, Sept.-Oct. 1960, Guidebook, p. 85-88 incl. index map, and sections, 1960.

HALL, Francis Ramey. See also PALMQUIST, Wilbur Nathaniel, Jr. 1-60 thru 18-60

- 1-60. (and PALMQUIST, Wilbur Nathaniel, Jr.) Geologic map of Bath, Fleming, and Montgomery Counties, Kentucky (county group 18) U. S. Geol. Survey Hydrol. Inv. Atlas HA-18, sheet 1, scale 1:125,000 (about 1 in. to 2 mi.), 1960  
2-60. (and PALMQUIST, Wilbur Nathaniel, Jr.) Availability of ground water in Bath, Fleming, and Montgomery Counties, Kentucky (county group 18) U. S. Geol. Survey Hydrol. Inv. Atlas HA-18, sheet 2, map, scale 1:125,000 (about 1 in. to 2 mi.), 1960  
3-60. (and PALMQUIST, Wilbur Nathaniel, Jr.) Generalized columnar section and water-bearing character of the rocks in Bath, Fleming, and Montgomery Counties, Kentucky (county group 18) U. S. Geol. Survey Hydrol. Inv. Atlas HA-18, sheet 3, 1960.  
4-60. (and PALMQUIST, Wilbur Nathaniel, Jr.) Geologic map of Clark, Estill, Madison, and Powell Counties, Kentucky (county group 19) U. S. Geol. Survey Hydrol. Inv. Atlas HA-19, sheet 1, scale 1:125,000 (about 1 in. to 2 mi.), 1960.  
5-60. (and PALMQUIST, Wilbur Nathaniel, Jr.) Availability of ground water in Clark, Estill, Madison, and Powell Counties, Kentucky (county group 19) U. S. Geol. Survey Hydrol. Inv. Atlas HA-19, sheet 2, map, scale 1:125,000 (about 1 in. to 2 mi.), 1960

- 6-60. (and PALMQUIST, Wilbur Nathaniel, Jr.) Generalized columnar section and water-bearing character of the rocks in Clark, Estill, Madison, and Powell Counties, Kentucky (county group 19) U. S. Geol Survey Hydrol. Inv. Atlas HA-19, sheet 3, 1960.
- 7-60. (and PALMQUIST, Wilbur Nathaniel, Jr.) Geologic map of Marion, Nelson, and Washington Counties, Kentucky (county group 21) U. S. Geol. Survey Hydrol. Inv. Atlas HA-21, sheet 1, scale 1 125,000 (about 1 in. to 2 mi.), 1960.
- 8-60. (and PALMQUIST, Wilbur Nathaniel, Jr.) Availability of ground water in Marion, Nelson, and Washington Counties, Kentucky (county group 21): U. S. Geol. Survey Hydrol. Inv. Atlas HA-21, sheet 2, map, scale 1 125,000 (about 1 in. to 2 mi.), 1960
- 9-60. (and PALMQUIST, Wilbur Nathaniel, Jr.) Generalized columnar section and water-bearing character of the rocks in Marion, Nelson, and Washington Counties, Kentucky (county group 21). U. S. Geol Survey Hydrol. Inv. Atlas HA-21, sheet 3, 1960.
- 10-60. (and PALMQUIST, Wilbur Nathaniel, Jr.) Geologic map of Carroll, Gallatin, Henry, Owen, and Trimble Counties, Kentucky (county group 23) U. S. Geol. Survey Hydrol. Inv. Atlas HA-23, sheet 1, scale 1.125,000 (about 1 in. to 2 mi.), 1960.
- 11-60. (and PALMQUIST, Wilbur Nathaniel, Jr.) Availability of ground water in Carroll, Gallatin, Henry, Owen, and Trimble Counties, Kentucky (county group 23) U. S. Geol Survey Hydrol. Inv. Atlas HA-23, sheet 2, map, scale 1 125,000 (about 1 in. to 2 mi.), 1960.
- 12-60 (and PALMQUIST, Wilbur Nathaniel, Jr ) Generalized columnar section and water-bearing character of the rocks in Carroll, Gallatin, Henry, Owen, and Trimble Counties, Kentucky (county group 23) U. S. Geol Survey Hydrol. Inv. Atlas HA-23, sheet 3, 1960.
- 13-60 (and PALMQUIST, Wilbur Nathaniel, Jr.) Geologic map of Anderson, Franklin, Shelby, Spencer, and Woodford Counties, Kentucky (county group 24) U. S. Geol Survey Hydrol. Inv. Atlas HA-24, sheet 1, scale 1 125,000 (about 1 in. to 2 mi.), 1960.
- 14-60. (and PALMQUIST, Wilbur Nathaniel, Jr.) Availability of ground water in Anderson, Franklin, Shelby Spencer, and Woodford Counties, Kentucky (county group 24) U. S Geol Survey Hydrol. Inv. Atlas HA-24, sheet 2, map, scale 1 125,000 (about 1 in. to 2 mi ), 1960.
- 15-60 (and PALMQUIST, Wilbur Nathaniel, Jr.) Generalized columnar section and water-bearing character of the rocks in Anderson, Franklin, Shelby, Spencer, and Woodford Counties, Kentucky (county group 24) U. S. Geol Survey Hydrol. Inv. Atlas HA-24, sheet 3, 1960.

HALL, Wayne Everett

- 1-60. Geochemical study of Pb-Ag-Zn ore from the Drawin mine, Inyo County, California Am. Inst Mining, Metall., and Petroleum Engineers Trans. 1959, v. 214, p. 940, 1960.

HALL, William Bartlett

- 1-60. Multiple glaciation in the Madison and Gallatin Ranges, southwestern Montana, in West Yellowstone--Earthquake area Billings Geol. Soc., 11th Ann Field Conf, Sept 1960, [Guidebook] p 191-199 incl illus, 1960
- 2-60 Mass-gravity movements in the Madison and Gallatin Ranges, southwestern Montana, in West Yellowstone--Earthquake area Billings Geol. Soc, 11th Ann. Field Conf., Sept. 1960, [Guidebook] p 200-206 incl illus., 1960.

HALLETT, Archibald Cameron Hollis. See JONES, G. H. S. 1-60

HALLIDAY, William R.

- 1-60. Changing concepts of speleogenesis, in Moore, G. W., ed, Origin of limestone caves--A symposium with discussion Natl. Speleol Soc. Bull., v 22, pt. 1, p 23-29, Jan 1960.
- 2-60. Pseudokarst in the United States Natl. Speleol Soc Bull, v. 22, pt. 2, p. 109-113, illus., July 1960.

HALLINGER, Donald E

- 1-60. Stratigraphy and brachiopod fauna of the Chatham Hill limestone at the type locality [abs.] Virginia Jour Sci., v. 11, no. 4, p. 216, Sept 1960.

## HALLOCK

HALLOCK, Allan R.

- 1-60. Stratigraphy and correlation of the Mesaverde group and Ft Union formation, southern Bridger Basin, Wyoming, in Overthrust belt of southwestern Wyoming and adjacent areas Wyoming Geol. Assoc., 15th Ann. Field Conf., 1960, Guidebook, p. 153-154, correlation chart, 1960

HALSTEAD, E. C. See CANADA GEOL. SURVEY 2-60

HALVA, Carroll J. See also DAMON, P. E. 1-60, GREEN, W. D. 1-60

- 1-60. A semi-micro analysis of silicate rocks for Ca, Mg, Fe, and Al employing E.D.T.A. Arizona Geol. Soc. Digest, v. 3, p. 81-86 incl. tables, Mar. 1960.

HAM, William Eugene. See also HOWERY, S. D. 1-60, LOVETT, F. D. 1-60  
1-60. Middle Permian evaporites in southwestern Oklahoma Internat. Geol. Cong., 21st, Copenhagen, 1960, Rept., pt. 12, p. 138-151 incl. sketch maps and sections, 1960.

- 2-60. (and DENISON, Rodger E., and MERRITT, Clifford Addison) Basement rocks of southern Oklahoma [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1878, Dec. 1960.

3-60. (and MANKIN, Charles John, and SCHLEICHER, John Anthony) Borate minerals in Permian gypsum of western Oklahoma [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1878-1879, Dec. 1960

4-60. (and CURTIS, Neville Mackay, Jr.) Common minerals, rocks, and fossils of Oklahoma Oklahoma Geol. Survey Guidebook 10, 28 p., illus. incl. geol. map, 1960

5-60. Glassy pebbles in southwestern Oklahoma--obsidian vs. tektite Oklahoma Geology Notes, v. 20, no. 4, p. 92-95, illus., Apr. 1960

6-60. (and DODD, Charles Gardner, and RAY, Satyabrata) Field trip to Wichita Mountain area, southwestern Oklahoma, held in conjunction with the 8th National Clay Conference, October 11, 1959, in Swineford, Ada, ed., Clays and clay minerals, V. 8. Natl. Conf. Clays and Clay Minerals, 8th, Norman, Okla., Oct. 1959, Proc., p. 1-10 incl. diagrams and tables, 1960. (Issued as Internat. Earth Science Ser. Mon. 9 of Pergamon Press, New York.)

HAMBLIN, William Kenneth

- 1-60. Micro-cross-lamination in Upper Keweenawan sedimentary rocks of northern Michigan [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1879, Dec. 1960.

HAMELIN, Louis Edmond

- 1-60. Classification générale des glaces flottantes Naturaliste Canadien, v. 87, no. 10, p. 209-227, tables, Oct. 1960

HAMILL, Robert William

- 1-60. Pleistocene mollusca of southeastern South Dakota [abs.] South Dakota Acad. Sci. Proc. 1959, v. 38, p. 53, Jan. 1960

HAMILTON, Edwin Lee See also DAVIS, G. H. 1-60

- 1-60. Ocean basin ages and amounts of original sediments Jour. Sed. Petrology, v. 30, no. 3, p. 370-379 incl. diagram and tables, Sept. 1960

HAMILTON, Eric I

1-60. The distribution of radioactivity in some fine-grained igneous rocks [Greenland] Geol. Mag. (Hertford, England), v. 97, no. 3, p. 255-260 incl. tables, 1960, reprinted as Grønlands Geol. Undersøgelse Misc. Paper 25, 1960.

2-60. The distribution of radioactivity in the major rock forming minerals Medd. om Grønland, bind 162, nr. 8, 41 p., illus., 1960, reprinted as Copenhagen Univ. Mus. Minéralogie et Géologie Commun. Géol. 97, 1960, Grønlands Geol. Undersøgelse Misc. Paper 26, 1960.

HAMILTON, John C. See MYERS, Alfred Tennyson 1-60, 2-60



HAMILTON, J. J.

- 1-60. (and CRAWFORD, C. B.) Improved determination of preconsolidation pressure of a sensitive clay, in *Papers on soils* Am. Soc. Testing Materials Spec. Tech. Pub. 254, p 254-271 incl. diagrams, illus., and tables, with discussion, June 1960.

HAMILTON, Robert Gilbert

- 1-60. The revolution in well logging *Oil and Gas Jour*, v. 58, no. 26, p. 187-188 incl. chart and tables, June 27, 1960.

HAMILTON, Warren Bell. See also KING, P. B. 2-60, RICHMOND, G. M. 2-60 1-60. Metamorphism and thrust faulting in the Riggins quadrangle, Idaho Art. 103 in *U. S. Geol. Survey Prof. Paper 400-B*, p. B230-B231 incl. sketch map, 1960.

- 2-60. Pliocene(?) sediments of salt water origin near Blythe, southeastern California Art. 125 in *U. S. Geol. Survey Prof. Paper 400-B*, p. B276-B277, 1960.

3-60 Structure in the Big Maria Mountains of southeastern California Art. 126 in *U. S. Geol. Survey Prof. Paper 400-B*, p. B277-B278 incl. sections and diagrams, 1960.

4-60. Silicic differentiates of lopoliths *Internat. Geol. Cong*, 21st, Copenhagen, 1960, Rept., pt. 13, p. 59-67 incl. diagrams and table, 1960

5-60. Origin of the Gulf of California [Mexico] [abs.] *Jour. Geophys. Research*, v. 65, no. 8, p. 2495, Aug. 1960.

6-60. Late Cenozoic tectonics and volcanism of the Yellowstone region, Wyoming, Idaho, and Montana [abs.] *Geol. Soc. America Bull.*, v. 71, no. 12, pt. 2, p. 1879, Dec. 1960.

7-60. Late Cenozoic tectonics and volcanism of the Yellowstone region Wyoming, Montana, and Idaho, in *West Yellowstone--Earthquake area* *Billings Geol. Soc.*, 11th Ann. Field Conf., Sept 1960, [Guidebook] p. 92-105 incl. geol. sketch maps and illus., 1960.

8-60. Form of the Sudbury lopolith [Ontario] *Canadian Mineralogist*, v. 6, pt. 4, p. 437-447, illus., 1960.

HAMLIN, William H.

- 1-60. Two new species of Foraminifera from the west coast of the United States *Cushman Found. Foram. Research Contr.*, v. 11, pt. 3, p. 87-88, illus., July 1960.

HAMMELL, Laurence. See LODDING, William 1-60

HAMWAY, Paulette

- 1-60. (and CEFOLA, Michael, and NAGY, Bartholomew Stephen) Radioactive tracer study of the separation efficiencies of rock and sediment organic matter in laboratory chromatographic columns [abs.] *Geol. Soc. America Bull.*, v. 71, no. 12, pt. 2, p. 1880, Dec. 1960.

HANCOCK, C. W., Jr. See WILSON, Stanley D 1-60

HAND, Hiram Darby

- 1-60. Resume of tectonic activity in the Green River basin, Wyoming, in *Overthrust belt of southwestern Wyoming and adjacent areas*. *Wyoming Geol. Assoc.*, 15th Ann. Field Conf., 1960, Guidebook, p. 248-250 incl. index map, 1960.

HAND, John E. See WILKENING, Marvin Hubert 1-60

HANDIN, John Walter See also BORG, Iris Y. 1-60, GRIGGS, D. T. 1-60, 4-60

1-60. Flow, fracture, and strength of rocks in the laboratory. *Am. Geophys. Union Trans.*, v. 41, no. 2, p. 162-165 incl. table, June 1960

2-60. (and HIGGS, Donald V., and O'BRIEN, Joseph K.) Torsion of Yule marble under confining pressure, Chap. 9 in *Griggs, D. T., ed, Rock deformation--A symposium* *Geol. Soc. America Mem.* 79, p. 245-274, illus., 1960.

## HANDLEY

HANDLEY, Raymond

- 1-60. Fluorescent x-ray determination of selenium in plant material Anal. Chemistry, v. 32, no. 12, p. 1719-1720 incl. diagram and table, Nov. 1960.

HANDWERK, Joseph Henry. See BASKIN, Yehuda 1-60

HANDY, Richard Lincoln See also DAHL, A. R. 1-60, DANIELS, R. B. 2-60, DAVIDSON, D. T. 2-60, 3-60; HANWAY, J. J. 1-60, LYON, C. A. 1-60

- 1-60. (and LYON, Craig Alfred, and DAVIDSON, Donald Thomas) Analysis of wind-blown silts, in Geologic and engineering properties of Pleistocene materials in Iowa Iowa State Univ. Sci. and Technology, Iowa Eng. Expt. Sta. Bull. 191 (Iowa State Highway Comm., Iowa Highway Research Board Bull. 20), p. 1-13 incl. index map, diagrams, table, and illus., reprinted, Dec. 7, 1960, originally published 1954

- 2-60. (and LYON, Craig Alfred, and DAVIDSON, Donald Thomas) Comparisons of petrographic and engineering properties of loess in southwest, east-central, and northeast Iowa, in Geologic and engineering properties of Pleistocene materials in Iowa Iowa State Univ. Sci. and Technology, Iowa Eng. Expt. Sta. Bull. 191 (Iowa State Highway Comm., Iowa Highway Research Board Bull. 20), p. 65-80 incl. index map, diagrams, and tables, reprinted, Dec. 7, 1960, originally published 1955.

HANKING, B. M. See WICKERSHEIM, Kenneth A. 1-60

HANNAH, G. J. Raymond

- 1-60. Red Lake [Ontario]--Gold camp of distinction Precambrian, v. 33, no. 11, p. 8-15 incl. sketch maps and illus., Nov. 1960

HANNON, Norbert Michael, Jr. See KNIGHT, Jack William 1-60

HANSEN, Dan Erick. See ANDERSON, Sidney Bakken 3-60

HANSEN, John Andrew, Jr.

- 1-60 (and DAHL, Arthur R., and DAVIDSON, Donald Thomas) Further studies of loess in Iowa--thickness, clay content, and engineering classification, in Geologic and engineering properties of Pleistocene materials in Iowa Iowa State Univ. Sci. and Technology, Iowa Eng. Expt. Sta. Bull. 191 (Iowa State Highway Comm., Iowa Highway Research Board Bull. 20), p. 88-92 incl. sketch maps and sections, reprinted, Dec. 7, 1960, originally published 1958

- 2-60 (and DAVIDSON, Donald Thomas, and ROY, Chalmer John) Geologic and engineering properties of till and loess, southeast Iowa, in Geologic and engineering properties of Pleistocene materials in Iowa Iowa State Univ. Sci. and Technology, Iowa Eng. Expt. Sta. Bull. 191 (Iowa State Highway Comm., Iowa Highway Research Board Bull. 20), p. 133-166 incl. sketch maps, diagrams, tables, and illus., Dec. 7, 1960

HANSEN, Miller

- 1-60. Regional gravity map of northwestern North Dakota North Dakota Geol. Survey Rept. Inv. 35, 1 sheet, scale about 1 in. to 1 mi., with text, 1960

- 2-60. Magnetic map, in Oil fields in the Burke County area, North Dakota--Geological, magnetic, and engineering studies North Dakota Geol. Survey Rept. Inv. 36, p. 26-27, illus., 1960.

HANSEN, Wallace Ray. See also RITZMA, H. R. 1-60

- 1-60. Improved Jacob staff for measuring inclined stratigraphic intervals Am. Assoc. Petroleum Geologists Bull., v. 44, no. 2, p. 252-254 incl. diagram and illus., Feb. 1960.

- 2-60. (and KINNEY, Douglas Merrill, and GOOD, John Maxwell) Distribution and physiographic significance of the Browns Park formation, Flaming Gorge and Red Canyon areas, Utah-Colorado Art. 115 in U. S. Geol. Survey Prof. Paper 400-B, p. B257-B259 incl. geol. sketch map, 1960.

- 3-60. Precambrian rocks of the eastern Uinta Mountains--A classic relationship [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1880-1881, Dec. 1960.

HANSHAW, Penelope M.

- 1-60. (and BARNETT, Paul Redmond) Possible use of boron, chromium, and nickel content in correlating Triassic igneous rocks in Connecticut Art 76 in U S Geol Survey Prof Paper 400-B, p B170-B172 incl diagram, 1960.

HANSON, Alfred Wallace

- 1-60 The crystal structure of eosphorite Acta Cryst , v 13, pt. 5, p 384-387 incl. diagrams and tables, May 1960

HANSON, Alvin Maddison

- 1-60. Cambrian of the Madison River valley area, [Montana], in West Yellowstone--Earthquake area Billings Geol Soc., 11th Ann Field Conf ,Sept. 1960, [Guidebook] p. 207-212 incl sections, 1960

HANSON, William Ellum See ERDMAN, John Gordon 1-60, ZARRELLA, W M 1-60

HANTUSH, Mahdi Salih

- 1-60. Aquifer tests on partially penetrating wells [abs ] Jour Geophys Research, v 65, no 8, p 2495, Aug. 1960.

HANWAY, John Joseph

- 1-60 (and HANDY, Richard Lincoln, and SCOTT, Albert Duncan) Exchangeable potassium and clay minerals in selected Iowa soil profiles Iowa Acad Proc 1960, v 67, p. 215-231 incl diagrams and tables, Dec. 27, 1960, reprinted, in Davidson, D T., Methods for testing engineering soils Iowa State Univ Sci and Technology, Iowa Eng Expt Sta Bull 192 (Iowa State Highway Comm., Iowa Highway Research Board Bull. 21), p 137-152, Dec. 14, 1960

HAPGOOD, Charles H.

- 1-60 Great mysteries of the earth New York, N Y , G P Putnam's Sons, 72 p , illus., 1960.

HARA, T.

- 1-60. (and SANDELL, Ernest Birger) Spectrophotometric determination of ruthenium with 1,4-diphenylthiosemicarbazide with special reference to meteorites Anal. Chim. Acta (Amsterdam), v 23, no 1, p 65-71 incl diagrams and tables, July 1960

HARADA, Yoshiro See BASKIN, Yehuda 1-60

HARBAUGH, John Warvelle. See also WOLF, K. H. 2-60

- 1-60 Marine bank development in Plattsburg limestone (Upper Pennsylvanian) in Neodesha-Fredonia area, southeastern Kansas [abs ] Am Assoc. Petroleum Geologists Bull , v 44, no. 1, p 127-128, Jan. 1960.  
2-60. Petrology of marine bank limestones of Lansing Group (Pennsylvanian), southeast Kansas Kansas State Geol. Survey Bull 142, pt. 5, p 189-234, illus., Dec 1, 1960

HARBOUR, Jerry

- 1-60. Sedimentology and stratigraphy of the basin-fill sediments in the Safford Valley Arizona Geol. Soc Digest, v. 3, p 131-132, Mar 1960.

HARBOUR, Robert Lee. See also ROSWELL GEOL. SOC. 1-60

- 1-60. Precambrian rocks at North Franklin Mountain, Texas Am Assoc. Petroleum Geologists Bull., v. 44, no. 11, p 1785-1792 incl. geol. map, sections, and illus., Nov 1960.

HARDENBERG, Harry John

- 1-60. Michigan's gems and minerals Gems and Minerals, no 274, p. 20-22, 85 incl illus , July 1960

HARDER, Alfred Harry

- 1-60. The geology and ground-water resources of Calcasieu Parish, Louisiana U. S Geol Survey Water-Supply Paper 1488, 102 p., illus , 1960.

## HARDER

HARDER, Edmund Cecil

- 1-60 (and GREIG, Edmund Wendell) Bauxite, in Am. Inst Mining, Metall, and Petroleum Engineers, Industrial minerals and rocks, p 65-85 incl. diagrams and tables, 1960

HARDING, James L.

- 1-60. Heavy-mineral occurrences on islands of the Mississippi Sound and adjacent areas of the mainland [abs.] Geol. Soc. America Bull., v. 71, no 12, pt 2, p. 2015-2016, Dec. 1960

HARDT, William Frederick

- 1-60. (and STULIK, R. S., and BOOHER, M. B.) Annual report on ground water in Arizona, spring 1959 to spring 1960 Arizona State Land Dept Water Resources Rept. 7, [89] p, illus., Sept 1960

HARDY, Robert Macdonald See also WILSON, S D

- 1-60 (and LEGGET, Robert Ferguson) Boulder in varved clay at Steep Rock Lake, Ontario, Canada Geol. Soc America Bull., v. 71, no. 1, p 93-94, illus, Jan 1960  
2-60. (and LEGGET, Robert Ferguson) Engineering significance of the soils of Canada [abs ] Royal Soc. Canada Minutes Proc, 3d ser., v. 54, App. C, p 41, 1960.

HARKER, Peter

- 1-60. (and THORSTEINSSON, Raymond) Permian rocks and faunas of Grinnell Peninsula, Arctic Archipelago Canada Geol. Survey Mem. 309, 146 p., illus incl. geol sketch map, 1960.

HARKER, Robert Ian

- 1-60. Dehydration series in the system  $\text{CaSiO}_3\text{-SiO}_2\text{-H}_2\text{O}$  [abs.] Geol Soc. America Bull., v. 71, no 12, pt. 2, p 1881, Dec. 1960

HARKSEN, John Christian

- 1-60. Geology of the Manderson quadrangle, South Dakota South Dakota Geol. Survey [Geol. Map], scale 1 62,500 (about 1 in. to 1 mi.), with text, 1960  
2-60. Geology of the Sharps Corner quadrangle, South Dakota South Dakota Geol. Survey [Geol. Map], scale 1 62,500 (about 1 in to 1 mi ), with text, 1960.

HARLAND, W. B

- 1-60 The earth--rocks, minerals, and fossils New York, N Y, Franklin Watts, 255 p., illus incl. geol. map, 1960

HARLTON, Bruce H.

- 1-60. Stratigraphy of Cement pool and adjacent area, Caddo and Grady Counties, Oklahoma Am. Assoc. Petroleum Geologists Bull., v 44, no 2, p. 210-226 incl. index and sketch maps, sections, and chart, Feb 1960

HARMS, John Conrad

- 1-60. Structural geology of the eastern flank of the southern Front Range, Colorado [abs ] Dissert. Abs., v 20, no 10, p 4077-4078, Apr 1960.

HARRELL, Byron Eugene

- 1-60. Notes on fossil birds from the Pleistocene of Kansas and Oklahoma South Dakota Acad. Sci Proc. 1959, v. 38, p 103-106, Jan. 1960

HARRIES, H See TEDROW, John C F 1-60

HARRINGTON, John Wilbur

- 1-60 Philosophy of petroleum exploration Am. Assoc Petroleum Geologists Bull., v 44, no 2, p 227-234 incl. diagrams, Feb 1960, discussion by J M. Pollack, no. 9, p 1572-1574 incl diagrams and table, Aug. 1960.

HARRIS, Hobart Byron

1-60. (and MOORE, Gerald K., and CAUSEY, Lawson V ) Interim report on ground-water study in Colbert County, Alabama Alabama Geol. Survey Inf. Ser. 20, 59 p., illus., 1960.

HARRIS, John F.

1-60 (and TAYLOR, Garvin Lawrence, and WALPER, Jack Louis) Relation of deformational fractures in sedimentary rocks to regional and local structure [Wyoming] Am. Assoc Petroleum Geologists Bull., v. 44, no. 12, p. 1853-1873 incl. index and sketch maps, sections, tables, and illus., Dec 1960.

HARRIS, Lawrence Alvin. See KOPP, Otto Charles 1-60, POTTER, R. A. 1-60

HARRIS, Leonard Dorreen

1-60. Drowned valley topography at beginning of Middle Ordovician deposition in southwest Virginia and northern Tennessee Art. 83 in U. S. Geol. Survey Prof. Paper 400-B, p. B186-B189 incl. index map, diagrams, and illus., 1960.

HARRIS, Peter G.

1-60. (and ROWELL, J. A.) Some geochemical aspects of the Mohorovičić discontinuity Jour Geophys. Research, v 65, no. 8, p 2443-2459 incl. diagram and tables, Aug 1960.

HARRIS, Reginald Wilson

1-60 Review of systematics and recent research of primitiopsid Ostracoda Oklahoma Geology Notes, v. 20, no 7, p. 176-182, illus., July 1960.  
2-60 An index ostracode from the Arbuckle limestone, Oklahoma Oklahoma Geology Notes, v 20, no 9, p. 211-216, illus., Sept 1960

HARRISON, Arthur Elliot

1-60. Exploring glaciers--with a camera San Francisco, Calif., Sierra Club, 71 p., illus., 1960.

HARRISON, Earl Preston

1-60. Group 4000 pool, Nolan County, Texas, in Abilene Geol. Soc., Geological contributions 1960, p. 50-60, illus., 1960

HARRISON, Jack Lamar

1-60. (and DROSTE, John Brown) Clay partings in gypsum deposits in southwestern Indiana, in Swineford, Ada, ed., Clays and clay minerals Natl. Conf. Clays and Clay Minerals, 7th, Washington, D. C., Oct. 1958, Proc, p 195-199 incl sketch map and section, 1960 (Issued as Internat. Earth Science Ser. Mon 5 of Pergamon Press, New York.)

HARRISON, James Merritt

1-60. The Geological Survey of Canada Canadian Mining Jour., v. 81, no 8, p 49-57 incl sketch map and illus., Aug. 1960

HARRISON, John C. See NETTLETON, Lewis Lomax 1-60

HARDISON, Mae W.

1-60 (and WEAVER, Opal V., compilers) List of journal articles by Bureau of Mines authors, published July 1, 1910, to January 1, 1960, with subject index U S. Bur Mines Spec Pub, 295 p., 1960.

HARRISON, Wyman. See also LYON, C. J 1-60

1-60 Original bedrock composition of Wisconsin till in central Indiana Jour Sed Petrology, v. 30, no. 3, p 432-446 incl. index map, diagrams, and tables, also geol. map, Sept 1960.

HARRY, William Trevelyan

1-60. (and EMELEUS Charles H.) Mineral layering in some granite intrusions of S.W. Greenland Internat. Geol. Cong, 21st, Copenhagen, 1960,

## HARRY

Rept , pt 14, p 172-181 incl sketch map and diagrams, 1960, reprinted as Grønlands Geol Undersøgelse Misc Paper 27, 1960.

### HARSHBARGER, John William

1-60. Geologic framework and hydrology of intermontane valleys of the Great Basin [abs.] Geol. Soc. America Bull., v. 71, no 12, pt 2, p 1881-1882, Dec. 1960

2-60. (and SMILEY, Terah LeRoy) Utilization of arid lands project (general statement) Arizona Geol. Soc. Digest, v 3, p 111-112, Mar. 1960.

### HART, Stanley Robert. See also MOORE, J. M. 1-60

1-60. (and FAIRBAIRN, Harold Williams, and PINSON, William Hamet, Jr., and HURLEY, Patrick Mason) Use of amphiboles and pyroxenes for K-Ar dating [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p 1882, Dec. 1960.

### HARTLEY, Robert P

1-60. Sand dredging areas in Lake Erie Ohio Div. Shore Erosion Tech. Rept. 5, 79 p., illus., Jan 1960.

### HARTMAN, James A.

1-60 Titanium mineralogy of certain bauxites and their parent materials Econ Geology, v. 55, no 6, p. 1313-1314, Sept.-Oct. 1960 (Reply to communication from M. Fleischer discussing author's paper, v. 54, p. 1380-1405, 1959.)

### HARTMAN, Richard Thomas See WALKER, Philip Caleb 1-60

### HARTSHORN, Joseph Harold. See also TUTTLE, C R. 1-60

1-60. Geology of the Bridgewater quadrangle, Massachusetts U. S. Geol. Survey Geol. Quad. Map GQ-127, scale 1:24,000 (1 in. to 2,000 ft.), with text, 1960.

### HARVEY, Cyril Hingston, 2d

1-60. Stratigraphy, sedimentation, and environment of the White River group of the Oligocene of northern Sioux County, Nebraska [abs.]: Dissert. Abs., v. 21, no 6, p. 1525, Dec 1960.

### HARVEY, Edward Joseph

1-60. (and NICHOLS, Julius LaFayette) Surface and subsurface stratigraphy of the Quaternary and Upper Tertiary of the Pascagoula area, Mississippi, in Cenozoic of southeast Mississippi and southwest Alabama Mississippi Geol. Soc., 15th Field Trip, May 1960, Guidebook, p. 35-40 incl section and correlation chart, 1960.

2-60. (and NICHOLS, Julius LaFayette) Stratigraphy of the Quaternary and Upper Tertiary of the Pascagoula Valley, Mississippi, in Cenozoic field trips Gulf Coast Assoc. Geol. Soc., 10th Ann Mtg., Oct 19-22, 1960, Guidebook, p 9-14, illus., 1960.

### HARVEY, Richard David

1-60. Hydrothermal alteration in the Goldfield district, Nevada [abs.] Dissert. Abs., v. 21, no 3, p 594, Sept 1960.

### HARWOOD, Robert J.

1-60. (and LEMISH, John) Carbonate aggregate-cement paste reactions [abs.] Geol. Soc. America Bull., v. 71, no 12, pt 2, p 1882-1883, Dec. 1960.

### HASHIMOTO, Isao

1-60 (and JACKSON, Marion LeRoy) Rapid dissolution of allophane and kaolinite-halloysite after dehydration, in Swineford, Ada, ed., Clays and clay minerals Natl. Conf. Clays and Clay Minerals, 7th, Washington, D. C., Oct. 1958, Proc., p 102-113 incl. diagrams and tables, 1960. (Issued as Internat. Earth Science Ser. Mon 5 of Pergamon Press, New York.)

## HASHIMOTO, T

- 1-60 Preliminary report on Hippocampe Lake area, Mistassini Territory Quebec Dept Mines Geol. Surveys Br Prelim. Rept 438, 5 p, geol. map, 1960, also French ed

## HASKELL, Norman Abraham

- 1-60 Crustal reflection of plane SH waves Jour Geophys Research, v 65, no 12, p 4147-4150 incl diagram, Dec. 1960.

## HASTINGS, Andrew D., Jr.

- 1-60. Environment of southeast Greenland U S Army Quartermaster Research and Eng. Center Environmental Protection Research Div Tech. Rept EP-140, 62 p incl sketch maps, diagrams, and tables, Oct 1960.

## HASTINGS, Earl L See also DANIEL, T. W, Jr 1-60, 2-60, McGLAMERY, Winnie 1-60

- 1-60 Bibliography of Alabama geology, 1935-1958 Alabama Geol. Survey Bull. 67, 138 p, 1960

## HASTINGS, James S

- 1-60. Exploration and development drilling in the Uruvan mineral belt [Utah], in Geology of the Paradox Basin fold and fault belt Four Corners Geol. Soc, 3d Field Conf., 1960, [Guidebook] p 115-117, illus., 1960.

## HATHAWAY, John Cummins. See also FOSTER, M D. 2-60

- 1-60 (and ROBERTSON, Eugene Corley) Microtexture of artificially consolidated aragonitic mud [abs.] Geol. Soc America Bull, v 71, no 12, pt 2, p 1883, Dec 1960

## HATHERTON, T See COOK, John Call 1-60

## HATTERSLEY-SMITH, Geoffrey

- 1-60 Studies of englacial profiles in the Lake Hazen area of northern Ellesmere Island [Northwest Territories] Jour. Glaciology (Cambridge, England), v 3, no 27, p 610-625, illus, and French and German abs, Mar. 1960  
2-60 Some glaciological studies in the Lake Hazen region of northern Ellesmere Island [Northwest Territories] [abs] Oil in Canada, v 12, no. 16, p 34-35, Feb 15, 1960.

## HATTIN, Donald Edward See also PERRY, T. G 2-60

- 1-60 Waldron (Niagaran) Foraminifera in Indiana [abs] Geol Soc America Bull, v 71, no 12, pt 2, p. 2016, Dec. 1960

## HAUCK, Anthony M See MADDEN, Theodore R 1-60

## HAUGHT, Oscar Lee

- 1-60. Map of Gilmer and Lewis Counties showing oil and gas fields, structural contours on top of Greenbrier limestone West Virginia Geol. and Econ. Survey, scale 1 62,500 (about 1 in. to 1 mi), with section, 1960  
2-60. Map of Kanawha County showing oil and gas fields, structural contours on top of Berea sandstone and Huntersville chert West Virginia Geol. and Econ Survey, scale 1 62,500 (about 1 in. to 1 mi), with section, 1960.  
3-60 Oil and gas report on Lewis and Gilmer Counties, West Virginia West Virginia Geol and Econ Survey Bull 18, 14 p, illus., Apr 1960  
4-60 Oil and gas report on Kanawha County, West Virginia West Virginia Geol. and Econ Survey Bull. 19, 24 p, illus., 1960  
5-60. (and McCORD, Wallace Ronald) Oriskany gas development and structural map, Onandaga-Huntersville, West Virginia West Virginia Geol and Econ Survey Rept Inv 20, 28 p, illus, 1960

## HAUMANN, Dieter

- 1-60. Photogrammetric and glaciological studies of Salmon Glacier [British Columbia] Arctic, v 13, no 2, p 74-110, illus, June 1960.

## HAUN

HAUN, John Daniel. See also ROCKY MTN ASSOC. GEOLOGISTS 1-60, WEIMER, R. J. 2-60

1-60. (and WEIMER, Robert Jay) Cretaceous stratigraphy of Colorado, in Rocky Mtn. Assoc. Geologists, Guide to the geology of Colorado Denver, p 58-65 incl. index and sketch maps, sections, and table, 1960.

HAUPTMAN, Herbert Aaron. See also SMITH, J. V. 4-60

1-60. (and KARLE, Isabella Lugoski, and KARLE, Jerome) Crystal structure of spurrite,  $\text{Ca}_5(\text{SiO}_4)_2\text{CO}_3$ --[Pt] 1, Determination by the probability method Acta Cryst., v. 13, pt 6, p 451-453 incl. diagrams and tables, June 1960.

HAURY, Emil Walter

1-60. Association of fossil fauna and artifacts of the Sulphur Spring stage, Cochise culture [Arizona] Am. Antiquity, v. 25, no. 4, p 609-610, Apr. 1960.

HAUSEN, Donald Martin

1-60. Schoderite, a new phosphovanadate mineral from Nevada [abs] Geol Soc America Bull., v. 71, no. 12, pt. 2, p. 1883, Dec 1960

HAUSER, Robert Emanuel

1-60 (and NELSON, Vincent Edward) Auxiliary faulting associated with the Pine Mountain thrust fault [abs] Geol Soc. America Bull., v. 71, no. 12, pt. 2, p 2016, Dec. 1960.

HAVARD, J. F.

1-60. Gypsum, in Am. Inst. Mining, Metall., and Petroleum Engineers, Industrial minerals and rocks, p 471-486 incl. diagram and tables, 1960.

HAVENS, Raymond G. See STEVENS, Rollin Elbert 1-60, THEOBALD, Paul Kellogg, Jr 1-60

HAWES, Lorin

1-60. A method for the direct determination of lattice parameters Am. Mineralogist, v 45, nos. 11-12, p. 1285-1288, Nov.-Dec. 1960.

2-60 The development of an accurate low angle X-ray powder diffraction camera Am Mineralogist, v. 45, nos. 11-12, p 1288-1296 incl. diagrams and tables, Nov -Dec 1960

HAWKES, Herbert Edwin, Jr. See also CANTWELL, Thomas 2-60

1-60. (and SALMON, Merlyn L.) Trace elements in organic soils as a guide to copper ore Internat. Geol. Cong., 21st, Copenhagen, 1960, Rept., pt 2, p. 38-43 incl. geochem. anomaly maps, 1960

2-60. (and others) Geochemical reconnaissance in Eastern Canada, in Internat. Geol. Cong., Mexico, Symposium de exploración geoquímica, Tomo 3 México, D. G., p 607-621 incl. index and sketch maps and tables, 1960.

HAWKINS, Daniel Ballou See also CANNEY, F. C 1-60

1-60. (and ROY, Rustum) Distribution of trace elements between clays and zeolites formed by artificial weathering of synthetic basalts [abs.] Geol. Soc America Bull., v 71, no. 12, pt. 2, p. 1884, Dec. 1960.

HAWKINS, Gerald Stanley

1-60. Tektites and the Earth Nature (London), v. 185, no. 4709, p. 300-301, Jan. 30, 1960.

2-60. (and WOLFSON, Sumner H.) Origin of tektites Nature (London), v. 186, no. 4730, p 1027-1028, illus., June 25, 1960.

HAWKINS, Richard H. See BLACK, Peter E 1-60

HAWKINS, W. H. See KAY, Marshall 3-60

HAWKS, Graham Parker

1-60. Increase A. Lapham [1811-1875], Wisconsin's first scientist [abs]: Dissert. Abs., v. 21, no 6, p 1542, Dec 1960.



## HAWLEY, A S

- 1-60. Tompkins Hill Gas Field [California], in Northwestern California--  
A traverse of the Klamath uplift, northern Coast Ranges and Eel River  
Basin Geol Soc Sacramento, Ann. Field Trip, June 1960, [Guidebook]  
p 34, 1960.

## HAWLEY, Charles Caldwell See also SHARP, W N 1-60

- 1-60. (and SHARP, William N., and GRIFFITTS, Wallace Rush) Pre-  
mineralization faulting in the Lake George area, Park County, Colorado  
Art 34 in U S. Geol Survey Prof Paper 400-B, p B71-B73 incl geol.  
map, 1960  
2-60 Origin of asphaltite-rich ore bodies at Temple Mountain, Emery  
County, Utah [abs.] Geol Soc. America Bull , v. 71, no 12, pt 2, p. 1884,  
Dec 1960, Econ Geology, v. 55, no 6, p. 1339, Sept -Oct 1960

## HAWLEY, David See NEW YORK STATE GEOL ASSOC 1-60

## HAWORTH, A. John

- 1-60. Unity of purpose in the earth sciences [abs ] Geol. Soc America  
Bull , v 71, no 12, pt 2, p 2097, Dec 1960.

## HAWORTH, R See CUMMINGS, Joseph Benton 1-60

## HAY, Richard LeRoy

- 1-60. Rate of clay formation and mineral alteration in a 4000-year-old  
volcanic ash soil on St Vincent, B.W I. Am Jour. Sci , v 258, no 5,  
p 354-368 incl geol sketch map, diagrams, and table, May 1960  
2-60. Diagenetic K feldspar in the John Day formation in north-central  
Oregon [abs ] Geol Soc America Bull , v 71, no 12, pt 2, p. 1884-  
1885, Dec 1960.

## HAY, William Winn

- 1-60. The Cretaceous-Tertiary boundary in the Tampico embayment, Mexico.  
Internat Geol Cong., 21st, Copenhagen, 1960, Rept , pt 5, p 70-77 incl.  
diagrams and chart, 1960  
2-60. A study of the Velasco formation of northeastern Mexico [abs ] Dis-  
sert Abs , v. 20, no 11, p 4369, May 1960

## HAYAMI, Itaru

- 1-60. Jurassic palaeogeography and crustal movements in North America  
(exclusive of Mexico and Gulf regions) Jour Geography, Tokyo, v 69,  
no 2, p 1-18, illus , in Japanese with English abs., 1960

## HAYDEN, Richard John

- 1-60. (and WEHRENBURG, John Patteson) A<sup>40</sup>-K<sup>40</sup> dating of igneous and  
metamorphic rocks in western Montana Jour Geology, v 68, no 1, p. 94-  
97 incl table, Jan 1960

## HAYE, Edward Fabra See WHITWORTH, Virgil Lee 1-60

## HAYES, Carlyle R See ZEIGLER, John M. 1-60

## HAYES, John Robert See CABELL, Thomas R 1-60

## HAYES, Larry G

- 1-60. The Bowers-Campbell mine [Virginia]--Tri-State's boot-shaped zinc  
deposit Mining Eng , v 12, no. 9, p 997-1000 incl diagrams and illus ,  
Sept. 1960

## HAYNES, George L Jr. See GORDON, Ellis Davis 1-60

## HAYNES, Vance, Jr

- 1-60 The rare earths, Chap 6 in Mineral resources of Colorado, 1st se-  
quel Denver, Colorado Mineral Resources Board, p 367-385 incl. index  
map, diagrams, and tables, 1960

HAYNES

- 2-60. (and AGOGINO, George A.) Geological significance of a new radio-carbon date from the Lindenmeier Site [Colorado] Denver Mus. Nat. History Proc , no. 9, 23 p. incl sections, correlation chart, and illus., Aug. 15, 1960.

HEACOCK, John G , Jr. See PICKELL, James J. 1-60

HEADLEE, Alvah John Washington

- 1-60. Asphalt from well, Dickenson County, Virginia Producers Monthly, v 24, no. 6, p 28-30 incl. tables and illus., Apr 1960

HEALD, Milton Tidd

- 1-60. (and ANDEREGG, Ralph Charles) Differential cementation in the Tuscarora sandstone [Virginia-West Virginia] Jour Sed Petrology, v 30, no 4, p 568-577 incl. diagrams and illus , Dec. 1960  
2-60. Significance of clay in formation of stylolites [abs.] West Virginia Acad. Sci. Proc. 1959, v. 31, p. 53, Dec. 1960.

HEALD, Weldon F.

- 1-60 The geological drama, [Chap ] 2 in High Sierra [California]--Mountain wonderland, by J. Wampler and W. F. Heald Berkeley, Calif , privately printed, p. 8-16 incl. illus., 1960.

HEALEY, Don L See DIMENT, William Horace 1-60

HEALY, John H

- 1-60. (and PRESS, Frank) Two-dimensional seismic models with continuously variable velocity depth and density functions Geophysics, v. 25, no. 5, p 987-997 incl. diagrams and illus , Oct. 1960

HEANY, Frank. See LANDES, Kenneth Knight 2-60

HEARD, Hugh C See also CHRISTIE, John McDougall 1-60, GOLDSMITH, J. R. 4-60, GRIGGS, David Tressel 5-60, 6-60, TURNER, Francis John 1-60

- 1-60. Transition from brittle fracture to ductile flow in Solenhofen limestone as a function of temperature, confining pressure, and interstitial fluid pressure, Chap 7 in Griggs, D T , ed., Rock deformation--A symposium Geol Soc. America Mem 79, p. 193-226, illus , 1960

HEASLIP, William Graham

- 1-60 Equiangular spiral and the classification of the alticostate venericards [abs ] Geol Soc. America Bull , v. 71, no 12, pt. 2, p. 1885-1886, Dec. 1960.

HEATH, James Procter

- 1-60. Salt- and fresh water relationships in two terminal stream bars [California] Am Jour. Sci , v. 258, no. 8, p 605-607 incl. table, Oct. 1960.  
2-60. Repeated avalanches at Chaos Jumbles, Lassen Volcanic National Park [California] Am Jour Sci , v. 258, no. 10, p 744-751 incl. sketch map, diagram, table, and illus , Dec. 1960.

HECHT, Max Knobler

- 1-60. (and ESTES, Richard) Fossil amphibians from Quarry nine [Wyoming] Postilla, no. 46, 19 p incl. illus. and diagrams, June 30, 1960.  
2-60 A new frog from an Eocene oil-well core in Nevada Am. Mus. Novitates, no 2006, 14 p incl. illus , June 15, 1960.

HECK, Edward Timmel

- 1-60 Hydraulic fracturing in light of geologic conditions [abs ] Am Petroleum Inst. Proc 1960, v 40, sec. 4, p 19, 1960  
2-60. Hydraulic fracturing in light of geologic conditions Producers Monthly, v 24, no. 11, p 12-13, 16-19 incl. illus , Sept 1960

HEDGE, Carl E See DAMON, Paul Edward 1-60

HEDLEY, R H.

- 1-60 New observations on Pelosphaera cornuta Cushman Found. Foram Research Contr , v. 11, pt. 2, p 54-56, illus., Apr. 1960

HEDLUND, R W. See WILSON, Leonard Richard 3-60

HEEZEN, Bruce Charles See also BROECKER, Wallace S 1-60, 2-60; HUNKINS, Kenneth Leland 1-60, NESTEROFF, Wladimir D 1-60

- 1-60. The relationship between paleotemperatures and calcium carbonate content in a deep-sea core [Caribbean]--A discussion Jour Geology, v. 68, no. 3, p 345-346 incl profiles and index map, May 1960 (Discussion of paper by Ralph Yalkovsky, v. 65, no 5, p. 480-496, and of discussion by J. D H Wiseman and C Emiliani, and author's reply, v. 67, no 5, p. 572-577, 1959 )
- 2-60. Geologic mapping of submerged continental margins [abs ] Am Assoc Petroleum Geologists Bull , v 44, no. 7, p. 1250, July 1960
- 3-60 (and COUGHLIN, Roberta, and BECKMAN, Walter C ) Equatorial Atlantic mid-ocean canyon [abs.] Geol Soc America Bull , v. 71, no 12, pt. 2, p 1886, Dec 1960
- 4-60. Deep-sea geology [abs.] Mining Eng , v 12, no. 3, p 204, Mar. 1960
- 5-60. Some problems of Caribbean submarine geology Caribbean Geol Conf., 2d, Mayagüez, Puerto Rico, Jan 4-9, 1959, Trans , p 12-16 incl structure sections, profiles, and diagrams, 1960
- 6-60. (and NESTEROFF, Wladimir D , and SABATIER, Germain) Répartition des minéraux argileux dans les sédiments profonds de l'Atlantique nord et équatorial Acad Sci Comptes Rendus (Paris), tome 251, no 3, p. 410-412 incl sketch map and diagrams, July 18, 1960
- 7-60. The rift in the ocean floor Sci. Am., v. 203, no 4, p. 98-110 incl. sketch maps, diagrams, and illus., Oct 1960.

HEIDELBERGER, Michael See McMASTER, Philip Duryee 1-60

HEILIGMAN, Harold A.

- 1-60 (and MKAMI, Harry M.) Chromite, in Am. Inst Mining, Metall , and Petroleum Engineers, Industrial minerals and rocks, p 243-258 incl diagrams and tables, 1960

HEIM, George E , Jr

- 1-60 (and MARTIN, James Anthony, and HOWE, Wallace Brady) Preliminary report on the groundwater resources of Holt County, Missouri Missouri Div. Geol Survey and Water Resources Groundwater Rept. 17, [24] p , illus incl. index map, 1960.
- 2-60. (and MARTIN, James Anthony, and HOWE, Wallace Brady) Preliminary report on the groundwater resources of Atchison County, Missouri Missouri Div. Geol Survey and Water Resources Groundwater Rept. 18, [23] p , illus., 1960.

HEIMSCH, Charles W See GRAHAM, Alan 1-60

HEINDL, Leopold Alexander

- 1-60 (and LANCE, John Franklin) Topographic, physiographic, and structural subdivisions of Arizona Arizona Geol Soc Digest, v 3, p. 12-18 incl. index maps, Mar 1960.
- 2-60. Cenozoic geology of the Papago Indian Reservation, Pima, Maricopa, and Pinal Counties, Arizona (a preliminary summary) Arizona Geol. Soc. Digest, v 3, p. 31-34, Mar 1960.
- 3-60. Geology of the lower Bonita Creek area (a preliminary report) Arizona Geol Soc Digest, v 3, p 35-39 incl. geol. sketch map, Mar. 1960

HEINES, John T

- 1-60 A brief look at commercial core analysis Alberta Soc Petroleum Geologists Jour , v 8, no 7, p 207-212, July 1960

HEINICKE, Joachim H

- 1-60. Thorium, Chap. 7 in Mineral resources of Colorado, 1st sequel Denver, Colorado Mineral Resources Board, p 387-397, table, 1960

## HEINRICH

HEINRICH, Eberhardt William See also TEMPLE, A. K. 1-60

- 1-60. Stibiotantalite from the Brown Derby No. 1 pegmatite, Colorado Am. Mineralogist, v 45, nos 5-6, p. 728-731 incl tables, May-June 1960.
- 2-60. (and CONRAD, M A.) Detrital euxenite and associated minerals, Sand Basin, Granite County, Montana Am. Mineralogist, v. 45, nos. 3-4, p 459-464 incl tables and illus., Mar -Apr 1960.
- 3-60 (and GROSS, Eugene Bischoff) Fluocerite and associated minerals from the Black Cloud pegmatite, Teller County, Colorado Am. Mineralogist, v. 45, nos. 3-4, p 455-459 incl. tables and illus , Mar.-Apr. 1960.
- 4-60. Sursassite from New Brunswick, Canada [abs.] Geol. Soc. America Bull , v. 71, no. 12, pt 2, p 1886, Dec. 1960
- 5-60. (and MASTERMAN, P. C.) Nonconglomeratic ores of the Pronto uranium deposit [Ontario] [abs.] Geol Soc America Bull , v 71, no. 12, pt. 2, p. 1887, Dec. 1960, with title, Non-conglomeratic ores of the Pronto uranium deposit, Blind River area, Ontario, Canada, Econ. Geology, v 55, no. 6, p. 1332-1333, Sept.-Oct. 1960.
- 6-60. Some rare-earth mineral deposits in Mohave County, Arizona Arizona Bur. Mines Bull 167, Mineral Technology Ser., no. 51, 22 p., illus., Mar. 1960.
- 7-60. (and RABBITT, John Charles) Pre-Beltian geology of the Cherry Creek and Ruby Mountains areas, southwestern Montana--Pt. 1, Geology of the Cherry Creek area Montana Bur. Mines and Geology Mem. 38, p. 1-14, illus. incl. geol. map, Aug. 1960.
- 8-60. Pre-Beltian geology of the Cherry Creek and Ruby Mountains areas, southwestern Montana--Pt. 2, Geology of the Ruby Mountains and nearby areas in southwestern Montana Montana Bur. Mines and Geology Mem. 38, p. 15-40, illus. incl. geol. maps, Aug. 1960.

HELBURN, Nicholas

- 1-60. Southwestern Montana earthquake and landslide. Geog. Rev., v. 50, no. 1, p. 109-111, Jan. 1960.

HELD, S

- 1-60. Spectrochemical determination of La and Sc in standard granite G1 by the method of addition Spectrochim. Acta, v. 16, no. 5, p. 588-594, illus , June 1960.

HELTON, Walter L.

- 1-60. (compiler) Oil and gas map, Pulaski County, Kentucky Lexington, Kentucky Geol. Survey, ser. 10, scale 1 48,000 (1 in. to 4,000 ft.), 1960.

HELZ, Armin Werner. See ANNELL, Charles Sylvester 1-60

HEM, John David

- 1-60. Chemical equilibrium diagrams for ground-water systems. Internat. Assoc. Sci. Hydrology (Gentbrugge, Belgium) Bull 19, p 45-53, illus., Sept. 1960.

HEMPHILL, L. See PARKER, Frank L. 1-60, 2-60

HEMPHILL, William Ross. See WITKIND, Irving Jerome 2-60

HENBEST, Lloyd George

- 1-60. Fossil spoor and their environmental significance in Morrow and Atoka series, Pennsylvanian, Washington County, Arkansas Art. 177 in U. S. Geol. Survey Prof. Paper 400-B, p. B383-B385 incl illus., 1960.
- 2-60. Paleontologic significance of shell composition and diagenesis of certain late Paleozoic sedentary Foraminifera Art. 178 in U. S. Geol. Survey Prof Paper 400-B, p B386-B387, 1960.

HENDEL, Charles William

- 1-60. Wasatch gas in Uinta Basin and its effect on future oil exploration [abs.] Am Assoc Petroleum Geologists Bull , v. 44, no. 6, p 957-958, June 1960
- 2-60. Wasatch gas in the Uinta Basin and its effect on future oil exploration [abs.] Am. Assoc. Petroleum Geologists Rocky Mtn. Sec. Geol. Record 1960, p 164 [1960]

HENDERSON, Bonnie C

1-60. (compiler) Geology-geophysics students in the United States and Canada in 1960 *GeoTimes*, v. 4, no. 8, p. 16-18 incl diagrams and tables, May-June 1960.

HENDERSON, Eric P See CANADA GEOL. SURVEY 4-60, 17-60

HENDERSON, Gerald Gordon Lewis

1-60. A review of the geology of the Rocky Mountains along the Trans Canada highway [abs.] *Canadian Oil and Gas Industries*, v 13, no. 4, p 108, Apr. 1960

HENDERSON, Homer

1-60. (and EARL, Jack Franklin) New drilling technique recovers 100 per cent continuous core *World Oil*, v 150, no 1, p 111-118 incl. diagrams, table, and illus , Jan. 1960

HENDERSON, James Fenwick

1-60. (compiler) Current research in the geological sciences in Canada, June, 1958-May, 1959. *Canada Natl. Advisory Comm Research Geol Sci.*, 9th Ann. Rept., p. 99-216, Jan 1960.

HENDERSON, John Richard. See BROMERY, Randolph Wilson 4-60, 6-60, 8-60, 9-60, 11-60, 12-60, 14-60, 19-60

HENDERSON, Roland George

1-60. A comprehensive system of automatic computation in magnetic and gravity interpretation *Geophysics*, v. 25, no. 3, p 569-585 incl aeromagnetic maps, diagrams, and tables, June 1960.

2-60. Polar charts for evaluating magnetic anomalies of three-dimensional bodies Paper 52 in U S Geol Survey Prof Paper 400-B, p B112-B114 incl diagrams, 1960

HENDRICKS, Thomas Andrews See MISER, Hugh Dinsmore 1-60

HENDRICKSON, Gerth Edison. See KRIEGER, Robert Albert 1-60, 2-60

HENDRIX, Thomas Eugene

1-60. Structural history of the East Gogebic Iron Range [Michigan-Wisconsin] [abs.] *Dissert Abs* , v 21, no. 3, p 594, Sept. 1960

HENLE, Walter Kurt See ADAMS, John Allan Stewart 4-60

HENNEMAN, Arlen Boyd

1-60. Helium and the petroleum industry [abs ] *Canadian Oil and Gas Industries*, v 13, no 4, p 106, Apr. 1960.

HENOCH, W E. S.

1-60 String-bogs in the Arctic 400 miles north of the tree-line *Geog. Jour* , v 126, pt 3, p. 335-339 incl. sketch map and diagram, illus., London, Sept 1960

HENRIKSEN, Niels

1-60 Structural analysis of a fault in south-west Greenland *Medd. om Grønland*, bind 162, nr. 9, p. 15-41, illus , 1960, reprinted as *Grønlands Geol Undersøgelse Bull* 26, 1960, Copenhagen Univ. Mus. Minéralogie et Géologie Commun. Géol 109, 1960.

HENRY, Gary E.

1-60. (and DROSTE, John Brown) Petrology of the Bethel formation (lower Chester) in Indiana [abs.] *Indiana Acad Sci. Proc* 1959, v 69, p 186-187, 1960.

HENRY, Harold Robert

1-60 Salt intrusion--Interfaces in limited aquifers [abs ] *Jour Geophys. Research*, v 65, no. 8, p 2497, Aug. 1960

## HENRY

- 2-60. Salt intrusion into coastal aquifers Internat. Assoc. Sci. Hydrology (Gentbrugge, Belgium) Pub 52, p. 478-487 incl. diagrams and French abs., 1960.

## HENSEL, D R.

- 1-60. (and WHITE, Joe Lloyd) Time factor and the genesis of soils on early Wisconsin till [Indiana], in Swineford, Ada, ed., Clays and clay minerals Natl. Conf. Clays and Clay Minerals, 7th, Washington, D. C., Oct. 1958, Proc , p. 200-215 incl. sketch maps, diagrams, and tables, 1960 (Issued as Internat. Earth Science Ser Mon. 5 of Pergamon Press, New York.)

## HEPPE, W. Charles

- 1-60. A brief summary of the stratigraphy of the Almond and Lewis formations of the Washakie Basin, Sweetwater County, Wyoming, in Overthrust belt of southwestern Wyoming and adjacent areas Wyoming Geol. Assoc., 15th Ann. Field Conf , 1960, Guidebook, p. 147-151 incl isopach maps and fence diagram, 1960.

## HERNDON, H. W.

- 1-60. Corsica, Pumphrey and Ashmore conglomerate fields, Stonewall County, Texas, in Abilene Geol. Soc , Geological contributions 1960, p. 19-29, illus , 1960.

## HERON, Stephen Duncan, Jr.

- 1-60. Clay minerals of the outcropping basal Cretaceous beds between the Cape Fear River, North Carolina, and Lynches River, South Carolina, in Swineford, Ada, ed , Clays and clay minerals Natl. Conf. Clays and Clay Minerals, 7th, Washington, D. C., Oct 1958, Proc , p. 148-161 incl geol. sketch map and diagram, 1960. (Issued as Internat Earth Science Ser. Mon. 5 of Pergamon Press, New York.)  
2-60. Notes on the calcium carbonate content of the Santee limestone [South Carolina] South Carolina State Devel Board Div. Geology Geol. Notes, v. 4, no 4, p 31-33, illus., July-Aug. 1960

## HERREID, Gordon

- 1-60. Geology of the Red Devil quicksilver mine, Alaska [abs.] Geol. Soc. America Bull., v 71, no. 12, pt 2, p. 2086, Dec. 1960.

## HERRERA, Nicolás M See also SEIGLIE, G. A 1-60

- 1-60. Cuadro para la determinación megascópica de las rocas ígneas Soc Cubana Historia Nat Mem., v. 25, no. 1, p 11-19, illus., Dec. 10, 1960  
2-60. Comentarios sobre las formaciones de la parte sur-central de Oriente Soc. Cubana Ingenieros Rev , v. 60, nos. 7-9, p 195-201 incl. geol. sketch map, July-Sept 1960

## HERRICK, Stephen Marion

- 1-60. Late Eocene Foraminifera from South Carolina and Georgia [abs.] Geol Soc. America Bull , v 71, no. 12, pt. 2, p. 2016-2017, Dec. 1960  
2-60. Some small Foraminifera from Shell Bluff, Georgia Bull. Am. Paleontology, v. 41, no. 187, p 117-130, illus., May 6, 1960.

## HERRIN, Eugene Thornton, Jr.

- 1-60. (and MINTON, Paul D.) The velocity of Lg in the southwestern United States and Mexico Seismol. Soc. America Bull., v. 50, no 1, p. 35-44 incl. sketch map, diagram, and tables, Jan 1960  
2-60. (and RICHMOND, Jean) On the propagation of the Lg phase Seismol. Soc. America Bull., v. 50, no. 2, p 197-210 incl. diagrams and tables, Apr. 1960.

## HERSHEY, Howard Garland

- 1-60 (and others) Highway construction materials from the consolidated rocks of southwestern Iowa Iowa State Highway Comm , Iowa Highway Research Board Bull. 15, 151 p , Jan 1960

## HERSHEY, Lloyd Ashton. See VOEGELI, Paul Thomas, Sr. 1-60

HERSHEY, Robert E

- 1-60. The high-silica resources of Tennessee Tennessee Div Geology Rept. Inv 10, 62 p, illus, 1960.
- 2-60. Phosphate raw materials of Tennessee [abs] Tennessee Acad Sci. Jour., v 35, no 2, p 106-107, Apr 1960.

HERTLEIN, Leo George See also EMERSON, W K 3-60

- 1-60. The subfamily Drupinae (Gastropoda) in the eastern Pacific Veliger, v. 3, no. 1, p 7-8, July 1, 1960.
- 2-60. (and GRANT, Ulysses Simpson, 4th) The geology and paleontology of the marine Pliocene of San Diego, California--Pt 2a, Paleontology (Coelenterata, Bryozoa, Brachiopoda, Echinodermata) San Diego Soc Nat. History Mem, v 2, p 73-133, illus., July 7, 1960.

HERZOG, Leonard Frederick, 2d. See also CASSIDY, W. A. 1-60

- 1-60. Age determination by x-ray fluorescence rubidium-strontium ratio measurement in lepidolite Science, v. 132, no. 3422, p. 293-295 incl table, July 29, 1960
- 2-60. (and PINSON, William Hamet, Jr., and HURLEY, Patrick Mason) Rb-Sr analyses and age determinations of certain lepidolites, including an international interlaboratory comparison suite Am. Jour Sci., v. 258, no 3, p 191-208 incl diagram and tables, Mar. 1960

HESS, David Clarence. See also EBERHARDT, Peter, 1-60, MARSHALL, R R

- 1-60 (and MARSHALL, Royal R.) Lead ages of meteorites Argonne National Lab., Lemont, Ill., Rept ANL-6169, p. 41-51, illus, June 1960.

HESS, Harold DeWitt

- 1-60 Fersmite--A rare calcium-columbate mineral from Montana U.S. Bur Mines Rept Inv. 5693, 9 p incl tables and illus., 1960

HESS, Harry Hammond See also TALWANI, Manik 2-60

- 1-60. The AMSOC hole to the earth's mantle Am Scientist, v 48, no 2, p 254-263 incl diagrams, June 1960
- 2-60. Caribbean research project--Progress report Geol Soc. America Bull, v 71, no 3, p 235-240 incl. index maps, Mar. 1960
- 3-60 Scientific objectives of Mohole, and predicted section [abs] Am. Assoc Petroleum Geologists Bull., v 44, no. 7, p. 1250, July 1960.
- 4-60. Scientific objectives of the Mohole and a predicted section [abs] Geol. Soc America Bull, v 71, no 12, pt 2, p 2097, Dec 1960
- 5-60. Outstanding problems of Caribbean geology Caribbean Geol Conf, 2d, Mayagüez, Puerto Rico, Jan. 4-9, 1959, Trans, p 11 incl index sketch map, with discussion, 1960
- 6-60 Stillwater igneous complex, Montana--a quantitative mineralogical study Geol Soc. America Mem 80, 230 p, illus, 1960

HESS, Wilmot Norton

- 1-60 Project Plowshare--The peaceful uses of nuclear explosions [abs] Mining Eng, v. 12, no 3, p 204, Mar 1960.

HESSLER, Robert Raymond

- 1-60 The Lower Mississippian proetid trilobites of North America Chicago, Illinois, Univ Chicago, 182 p, illus, Mar 1960

HESSLER, Victor Peter. See WESCOTT, Eugene M. 2-60

HESTER, Jim J.

- 1-60. Late Pleistocene extinction and radiocarbon dating Am Antiquity, v. 26, no 1, p 58-77 incl diagram and tables, June 1960

HESTER, Robert J

- 1-60. (and HOLLAND, Richard Rainey) Structure of the Puckett Field, Pecos County, Texas, in Natural gas in the Southwest Southwestern Federation Geol Socs Trans, v 1, p 29-37 incl sketch maps and cross section, 1960. (Revised from West Texas Geol Soc, Val Verde Field Trip Guidebook, 1959)

# HEUSSER

HEUSSER, Calvin John

- 1-60. Late-Pleistocene environments of North Pacific North America--an elaboration of late-glacial and postglacial climatic, physiographic, and biotic changes. *Am. Geog. Soc. Spec. Pub.* 35, 308 p. incl. maps, sections, diagrams, tables, and illus., 1960.

HEWETT, Donnel Foster

- 1-60. (and FLEISCHER, Michael) Deposits of the manganese oxides. *Econ. Geology*, v. 55, no. 1, p. 1-55 incl. mineral index map, geol. cross section, and tables, Jan.-Feb. 1960.

HEWITT, Donald F.

- 1-60. The limestone industries of Ontario. Ontario Dept. Mines Indus. Mineral Circ. 5, 177 p., illus. incl. geol. map, 1960

HEYBURN, Malcolm

- 1-60. Geologic mapping with the aid of magnetics, Tahawus area, N. Y. [abs.] *Mining Eng.*, v. 12, no. 12, p. 1249, Dec. 1960.

HEYDEGGER, H. Roland. See ANDERS, Edward 2-60

HEYDING, R. D.

- 1-60 (and others) Acid activation of montmorillonite. *Canadian Jour. Chemistry*, v. 38, no. 6, p. 1003-1016 incl. diagrams and tables, June 1960.
- 2-60. (and DESPAULT, G. J. G.) The copper/arsenic system and the copper arsenide minerals. *Canadian Jour. Chemistry*, v. 38, no. 12, p. 2477-2481 incl. table, Dec. 1960.

HEYL, Allen Van. See also PEARRE, N. C. 1-60

- 1-60 (and BOZION, Constantine N.) Varieties of supergene zinc deposits in the United States. *Art. 2 in U. S. Geol. Survey Prof. Paper* 400-B, p. B2-B5 incl. sections, 1960

HEYLMUN, Edgar Baldwin, Jr

- 1-60. Kanab [Arizona-Utah]--The oil signs are there. *Oil and Gas Jour.*, v. 58, no. 24, p. 168-171 incl. sketch map and section, June 13, 1960.
- 2-60. The Pleistocene of western Utah, in *Geology of east central Nevada*. Intermountain Assoc. Petroleum Geologists, 11th Ann. Field Conf., 1960 Guidebook, p. 142-147 incl. sketch map and section, 1960.

HEYWOOD, William Walter. See CANADA GEOL SURVEY 25-60, 42-60

HIBBARD, Claude William

- 1-60. (and DALQUEST, Walker Woelber) A new antilocaprid from the Pleistocene of Knox County, Texas. *Jour. Mammalogy*, v. 41, no. 1, p. 20-23 incl. illus., Feb. 1960.
- 2-60. (and TAYLOR, Dwight Willard) Two late Pleistocene faunas from southwestern Kansas. *Michigan Univ. Mus. Paleontology Contr.*, v. 16, no. 1, p. 1-223, illus., July 1, 1960.

HIBBEN, Frank Cummings

- 1-60. Radioactive time, [Chap.] 3 of *Digging up America*, by author. New York, N. Y., Hill and Wang, p. 24-37, 1960.
- 2-60. *Digging up America*. New York, N. Y., Hill and Wang, 239 p., illus., 1960

HICKOX, Charles Frederick, Jr.

- 1-60. Late Pleistocene ice cap centered on the Nova Scotian Peninsula [abs.]. *Geol. Soc. America Bull.*, v. 71, no. 12, pt. 2, p. 1887, Dec. 1960

HIEDRA LOPEZ, Juan Carlos. See JUMIKIS, Alfreds R. 1-60

HIESEY, William M. See CLAUSEN, Jens 1-60



HIESTAND, Thomas Cleon

- 1-60. A geologist discusses depletion [abs.] Tulsa Geol. Soc. Digest, v 28, p 81-82, 1960.

HIGASHI, Akira See CORTE, Arturo E. 1-60

HIGBY, L. Warren. See SMITH, John Ward 1-60

HIGDON, William Terril. See HIGHT, Robert, Jr 1-60

HIGGINS, Charles Graham

- 1-60. Calcification of some California Cretaceous wood [abs.] Geol. Soc. America Bull., v 71, no. 12, pt 2, p. 1887-1888, Dec. 1960  
2-60. Ohlson Ranch formation, Pliocene, northwestern Sonoma County, California California Univ. Pubs. Geol. Sci., v 36, no 3, p. 199-231, illus. incl. geol. map, 1960.  
3-60. Minerals for the physical geology laboratory Jour. Geol. Education, v 8, no 2, p 41-43, fall 1960

HIGGINS, Gary Hoyt. See KENNEDY, George Clayton 2-60

HIGGINS, George Esmond. See SUTER, Hans H.

HIGGS, Donald Val See also BORG, I. Y 1-60, HANDIN, J. W. 2-60

- 1-60. (and FRIEDMAN, Melvin, and GEBHART, John E.) Petrofabric analysis by means of the X-ray diffractometer, Chap 10 in Griggs, D. T., ed., Rock deformation--A symposium Geol. Soc. America Mem. 79, p 275-292, illus., 1960.

HIGHT, Robert, Jr. See also SCHMIDT, P. W. 1-60

- 1-60. (and HIGDON, William Terril, and SCHMIDT, Paul Woodward) Small angle X-ray scattering study of sodium montmorillonite clay suspensions Jour. Chem. Physics, v 33, no. 6, p 1656-1661 incl. diagram and tables, Dec 1960

HILDEBRAND, Fred Adelbert

- 1-60 Occurrences of bauxitic clay in the karst area of north-central Puerto Rico Art. 169 in U. S. Geol. Survey Prof. Paper 400-B, p B368-B371 incl. sketch maps and table, 1960  
2-60 Zones of hydrothermally altered rocks in eastern Puerto Rico Caribbean Geol. Conf., 2d, Mayaguez, Puerto Rico, Jan 4-9, 1959, Trans. p 130-136 incl. sketch maps, diagram, and tables, with discussion, 1960.

HILL, F. L.

- 1-60 Cantua Creek area of Fresno County California Oil Fields--Summ. Operations Jan.-June 1960, v. 46, no. 1, p. 10-14, illus., 1960

HILL, Gilman Arthur

- 1-60. Trap barriers--Hydrodynamic, stratigraphic, wettability [abs.] Houston Geol. Soc. Bull., v. 2, no. 5, unpagged, Jan. 1960  
2-60. Trap barriers--Hydrodynamic, stratigraphic, wettability [abs.] Tulsa Geol. Soc. Digest, v. 28, p. 84, 1960

HILL, H. L.

- 1-60. (and STARCK, L. P.) The Giant nickel mine [British Columbia] Western Miner and Oil Rev., v. 33, no. 11, p. 39-42 incl. sketch map, section, and illus., Nov. 1960.

HILL, John D. See LANGENHEIM, Ralph Louis, Jr 5-60

HILL, Mason Lowell

- 1-60. Fault symbols, AGI Data Sheet 20 GeoTimes, v. 5, no 3, p. 23-24, Oct 1960.

HILL, P. A. See CHAMBERLAIN, J. A. 1-60

## HILL

HILL, Walter Edward, Jr. See also DELLWIG, L. F. 1-60, IVES, William, Jr 2-60, WAUGH, W N. 1-60

- 1-60. (and RUNNELS, Russell Tyson) Versene, new tool for study of carbonate rocks Am. Assoc Petroleum Geologists Bull., v 44, no. 5, p. 631-632, May 1960.

HILLER, Wilhelm

- 1-60. In memoriam Prof. Dr. Beno Gutenberg [1889-1960] Zeitschr. Geophysik (Wurzburg), Jahrg. 26, Heft 6, p. 298-300, incl. portrait, 1960

HILLS, Theo L.

- 1-60. (compiler) A select annotated bibliography of the humid tropics. Montreal, Quebec, Internat. Geog Union, Spec. Comm Humid Tropics, Geog Dept., McGill Univ., 238 p., June 1960.

HILPERT, Lowell S.

- 1-60. (and MOENCH, Robert H ) Uranium deposits of the southern part of the San Juan Basin, New Mexico Econ. Geology, v 55, no. 3, p. 429-464 incl. geol. sketch maps, sections, table, and illus , May 1960

HILPMAN, Paul Lorenz

- 1-60. (and GOEBEL, Edwin DeWayne) Two strikes put Geary into Kansas oil picture Oil and Gas Jour , v. 58, no. 8, p. 164-165 incl index map and sections, Feb. 22, 1960.

HILTROP, Carl L. See also DIEBOLD, F E. 1-60

- 1-60. (and LEMISH, John) A method for determining the relative abundance and composition of calcite and dolomite in carbonate rocks Iowa Acad. Sci. Proc. 1960, v. 67, p. 237-245 incl diagrams and table, Dec. 27, 1960  
2-60. (and LEMISH, John) Relationship of pore-size distribution and other rock properties to serviceability and of some carbonate aggregates Natl. Acad. Sci.--Natl. Research Council Highway Research Board Bull. 239, p 1-23, illus., 1960.

HILTY, Robert E

- 1-60. Supplementary glacial studies, 1957, in Goldthwait, R P., Study of ice cliff in Nunatarssuaq, Greenland U. S. Army, Corps of Engineers, Cold Regions Research and Eng Lab. Tech. Rept. 39, App., p. A1-A14 incl. diagrams and tables, Oct 1960.

HIMES, Susan Vaughn

- 1-60. Further investigation of organic matter in meteorite Murray [Kentucky] California, Univ., Berkeley, Lawrence Radiation Lab. Rept. UCRL-9208, p 12-26 incl diagrams and tables, June 29, 1960 (Report prepared for U. S Atomic Energy Commission.)

HINCKLEY, David N.

- 1-60. (and BATES, Thomas Fulcher) An X-ray fluorescence method for the quantitative determination of small amounts of montmorillonite in kaolin clays Am. Mineralogist, v. 45, nos 1-2, p. 239-241 incl diagram, Jan.-Feb 1960  
2-60. (and BATES, Thomas Fulcher) Evaluation of the amount and distribution of montmorillonite in some Georgia and South Carolina kaolins, in Swineford, Ada, ed , Clays and clay minerals, V. 8 Natl Conf Clays and Clay Minerals, 8th, Norman, Okla., Oct. 1959, Proc., p 18-21 incl. diagram and tables, 1960 (Issued as Internat Earth Science Ser Mon 9 of Pergamon Press, New York.)

HINDS, G W.

- 1-60. (and ANDRAU, William Evert) Geology of a portion of the northern Snake River Range, Bonneville County, Idaho, in Overthrust belt of southwestern Wyoming and adjacent areas Wyoming Geol. Assoc , 15th Ann. Field Conf., 1960, Guidebook, p 57-60 incl index map and table, also geol. map and sections, 1960

HINRICH, Edgar Neal. See GIBBONS, Anthony Benjamin 1-60, OLSON, Jerry Chipman 1-60

HINRICH, Frederick Woods

1-60 Airborne exploration methods [abs] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 2098, Dec. 1960

HINTZE, Lehi Ferdinand

1-60 Thrust-faulting limits in western Utah [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 2062, Dec. 1960

2-60 Ordovician stratigraphy in western Montana and adjacent states, in West Yellowstone--Earthquake area Billings Geol. Soc., 11th Ann. Field Conf., Sept. 1960, [Guidebook] p. 213-216 incl. geol. map, 1960

3-60 Ordovician of the Utah-Nevada Great Basin, in Geology of east central Nevada Intermountain Assoc. Petroleum Geologists, 11th Ann. Field Conf., 1960 Guidebook, p. 59-62 incl. sketch map, 1960.

4-60. Ordovician tectonics of western Wyoming and vicinity, in Overthrust belt of southwestern Wyoming and adjacent areas Wyoming Geol. Assoc., 15th Ann. Field Conf., 1960, Guidebook, p. 110-115 incl. isopach and geol. sketch maps, 1960

HINZ, Wilhelm

1-60. (and KUNTH, Peter-Olaf) Phase equilibrium data for the system  $MgO-MgF_2-SiO_2$  Am. Mineralogist, v. 45, nos. 11-12, p. 1198-1210 incl. diagrams, tables, and illus., Nov.-Dec. 1960.

HINZE, William J.

1-60. Application of the gravity method to iron ore exploration Econ. Geology, v. 55, no. 3, p. 465-484 incl. magnetic anomaly maps, sections, and diagrams, May 1960

HIRSHMAN, Julius. See EWING, John Isaac 1-60

HISS, William Louis

1-60. The origin of chert--An investigation of the literature Compass, v. 38, no. 1, p. 3-17 incl. diagrams, Nov. 1960.

2-60. (and HUNTER, Hugh Edwards) Magnetite-pyroxene textures in basic rocks from the Wichita Mountains: Oklahoma Geology Notes, v. 20, no. 10, p. 254-255, illus., Oct. 1960.

HITCHON, Brian

1-60. The significance of the geochemistry of natural gas in exploration [abs] Canadian Oil and Gas Industries, v. 13, no. 4, p. 106, Apr. 1960

HITE, Robert James

1-60. Stratigraphy of the saline facies of the Paradox member of the Hermosa formation of southeastern Utah and southwestern Colorado, in Geology of the Paradox Basin fold and fault belt Four Corners Geol. Soc., 3d Field Conf., 1960, [Guidebook] p. 86-89, table, 1960.

HLADIK, William B. See PLUMMER, Norman Vincen 1-60

HO, Tong-Yun See LEONARD, Arthur Byron 2-60, 3-60

HOADLEY, John William

1-60. Mica deposits of Canada Canada Geol. Survey Econ. Geology Ser., no. 19, 141 p., illus. incl. geol. maps, 1960.

HOARE, Richard David

1-60. (and BURGESS, Jack D.) Fauna from the Tensleep sandstone in Wyoming Jour. Paleontology, v. 34, no. 4, p. 711-716, illus., July 1960.

2-60. New Pennsylvanian Brachiopoda from southwest Missouri Jour. Paleontology, v. 34, no. 2, p. 217-232, illus., Mar. 1960, discussion with title, Authorship of name Mesolobus striatus, by J. M. Weller, v. 34, no. 4, p. 762, July 1960.

## HOARE

- 3-60. Pentremitidea filosa Whiteaves from the Silica formation in north-western Ohio Ohio Jour. Sci., v. 60, no 5, p. 265-267 incl. table and illus., Sept 1960.

HOBBIE, John E See BARNES, David Fitz 1-60

HOBBS, S. Warren. See KENNEDY, Vance Clifford 2-60, WALLACE, Robert Earl 1-60

HOBSON, George Donald

- 1-60. Seismic survey in Ontario Canadian Oil and Gas Industries, v. 13, no 7, p 47-51 incl. index map and correlation chart, July 1960.  
2-60. (and COLLETT, Leonard Stamer) Some observations with a hammer refraction seismograph Canadian Mining and Metall. Bull., v. 53, no. 581, p 674-681 incl. index and sketch maps, diagrams, and table, Sept. 1960, Canadian Inst. Mining and Metallurgy Trans., v. 63, p. 449-456, 1960  
3-60 A reconnaissance seismic refraction and reflection survey in south-western Ontario Canadian Mining Jour, v 81, no 4, p 83-87 incl. sketch map and correlation chart, Apr. 1960.

HOCHMAN, Jack

- 1-60. (and O'KEEFE, John Aloysius) Non-terrestrial origin of the tektites Geophysics, v 25, no 5, p. 1145-1146 incl. diagram, Oct 1960.

HODGSON, Gordon Wesley. See also BAKER, B L 1-60

- 1-60. Copper complexes of chlorophyll derivatives in the formation of petroleum phophrins [abs.]. Geol. Soc. America Bull., v. 71, no. 12, pt 2, p 1888, Dec 1960.

HODSON, Warren Gayler

- 1-60. (and WAHL, Kenneth D.) Geology and ground-water resources of Gove County, Kansas Kansas State Geol. Survey Bull. 145, 126 p., illus. incl. geol. map, June 1960

HOEKSTRA, Henry R.

- 1-60. (and FUCHS, Louis H.) The origin of thucholite Econ. Geology, v. 55, no. 8, p. 1716-1738 incl. diagrams, tables, and illus., Dec 1960.

HOERING, Thomas Carl. See also ABELSON, P. H. 1-60

- 1-60. (and PARKER, Patrick LeGrand) Abundance of chlorine isotopes in nature [abs.] Washington Acad. Sci Jour., v. 50, no. 7, p. 2, Nov. 1960  
2-60. Stable-isotope geochemistry Am Geophys. Union Trans., v. 41, no 2, p. 298, June 1960.

HOFF, Jerald H.

- 1-60. Geology of the Gann Valley quadrangle, South Dakota South Dakota Geol Survey [Geol. Map], scale 1:62,500 (about 1 in. to 1 mi.), with text, 1960  
2-60. Microfossil investigation of the Oacoma facies, Pierre formation [abs.] South Dakota Acad. Sci Proc. 1960, v. 39, p 172-173, Nov. 1, 1960.

HOFFER, Abraham

- 1-60. (and DACHILLE, Frank, and ROY, Rustum) Some crystal chemical and kinetic data on solid phase transformations at pressures up to 100,000 atm. [abs.] Am Ceramic Soc. Bull, v. 39, no 4, p. 181, Apr 1960.  
2-60 Structural petrography of a specimen of metaquartzite [abs.] Geol. Soc. America Bull, v 71, no. 12, pt. 2, p 1888-1889, Dec. 1960.

HOFFMAN, John Harold

- 1-60. (and NIER, Alfred Otto Carl) Cosmic-ray-produced helium in the Keen Mountain and Casas Grandes meteorites [New Mexico] Jour. Geophys Research, v 65, no. 3, p 1063-1068 incl diagrams and tables, Mar. 1960

- HOFFMEISTER, William Simon. See also ZEIGLER, J. M 2-60  
 1-60. Palynology has important role in oil exploration World Oil, v. 150, no. 5, p 101-104 incl diagrams and illus, Apr. 1960  
 2-60. Sodium hypochlorite, a new oxidizing agent for the preparation of microfossils Oklahoma Geology Notes, v 20, no 2, p 34-35, Feb. 1960
- HOFFSTETTER, Robert. See also INTERNAT GEOL. CONG. Strat. Comm 1-60  
 1-60. (and DIXON, Cyril George) British Honduras, in Internat. Geol. Cong. Strat. Comm., Lexique stratigraphique international--V. 5, Amérique Latine--Fasc. 2a, Amérique Centrale Paris, Centre Natl. Recherche Sci., p. 11-42, geol map, 1960.  
 2-60. (and DENGÖ, Gabriel Obregon) Guatemala, in Internat. Geol. Cong. Strat. Comm., Lexique stratigraphique international--V. 5, Amérique Latine--Fasc. 2a, Amérique Centrale Paris, Centre Natl. Recherche Sci., p. 43-97, geol. map, 1960.  
 3-60. (and DENGÖ, Gabriel Obregon) Honduras, in Internat. Geol. Cong. Strat. Comm., Lexique stratigraphique international--V 5, Amérique Latine--Fasc. 2a, Amérique Centrale Paris, Centre Natl. Recherche Sci., p. 129-170, geol. map, 1960  
 4-60 (and ZOPPIS BRACCI, Luigi, and DENGÖ, Gabriel Obregon) Nicaragua, in Internat. Geol. Cong. Strat. Comm., Lexique stratigraphique international--V. 5, Amérique Latine--Fasc. 2a, Amérique Centrale Paris, Centre Natl. Recherche Sci., p. 171-224, geol map, 1960  
 5-60. (and DENGÖ, Gabriel Obregon, and WEYL, Richard) Costa Rica, in Internat. Geol. Cong. Strat. Comm., Lexique stratigraphique international--V. 5, Amérique Latine--Fasc. 2a, Amérique Centrale Paris, Centre Natl. Recherche Sci., p 225-306, geol. map, 1960
- HOFKER, Jan  
 1-60. The taxonomic positions of the genera Boldia van Bellen, 1946, and Anomalina Cushman, 1927 Cushman Found. Foram. Research Contr, v. 11, pt. 2, p 47-52, illus, Apr. 1960.  
 2-60. The genus Truncorotalia Cushman and Bermudez, 1949 Micropaleontology, v 6, no. 1, p. 111-115, illus., Jan 1960.  
 3-60 The taxonomic status of Praeglobotruncana, Planomalina, Globigerinella, and Biglobigerinella Micropaleontology, v. 6, no. 3, p. 315-322, illus, July 1960.
- HOFMANN, Renner B See STEWART, Samuel Woods 1-60
- HOGARTH, Donald David  
 1-60. A study of pyrochlore and betafite [abs ] Canadian Mining and Metall. Bull., v. 53, no. 575, p. 200, Mar. 1960.  
 2-60 A mineralogical study of pyrochlore and betafite [abs ] Canadian Mining Jour, v 81, no. 1, p. 94, Jan 1960.
- HOGBERG, Rudolph K.  
 1-60. Geology of the Ruby Creek iron deposit, Madison County, Montana, in West Yellowstone--Earthquake area Billings Geol Soc., 11th Ann. Field Conf., Sept 1960, [Guidebook] p. 268-272 incl geol. sketch map, 1960.
- HOIDAL, C. R See COOMBS, Howard Abbott 1-60
- HOLBROOK, O. C See BERNARD, George G. 1-60
- HOLDEN, Alan  
 1-60 (and SINGER, Phyllis) Crystals and crystal growing Garden City, N. Y., Anchor Books, 320 p., illus., 1960.
- HOLE, Drancis Doan. See GLENN, R. C. 1-60
- HOLGATE, M M.  
 1-60. The microlog as a porosity datum for the neutron log in the Swan Hills Field, Alberta Canadian Mining and Metall Bull., v 53, no. 579, p. 502-

## HOLGATE

506 incl. diagrams and tables, July 1960; Canadian Inst. Mining and Metallurgy Trans , v. 63, p 325-329, 1960.

### HOLLAND, C. H.

1-60. Load-cast terminology and origin of convolute bedding--Some comments Geol. Soc. America Bull., v. 71, no. 5, p. 633, May 1960, discussion of paper by H. H. Sullwold, Jr., v. 70, p 1247-1248, 1959, reply by H. H. Sullwold, Jr., Load-cast terminology and origin of convolute bedding--Further comments, v. 71, no. 5, p. 635-636 incl. diagram, May 1960.

### HOLLAND, Heinrich Dieter

1-60. (and SEGNET, Edgar R.) Some data on the system  $\text{CaCO}_3\text{-CaCl}_2\text{-CO}_2\text{-H}_2\text{O}$  and their implication for the precipitation of calcite from hydrothermal solutions [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p 1889, Dec. 1960.

### HOLLAND, Richard Rainey. See HESTER, Robert J. 1-60

### HOLLAND, T. H.

1-60. Possibilities of reproducing fossils Compass, v. 37, no. 4, p. 339-340, May 1960.

### HOLLAND, William Yates. See GIBBS, Harold J. 2-60

### HOLLAND, Willis A., Jr. See HURST, Vernon James 3-60

### HOLLANDER, J. Theodore

1-60. Geology and aquifer characteristics of the inner-valley alluvium in the Safford Valley, Arizona Arizona Geol. Soc. Digest, v. 3, p. 133-135, Mar. 1960.

### HOLLENSHEAD, Charles Thomas

1-60. (and PRITCHARD, Roy Lee) Geometry of producing Mesaverde sandstones, San Juan basin [New Mexico] [abs.] Am. Assoc. Petroleum Geologists Bull., v. 44, no. 7, p. 1250, July 1960.

### HOLLOWAY, H. L.

1-60. Oil sands of Alberta Mining Mag. (London), v 102, no 6, p. 337-342, illus., June 1960.

### HOLMES, Arthur. See WETHERILL, George West 2-60

### HOLMES, Chauncey DePew

1-60. Evolution of till-stone shapes, central New York Geol. Soc. America Bull., v. 71, no. 11, p. 1645-1660 incl. sketch map, diagrams, and tables, illus., Nov. 1960.

2-60. (and COTTON, Roger Burnham) Patterned ground near Dundas (Thule Air Force Base), Greenland Medd. om Grønland, bind 158, nr. 6, 15 p., illus., 1960.

### HOLMES, Clifford Newton

1-60. Jurassic history and stratigraphy of Colorado [abs.] Dissert. Abs., v 21, no. 4, p 848-849, Oct. 1960.

### HOLMES, Ralph Jerome

1-60. Synthetic and other man-made gems Foote Prints, v. 32, no. 1, p. 3-24, illus., 1960.

### HOLLOWAYCHUK, N. See BAKER, F. J. 1-60

### HOLSER, William Thomas

1-60. Classification of symmetry groups [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt 2, p. 1889, Dec 1960.

- 2-60. Relation of pseudosymmetry to structure in twinning, in Symposium on twinning Inst. Inv. Geol "Lucas Mallada" Cursos y Conf (Madrid), fasc. 7, p 19-30 incl. diagrams and table, May 1960
- HOLT, J. Birch  
1-60. (and CUTLER, Ivan Burton, and WADSWORTH, Milton Elliot) Kinetics of the dehydration of kaolinite in vacuum [abs ] Am Ceramic Soc. Bull., v. 39, no. 4, p. 187, Apr 1960.
- HOLT, Richard J See MURPHY, Vincent J. 1-60
- HOLUJ, F.  
1-60. (and PETCH, Howard Earl) A nuclear magnetic resonance study of colemanite Canadian Jour. Physics, v. 38, no 4, p. 515-546 incl diagrams and tables, Apr 1960.
- HOLZLE, Alvin F.  
1-60. Photogeologic map of the Cabezon-3 quadrangle, McKinley and Sandoval Counties, New Mexico U S. Geol Survey Misc. Geol Inv Map I-317, scale 1 62,500 (about 1 in to 1 mi.), 1960.
- HOMESTAKE MINING COMPANY GEOLOGICAL STAFF. See GEOLOGICAL SOCIETY of AMERICA, Rocky Mountain Section 1-60
- HONDA, Masatake. See MERRILL, John R. 1-60
- HONKALA, Frederick Sauli  
1-60. Structure of the Centennial Mountains and vicinity, Beaverhead County, Montana, in West Yellowstone--Earthquake area Billings Geol. Soc , 11th Ann. Field Conf., Sept. 1960, [Guidebook] p 107-113 incl. index map, diagram, and illus., 1960.
- HONOLULU BOARD of WATER SUPPLY  
1-60. The water sources of Oahu [Hawaii] 31 p. incl sketch maps, graphs, and illus., [1960?].
- HONSTEAD, J. F. See also SCHWENDIMAN, L. C. 1-60  
1-60. (and FOSTER, Richard F., and BIRSCHENK, William H.) Movement of radioactive effluents in natural waters at Hanford [Washington], in Disposal of radioactive wastes, V 2. Internat. Atomic Energy Agency, Sci. Conf. on Disposal of Radioactive Wastes, Monaco, Nov 16-21, 1959, Proc., v. 2, p 385-399 incl. index and hydrologic maps, diagrams, and table, with English, French, Russian, and Spanish abs., 1960
- HOOD, James W.  
1-60. (and MOWER, Reed W., and GROGIN, M. J.) The occurrence of saline ground water near Roswell, Chaves County, New Mexico New Mexico State Engineer Tech Rept 17, 93 p , illus incl. geol. map, 1960
- HOOVER, Karl V  
1-60 Devonian-Mississippian shale sequence in Ohio Ohio Div. Geol Survey Inf. Circ. 27, 154 p., illus , 1960.
- HOPKINS, Arthur H See RICHARDS, Horace Gardiner 3-60
- HOPKINS, David Moody  
1-60. (and MacNEIL, Francis Stearns) A marine fauna probably of late Pliocene age near Kivalina, Alaska Art 157 in U S. Geol Survey Prof. Paper 400-B, p B339-B342 incl. index map, section, and table, 1960.  
2-60 (and MacNEIL, Francis Stearns, and LEOPOLD, Estella Bergère) The coastal plain at Nome, Alaska--A late Cenozoic type section for the Bering Strait region Internat. Geol. Cong., 21st, Copenhagen, 1960, Rept , pt 4, p 46-57 incl geol sketch map, section, diagram, and table, 1960

## HOPKINS

3-60 (and WAHRHAFTIG, Clyde Adolph) Annotated bibliography of English-language papers on the evolution of slopes under periglacial climates Zeitschr. Geomorphologie (Berlin), Supplementband 1, p. 1-8, 1960.

HOPKINS, Otho Neil, Jr See FOX, W. J. 1-60

HOPKINS, William B.

1-60 (and SIMPSON, Thomas A.) Montana earthquakes noted in Pennsylvania mine-water pools Am. Geophys. Union Trans , v. 41, no. 2, p. 435-436, Sept 1960.

HOPSON, Clifford Andrae

1-60. The Port Deposit granodiorite complex, in Some tectonic and structural problems of the Appalachian Piedmont along the Susquehanna River Pennsylvania Geologists, 25th Ann. Field Conf , Oct 1960, Guidebook, p. 27-31, 33-34 incl. table, also sketch maps and illus , 1960.

2-60 Conowingo contact zone, Port Deposit granodiorite, in Some tectonic and structural problems of the Appalachian Piedmont along the Susquehanna River Pennsylvania Geologists, 25th Ann. Field Conf., Oct. 1960, Guidebook, p. 32-34, 1960

HOREN, Arthur See STRACZEK, John A. 1-60

HORIKAWA, Kiyoshi

1-60 (and SHEN, H W ) Sand movement by wind action (on the characteristics of sand traps) [U.S.] Beach Erosion Board Erosion Board Tech Memo. 119, 51 p., illus., Aug 1960.

HORN, Paul Herbert. See TOTTEN, Robert Briggs 1-60

HOROWITZ, Alan Stanley

1-60. (and RODRIGUEZ, Joaquin) Paraconularia? from the Middle Chester of Indiana [abs ]. Geol Soc America Bull , v. 71, no 12, pt 2, p 1890-1891, Dec 1960

HORR, Clarence Albert See SKOUGSTAD, Marvin Wilmer 1-60

HORSTMAN, Elwood Louis

1-60. (and GARDNER, William E ) Introduction to first day's trip, in Cenozoic of southeast Mississippi and southwest Alabama Mississippi Geol. Soc., 15th Field Trip, May 1960, Guidebook, p. 6-10 incl. geol. sketch map and diagram, 1960

HORTON, James Henry

1-60. (and ROSS, D. I.) Use of tritium from spent uranium fuel elements as a ground-water tracer Soil Sci , v. 90, no. 5, p. 267-271 incl sketch map and diagrams, Nov. 1960

HORTON, Robert Carlton

1-60. History of the mineral industry in the White Pine County area, in Geology of east central Nevada Intermountain Assoc Petroleum Geologists, 11th Ann Field Conf , 1960 Guidebook, p. 210-219 incl sketch maps and chart, 1960

HOSE, Heath Roydon

1-60. The genesis of bauxite, the ores of aluminum Internat Geol Cong , 21st, Copenhagen, 1960, Rept., pt. 16, p. 237-247 incl. tables, 1960.

HOSKINS, Donald Martin

1-60 Fossils from the red beds of the Bloomsburg formation of central Pennsylvania [abs ] Geol. Soc America Bull , v. 71, no. 12, pt 2, p 1891, Dec 1960.



HOSTERMAN, John Wallace. See also KNECHTEL, M. M. 1-60, PATTERSON, S. H. 1-60

1-60. (and others) Investigations of some clay deposits in Washington and Idaho U. S. Geol. Survey Bull. 1091, 147 p incl. maps, diagram, and tables, 1960

2-60. Geology of the clay deposits in parts of Washington and Idaho, in Swineford, Ada, ed., Clays and clay minerals Natl Conf Clays and Clay Minerals, 7th, Washington, D. C., Oct. 1958, Proc., p 285-292 incl. geol. sketch map, diagrams, and table, also illus., 1960. (Issued as Internat. Earth Science Ser. Mon 5 of Pergamon Press, New York.)

HOTTON, Nicholas, 3d

1-60 The chorda tympani and middle ear as guides to origin and divergence of reptiles Evolution, v. 14, no. 2, p 194-211 incl. chart and illus., June 1960.

HOUGH, VanNess D.

1-60. Photogeologic techniques applied to the mapping of rock joints West Virginia Geol. and Econ Survey Rept. Inv. 19, 21 p., illus. incl. geol. map, June 30, 1960

HOUSE, Henry Pierce. See RAINS, T. C. 1-60

HOUSER, Frederick Northrop

1-60 (and POOLE, Forrest Graham) Structural features of pyroclastic rocks of the Oak Spring formation at the Nevada Test Site, Nye County, Nevada, as related to the topography of the underlying surface Art 120 in U. S. Geol. Survey Prof. Paper 400-B, p B266-B268 incl. index map, 1960.

2-60. (and POOLE, Forrest Graham) Primary structures in pyroclastic rocks of the Oak Spring formation (Tertiary), northeastern Nevada Test Site, Nye County, Nevada [abs.] Geol. Soc America Bull., v. 71, no. 12, pt. 2, p. 2062-2063, Dec. 1960.

3-60. (and POOLE, Forrest Graham) Preliminary geologic map of the Climax stock and vicinity, Nye County, Nevada U. S. Geol Survey Misc. Geol. Inv. Map I-328, 2 sheets, scale about 1 in. to 400 ft., with sections, 1960.

HOUSTON GEOLOGICAL SOCIETY

1-60. (and SOCIETY of ECONOMIC PALEONTOLOGISTS and MINERALOGISTS, Gulf Coast Section, and RUSSELL, William Low, leader) Jackson group, Catahoula and Oakville formations, and associated structures of northern Grimes County, Texas, guidebook for annual field trip, May 14, 1960 50 p., illus., 1960. Includes papers by D. A. Drake and F. E. Smith, which are cited separately

HOWARD, Arthur David

1-60. Photogeology at Stanford University Photogramm. Eng., v. 26, no. 1, p 72-73, Mar. 1960

2-60. The correction graph in photogeology Photogramm. Eng., v 26, no 3, p 412-424 incl. graphs and table, June 1960.

3-60. Cenozoic history of northeastern Montana and northwestern North Dakota U. S. Geol Survey Prof Paper 326, 107 p., illus., 1960.

4-60 The hydrothermal phenomena of the Yellowstone National Park [Wyoming], in Pt. 9 of Catalogue of the active volcanoes of the world including solfatara fields. Naples, Italy, Internat. Volcanol Assoc., p. 61-68 incl. sketch map and table, 1960

HOWARD, Calhoun L. H.

1-60. (and KERR, Paul Francis) Blue halite Science, v. 132, no. 3443, p. 1886-1887 incl. diagram, Dec. 23, 1960.

HOWARD, Hildegard

1-60 Significance of carbon-14 dates for Rancho La Brea [California] Science, v. 131, no 3402, p. 712-714, Mar. 11, 1960.

## HOWARD

HOWARD, John Hall

- 1-60 Structural development of the Williams Range thrust, Colorado [abs.]  
Geol. Soc. America Bull., v. 71, no. 12, pt 2, p 1891-1892, Dec. 1960.

HOWARTH, Michael Kingsley

- 1-60. Generic names for Ammonoidea published during the period 1758-1954 Jour Paleontology, v. 34, no. 1, p. 194-200, Jan. 1960.

HOWE, Herbert James

- 1-60 Turbinolia rosetta, a new coral species from the Paleocene of Alabama Jour. Paleontology, v 34, no. 5, p 1020-1022 incl index map and illus., Sept. 1960.  
2-60. A contribution to the stratigraphy of the Montoya group [abs ] Dissert. Abs., v. 21, no. 1, p. 170, July 1960.

HOWE, Robert Hsi Lin

- 1-60. The application of aerial photographic interpretation to the investigation of hydrologic problems Photogramm Eng., v. 26, no 1, p 85-95 incl. sketch maps, diagrams, tables, and illus , Mar 1960

HOWE, Wallace Brady. See HEIM, George E. 1-60, 2-60

HOWELL, Benjamin Franklin

- 1-60. Memorial to Frederick William Sardeson (1866-1959[?1958]) Geol. Soc. America Proc 1959, p 143-145, portrait, Oct. 1960.  
2-60. How should the Cambrian epochs and series be delimited? Internat Geol. Cong , 21st, Copenhagen, 1960, Rept., pt 8, p. 37-39, 1960

HOWELL, Benjamin Franklin, Jr.

- 1-60 (and WOODTLI, Robert A.) Factors influencing thickness of the earth's crust [abs ] Geol Soc. America Bull , V 71, no 12, pt. 2, p. 1892, Dec. 1960.

HOWELL, Francis Clark. See SIMPSON, George Gaylord 3-60

HOWELL, Jesse V.

- 1-60. Geology plus adventure--The story of the Hayden Survey, in West Yellowstone--Earthquake area [Montana] Billings Geol Soc , 11th Ann. Field Conf., Sept. 1960, [Guidebook] p. 20-23, reprinted 1960, originally published 1959.

HOWELL, Lynn Gorman. See also MARTINEZ, J D. 1-60

- 1-60. (and others) A note on chemical magnetization of rocks Geophysics, v 25, no. 5, p 1094-1099 incl. diagrams and tables, Oct. 1960.

H[OWELL], P[aul] W[illiam]

- 1-60 Rock riches in northern Ohio Geol Soc. Oregon Country Geol. News Letter, v. 26, no. 3, p. 18-19, Mar 1960  
2-60 New data on the Portland Hills silt Geol. Soc Oregon Country Geol. News Letter, v. 26, no 6, p. 45-46, June 1960.  
3-60. Strangers on the beach. Geol. Soc. Oregon Country Geol. News Letter, v. 26, no. 9, p. 61-63, Sept. 1960  
4-60 The secrets of the sediments Geol. Soc. Oregon Country Geol. News Letter, v. 26, no. 10, p. 70-72, Oct 1960  
5-60 Fort Rock--A diatreme Geol. Soc Oregon Country Geol. News Letter, v 26, no 11, p 75-76, Nov. 1960.

HOWELLS, William White

- 1-60. The distribution of man Sci. Am., v. 203, no. 3, p 112-120, 122, 124-125 incl. sketch maps and illus., Sept. 1960.

HOWER, John, Jr. See HURLEY, Patrick Mason 1-60, PILKEY, Orrin H. 1-60

HOWERY, S. D.

- 1-60. (and HAM, William Eugene, and MANKIN, Charles John) Authigenic apatite and magnesium clay from Caddo County, Oklahoma Oklahoma Geology Notes, v. 20, no. 8, p 187-190, illus., Aug. 1960.

HOWLAND, Arthur Lloyd. See JONES, William Rich 1-60

HOYTE, Alfred F.

- 1-60 A gamma-ray absorption method for the determination of uranium in ores. Art. 231 in U. S. Geol Survey Prof. Paper 400-B, p B504-B507 incl diagram and tables, 1960.

HREHA, Andrew J. See DAWSON, Thomas Albert 2-60

HSU, Kenneth Jinghwa

- 1-60, Texture and mineralogy of the Recent sands of the Gulf Coast Jour. Sed Petrology, v 30, no 3, p 380-403 incl sketch maps, diagrams, and tables, Sept. 1960

HU, Chung-Hung. See LOCHMAN-BALK, Christina 2-60

HUANG, C K.

- 1-60. (and KERR, Paul Francis) Infrared study of the carbonate minerals Am. Mineralogist, v. 45, nos 3-4, p. 311-324 incl. diagrams and tables, Mar.-Apr. 1960

HUBBERT, M. K See LAUBSCHER, Hans P. 1-60

HUBBLE, John H. See FEULNER, Alvin J. 1-60

HUBBS, Carl Leavitt

- 1-60. (and BIEN, George Sung-Nien, and SUESS, Hans Edward) La Jolla natural radiocarbon measurements, [Pt.] 1 Am. Jour Sci Radiocarbon Supp., v 2, p 197-223, 1960.  
2-60. Quaternary paleoclimatology of the Pacific coast of North America California Coop Oceanic Fisheries Inv. Rept., v. 7, p. 105-112 incl. discussion, Jan 1, 1960, California, Univ, Scripps Inst Oceanography Contr. 1960, p. 519-526, June 1960.

HUBERT, John Frederick

- 1-60 Syngenetic bleached borders on detrital red beds of the Fountain formation, Front Range, Colorado Geol. Soc. America Bull, v. 71, no. 1, p 95-98 incl outcrop sketches, table and illus. Jan. 1960  
2-60. Interdependence of the composition of heavy-mineral assemblages with the gross composition and texture of sandstones [abs] Geol. Soc. America Bull., v. 71, no. 12, pt 2, p. 1892-1893 Dec. 1960.  
3-60. Petrology of the Fountain and Lyons Formations, Front Range, Colorado Colorado School Mines Quart., v. 55, no 1, p 1-242 incl. index and sketch maps, sections, diagrams, tables, and illus., Jan 1960

HUBRICHT, Leslie

- 1-60. Hendersonia occulta fossil in Mississippi Nautilus, v. 74, no. 2, p. 83, Oct 1960.

HUDEC, P. P.

- 1-60. Highstone Lake-Miniss Lake area, Kenora and Thunder Bay Districts, Ontario Ontario Dept Mines Prelim Map P.54, geol map, scale 1 63,360 (1 in. to 1 mi.) [Apr 14, 1960].

HUDSON, Frank Samuel

- 1-60 Post-Pliocene uplift of the Sierra Nevada, California Geol Soc. America Bull., v. 71, no 11, p 1547-1573 incl. sketch maps, profiles, diagrams, and tables, Nov 1960

HUFF, Lyman Coleman

- 1-60. (and LOVERING, Tom Gray, and LAKIN, Hubert William, and MYERS, Alfred Tennyson) Comparison of analytical methods used in geochemical prospecting for copper [abs.] Geol Soc America Bull, v 71, no 12, pt 2, p 1893, Dec. 1960, Econ Geology, v 55, no. 6, p. 1329, Sept -Oct. 1960

## HUFF

- 2-60. Comparison of soil analysis with other prospecting methods at a small high grade copper lode [Colorado], in Internat Geol Cong , Mexico, Symposium de exploración geoquímica, Tomo 3 México, D. G , p 487-500 incl diagrams and tables, 1960.

HUFF, R. V. See RIGGS, Calvin Harold 1-60

HUFFMAN, Claude, Jr. See also RADER, L. F., Jr 1-60

- 1-60. Water-soluble boron in sample containers Art 224 in U. S. Geol. Survey Prof Paper 400-B, p B493-B494 incl table, 1960.

HUFFMAN, George Garrett

- 1-60. Pre-Desmoinesian isopachous and paleogeologic studies in central Mid-Continent region [abs ] Am Assoc. Petroleum Geologists Bull , v 44, no 1, p 128, Jan 1960
- 2-60. (and STARKE, John M., Jr.) *Spirifer grimesi* from the St. Joe limestone near Tahlequah, Oklahoma Oklahoma Geology Notes, v. 20, no 3, p 50-52, illus., Mar. 1960.
- 3-60. (and STARKE, John M , Jr ) A new fossil plant locality in the Sylamore member, Chattanooga formation, northeastern Cherokee County, Oklahoma Oklahoma Geology Notes, v 20, no 4, p 89-91, illus. incl geol map, Apr. 1960.
- 4-60. (and STARKE, John M , Jr ) Noel shale in northeastern Oklahoma Oklahoma Geology Notes, v 20, no 7, p. 159-163, illus , July 1960
- 5-60. Relationship of Paleozoic boundaries to marine transgressions and orogenic movements Oklahoma Geology Notes, v 20, no. 5, p 116-119, illus , May 1960.
- 6-60. (and STARKE, John M., Jr ) A chazyan faunule from the lower Tyner, northeastern Oklahoma Oklahoma Geology Notes, v 20, no 10, p. 268-271, illus., Oct 1960.
- 7-60 Oklahoma Cement Company opens new plant near Pryor Oklahoma Geology Notes, v 20, no 11, p 282-286, illus. incl geol. sketch map, Nov 1960
- 8-60 Regional relations of pre-Desmoinesian rocks, central Mid-Continent region, in North-eastern Oklahoma Kansas Geol Soc., 25th Field Conf , Sept 1960, Guidebook, p 48-71, illus , 1960.
- 9-60. Geology of the Oklahoma Ozark region, in North-eastern Oklahoma Kansas Geol Soc , 25th Field Conf., Sept 1960, Guidebook, p 82-109, illus , 1960.
- 10-60 The lakes of northeastern Oklahoma, in North-eastern Oklahoma Kansas Geol. Soc , 25th Field Conf., Sept 1960, Guidebook, p. 118-122, 1960.

HUGHES, Dudley Joe

- 1-60. Faulting associated with deep-seated salt domes in northeast part of Mississippi salt basin [abs.] Am. Assoc Petroleum Geologists Bull., v 44, no 9, p. 1601-1602, Sept. 1960
- 2-60 Faulting associated with deep-seated salt domes in the northeast portion of the Mississippi salt basin Gulf Coast Assoc Geol. Socs. Trans , v. 10, p 154-173 incl. index and sketch maps, sections, and diagrams, 1960.

HUGHES, Owen L See CANADA GEOL SURVEY 21-60, 29-60, 33-60; TERASMAE, Jaan 1-60, 4-60

HUGHES, Paul Warren

- 1-60 (and BRADLEY, William Frank, and GLASS, Herbert David) Mineralogical analysis of carbonate rocks by X-ray diffraction Jour. Sed Petrology, v 30, no. 4, p 619-622 incl diagrams and table, Dec. 1960.

HULINGS, Neil Carlton. See EHLMANN, Arthur J. 1-60

HULL, Frank Montgomery

- 1-60. A new genus and four new species of fossil diptera from Montana and Colorado Michigan Univ Mus Paleontology Contr., v. 15, no. 11, p 269-279, illus., Aug. 31, 1960.

HULL, John See SUTTON, Felix 1-60, 2-60

## HULL, Paul

- 1-60 (and COOLIDGE, John E.) Field examples of nuclear magnetism logging Soc. Prof. Well Log Analysts, 1st. Ann. Logging Symposium, Tulsa, Oklahoma, May 16-17, 1960, Trans., [26] p incl. sketch maps, diagrams, and tables, paged separately, 1960
- 2-60 (and COOLIDGE, John E.) Field examples of nuclear magnetism logging Jour. Petroleum Technology, v 12, no. 8, p 14-22 incl diagrams and tables, Aug 1960.

## HUMMEL, Charles L

- 1-60. (and CHAPMAN, Robert Mills) Geologic and economic significance of some geochemical results obtained from stream sediment samples near Nome, Alaska Art. 16 in U. S. Geol. Survey Prof. Paper 400-B, p. B30-B33 incl. index map and table, 1960.
- 2-60. Structural geology and structural control of mineral deposits near Nome, Alaska Art. 17 in U. S. Geol. Survey Prof. Paper 400-B, p. B33-B35 incl. geol sketch map, 1960.
- 3-60. Structural geology and structural control of mineral deposits in an area near Nome, Alaska [abs.] Geol. Soc. America Bull., v. 71, no 12, pt. 2, p 2063, Dec 1960.

## HUMMEL, Floyd Allen. See MURTHY, M. Krishna 1-60

## HUMPHREY, Fred LaSalle

- 1-60. Geology of the White Pine mining district, White Pine County, Nevada Nevada Bur Mines Bull 57, 119 p. incl. index and geol. sketch maps, sections, correlation chart, and illus., geol. and claim maps, 1960.

## HUMPHRYS, Graham

- 1-60 The Montferré mining region, Labrador-Ungava [Quebec] Scottish Geog Mag. (Edinburgh), v. 76, no 1, p. 38-45 incl. index and sketch maps, Apr. 1960.

## HUNGSBERG, Ulrich

- 1-60 Origen del azufre en el casquete de los domos salinos, cuenca salina del Istmo de Tehuantepec México Consejo Recursos Nat no Renovables Bol 51, 96 p, illus. incl. geol. maps, 1960.

## HUNKINS, Kenneth Leland See also SCHWARZACKER, Walter 1-60

- 1-60 (and others) Biological and geological observations on the first photographs of the Arctic Ocean deep-sea floor Limnology and Oceanography, v 5, no. 2, p. 154-161, illus., Apr 1960.
- 2-60. Seismic studies of the Arctic Ocean floor [abs ] Oilweek, v. 10, no. 49, p. 19, Jan 23, 1960.

## HUNT, Alice P.

- 1-60. (and TANNER, Dallas) Early man sites near Moab, Utah Am. Anti-quity, v. 26, no 1, p. 110-117 incl. sketch map, diagrams, table, and illus., June 1960

## HUNT, C. Warren

- 1-60 Discussion of photo-geology and tectomorphic analysis for interpretation of subsurface structure [abs ]. Oil in Canada, v 12, no. 29, p. 28, May 16, 1960.

## HUNT, Charles Butler. See also GREENE, G. W. 2-60, WARD, F. N. 1-60

- 1-60. (and ROBINSON, Thomas William) Possible interbasin circulation of ground water in the southern part of the Great Basin Art. 123 in U. S. Geol. Survey Prof Paper 400-B, p B273-B274 incl index map and diagram, 1960.
- 2-60. Some examples of geologic factors in plant distribution [California] Art 180 in U. S. Geol Survey Prof. Paper 400-B, p B390-B391 incl. section and diagrams, 1960.
- 3-60 (and WASHBURN, Albert Lincoln) Salt features that simulate ground patterns formed in cold climates [California] Art. 185 in U. S. Geol. Survey Prof. Paper 400-B, p. B403 incl diagram and sections, 1960.

## HUNT

- 4-60. The Death Valley salt pan, a study of evaporites Art 208 in U. S. Geol. Survey Prof. Paper 400-B, p. B456-B458 incl. diagrams, 1960.  
5-60. Geologic mapping by helicopter [California] GeoTimes, v 4, no. 7, p 12-14, 40 incl. sketch map and illus., Apr. 1960.

HUNT, Graham H.

- 1-60 Time of intrusion of the Purcell sills, southeastern British Columbia [abs.] Geol. Soc. America Bull, v. 71, no. 12, pt 2, p 1893, Dec. 1960

HUNT, John B. See CAROZZI, Albert Victor 1-60

HUNTER, Hugh Edwards. See also HISS, W L. 2-60

- 1-60. Topographic control by primary igneous structures in the Raggedy Mountains, southwestern Oklahoma Oklahoma Geology Notes, v 20, no 5, p 112-115, illus, May 1960

HUNTER, Marvin Nathaniel

- 1-60. A theory concerning the geomagnetic-solar influence on weather and climate [abs.] Jour. Geophys. Research, v. 65, no. 8, p 2499, Aug. 1960.

HUNTER, Ralph E. See SHEPPARD, Richard A. 1-60

HUNTING GEOPHYSICAL SERVICES

- 1-60. Geological interpretation of airborne magnetometer and scintillometer survey, Mt. Bonaparte, Bodie Mountain, Curlew, Aeneas, and Republic quadrangles, Okanogan and Ferry Counties, Washington Washington State Div. Mines and Geology Rept. Inv. 20, 34 p., illus. incl. separate maps, 1960.

HUNTTING, Marshall Tower. See VALENTINE, Grant Miller 1-60

HURD, B. G.

- 1-60. (and FITCH, John Lawrence) The effect of gypsum on core analysis results Am Inst. Mining, Metall., and Petroleum Engineers Trans. 1959, v. 216, p 221-224 incl. diagrams and tables, 1960.

HURLBUT, Cornelius Searle, Jr.

- 1-60. (and BAUM, John L.) Ettringite from Franklin, New Jersey Am. Mineralogist, v. 45, nos 11-12, p. 1137-1143 incl. diagrams and tables, Nov.-Dec 1960.

HURLEY, Patrick Mason See also FAIRBAIRN, H. W. 1-60, 2-60, 3-60, HART, Stanley R. 1-60, HERZOG, Leonard Frederick, Jr 2-60, MOORE, John Marshall 1-60

- 1-60. (and others) Reliability of glauconite for age measurement by K-Ar and Rb-Sr methods Am Assoc Petroleum Geologists Bull., v 44, no. 11, p. 1793-1808 incl diagrams and tables, Nov 1960.

HURLEY, Robert J.

- 1-60. Longitudinal filling in the Aleutian Trench [abs.] Geol Soc. America Bull., v. 71, no 12, pt. 2, p 1894, Dec. 1960.  
2-60. New evidence on the northward continuation of the San Andreas fault [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1894, Dec. 1960.

HURST, Vernon J.

- 1-60. Monazite-bearing pegmatites in the South Georgia Piedmont Econ. Geology, v. 55, no 3, p. 610-613 incl. geol and radioactivity maps, May 1960, discussion of paper by C. W. Fortson, Jr., and A. T. Navarre, v. 54, no. 7, p. 1309-1311, 1959, reply by authors, v. 55, no 3, p 613-615, May 1960.  
2-60 Status of lithologic mapping in crystalline rocks of Georgia [abs.] Georgia Acad Sci. Bull., v. 18, nos. 1-2, p 14-15, Apr. 1960.  
3-60. (and HOLLAND, Willis A., Jr.) Strontium in the dolomite-marble of the Brevard Belt [abs.] Georgia Acad Sci. Bull, v. 18, nos. 1-2, p. 15, Apr. 1960

- 4-60 Oil tests in Georgia Georgia [Geol. Survey] Inf. Circ. 19, 14 p. incl. diagram, table, and map, index map, June 1960.
- HUSE, Herbert W.  
1-60. Nitrogen compounds, in Am. Inst Mining, Metall., and Petroleum Engineers, Industrial minerals and rocks, p 639-648 incl. tables, 1960
- HUSSEY, Keith Morgan. See CARSON, Charles E. 1-60, 20-60, CHENEY, Theodore Albert 1-60, COULTER, Henry Welty 1-60, O'SULLIVAN, John Blanford 1-60
- HUSTED, John Edwin  
1-60 (and STRALEY, H. W , 3d) The Blue Ridge fault zone and the distribution of southern Appalachian earthquakes [abs.] Georgia Acad Sci. Bull., v 18, nos 1-2, p. 14, Apr 1960.  
2-60. (and STRALEY, H. W , 3d) The preCretaceous topography of the Georgia coastal plain [abs.] Georgia Acad Sci. Bull , v 18, nos 1-2, p 10, Apr. 1960.
- HUTCHEON, N. B See LEGGET, Rôbert Ferguson 2-60
- HUTCHINSON, George Evelyn  
1-60. On evolutionary euryhalinity. Am. Jour. Sci., v. 258-A (Bradley Volume), p 98-103, 1960.
- HUTCHINSON, Harold C.  
1-60. Geology and coal deposits of the Brazil Quadrangles, Indiana Indiana Geol. Survey Bull. 16, 50 p , illus. incl. geol. map, Aug. 1960
- HUTCHINSON, Robert David  
1-60. Middle Cambrian fossils in eastern Alberta Alberta Soc. Petroleum Geologists Jour., v 8, no. 4, p. 137, Apr 1960.
- HUTCHINSON, Robert Maskiell  
1-60 Petrotectonics and petrochemistry of late Precambrian batholiths of central Texas and the north end of Pikes Peak batholith, Colorado Internat Geol. Cong , 21st, Copenhagen, 1960, Rept., pt. 14, p. 95-107 incl. sketch maps, diagrams, and tables, 1960.  
2-60 Time-space relations along southwest flank of Pikes Peak batholith and its metamorphic wall rocks, Park and Teller Counties, Colorado [abs.]. Geol. Soc. America Bull., v. 71, no 12, pt. 2, p 1894-1895, Dec. 1960.  
3-60. Structural, textural, mineralogical, and chemical changes in Precambrian granitized rocks in central Texas and Colorado Front Range [abs.] Geol. Soc. America Bull , v 71, no. 12, pt. 2, p 2036, Dec. 1960.  
4-60. Structure and petrology of north end of Pikes Peak batholith, Colorado, in Rocky Mtn Assoc Geologists, Guide to the geology of Colorado Denver, p. 170-180 incl. sketch maps, diagrams, tables, and illus., tectonic map, 1960.
- HUTTA, Josef J. See WRIGHT, Harold Douglas 3-60
- HUTTL, John B.  
1-60. Simplot washes high-grade glass sand from Nevada sandstone Eng and Mining Jour., v. 161, no. 1, p 90-92, 94 incl diagram and illus , Jan. 1960  
2-60. Skin diving for gold becomes popular hobby in California Eng and Mining Jour., v. 161, no 10, p 108-111 incl. sketch map, diagrams, and illus , Oct 1960.
- HUTTON, Colin Osborne  
1-60 (and VLISIDIS, Angelina Calomeris) Papagoite, a new copper-bearing mineral from Ajo, Arizona Am. Mineralogist, v 45, nos 5-6, p 599-611 incl. diagrams and tables, May-June 1960

## HUXLEY

HUXLEY, Julian Sorrell. See also FISHER, James 1-60

- 1-60. (and EMERSON, Alfred Edwards, chairmen) The evolution of life, Panel 2 in Tax, S., and Callender, C., eds., *Evolution after Darwin*, V 3 Chicago, Ill., Univ. Chicago Press, p. 107-143, 1960

HYLER, Nelson W.

- 1-60 The how and why book of rocks and minerals New York, N. Y., Grosset and Dunlap, 48 p., illus., 1960.

HYTONEN, Kai

- 1-60. (and SCHAIRER, John Frank) Preliminary report on the system enstatite-anorthite-diopside [abs.] *Geol. Soc. America Bull.*, v 71, no 12, pt. 2, p 1895, Dec. 1960

IGELMAN, Kim See SHUMWAY, George 2-60

IGNAT'EV, G M

- 1-60. New data on Greenland, in *Problems of the North*, No 1, 1958, translation of "Problemy Severa" Ottawa, Natl Research Council, p 291-299, Dec 1960.

## ILLINOIS STATE GEOLOGICAL SURVEY

- 1-60. Geological Science Field Trip--Harrisburg area, Saline and Gallatin Counties, Harrisburg and Equality quadrangles, October 15, 1960 Illinois State Geol Survey Guide Leaflet 60-F, [19] p incl geol sketch maps, charts, and diagrams, 1960
- 2-60 Geological Science Field Trip--Pana area, Montgomery, Christian and Shelby Counties, October 1, 1960 Illinois State Geol Survey Guide Leaflet 60-E, [18] p incl geol sketch maps, section, charts, and diagrams, 1960
- 3-60 Geological Science Field Trip--Milan-Rock Island area, Rock Island and Henry Counties, Milan, Coal Valley, Port Byron, Green Rock, Davenport East and Silvis quadrangles, September 17, 1960 Illinois State Geol Survey Guide Leaflet 1960D, [34] p. incl geol sketch maps, sections, charts, and diagrams, 1960
- 4-60 Geological Science Field Trip--Woodstock area, Harvard, McHenry, and Genoa quadrangles, May 21, 1960 Illinois State Geol Survey Guide Leaflet 1960C, [19] p incl geol sketch maps, charts, and diagrams, 1960.
- 5-60 Geological Science Field Trip--Grafton area, Jersey County, Jerseyville, Hardin, St Charles, and Brussels quadrangles, May 7, 1960 Illinois State Geol. Survey Guide Leaflet 60-B, [17] p incl sketch map, sections, charts, and diagrams, 1960
- 6-60. Geo-science Field Trip--Salem area, Marion County, Centralia and Salem quadrangles, April 16, 1960 Illinois State Geol Survey Guide Leaflet 60-A, [16] p incl section, diagrams, and chart, 1960.
- 7-60 Illinois State Academy of Science Geology and Botany Field Trip--Quincy area, Adams County, Quincy and Mendon quadrangles, April 23, 1960 Illinois State Geol Survey Guide Leaflet 60, [18] p. incl. geol sketch maps, diagrams, and tables, 1960.

IMBRIE, John See also NEWELL, N D. 2-60

- 1-60 Beattie limestone facies and their bearing on cyclic sedimentation theory [abs.] *Am. Assoc Petroleum Geologists Bull.*, v 44, no. 1, p 128-129, Jan 1960

IMLAY, Ralph Willard See also POPENOE, W P 1-60

- 1-60 Early Cretaceous (Albian) ammonites from the Chitina Valley and Talkeetna Mountains, Alaska U. S. Geol Survey Prof. Paper 354-D, p. 87-114, illus., 1960
- 2-60. Ammonites of Early Cretaceous (Valanginian and Hauterivian) from the Pacific Coast States U. S. Geol Survey Prof Paper 334-F, p 167-228, illus., 1960

## INGENIERÍA CIVIL

- 1-60 Asismicidad en viviendas económicas, Cap 4 Ing Civil, v. 11, no 11, p 709-736, illus., Nov 1960



- 2-60 Elementos generales de la sismología, Cap 1 of Asismicidad en viviendas económicas Ing Civil, v 11, no. 9, p 539-561, illus, Sept 1960
- INGERSON, Earl See also MACKIN, J H 1-60
- 1-60 Estudios fundamentales de la Sub-división de Geoquímica y Petrología del U S. Geological Survey en apoyo de la Política Nacional de los Estados Unidos sobre minerales, in Internat Geol Cong, Mexico, Symposium de exploración geoquímica, Tomo 3 México, D G, p 711-725, 1960.
- INGHAM, Albert Irwin
- 1-60 Oil and gas frontiers in the East [United States] GeoTimes, v 4, no 6, p 14-16, 33, 34, Mar. 1960.
- INGHAM, Walter Norman
- 1-60. The Duncan Range iron deposits near Fort George, Quebec [abs] Canadian Mining Jour., v 81, no 4, p 110-111, Apr. 1960.
- INGLES, John C See ZIMMERMAN, J Bernard 1-60
- INGRAHAM, T R See WARNER, N A 1-60
- INGRAM, Blanche. See MILTON, Charles 4-60
- INGRAM, W. L
- 1-60 Kraemer oil field. California Oil Fields--Summ Operations Jan - June 1960, v 46, no 1, p 78-84, illus., 1960.
- INMAN, Douglas Lamar
- 1-60 (and FILLOUX, Jean) Beach cycles related to tide and local wind wave regime ]]Gulf of California, Mexico] Jour. Geology, v. 68, no 2, p. 225-231 incl. index map, profiles, and table, illus, Mar 1960.
- INNES, G. M See CANADA GEOL. SURVEY 45-60
- INNES, Morris James Sage See also BEALS, C S. 1-60
- 1-60 Gravity and isostasy in northern Ontario and Manitoba Dominion Observatory Ottawa Pub., v 21, no. 6, p. 263-338 incl index and geol. sketch maps, diagrams, and tables, 1960.
- INTERMOUNTAIN ASSOCIATION of PETROLEUM GEOLOGISTS
- 1-60. (and EASTERN NEVADA GEOLOGICAL SOCIETY, Boettcher, Jerome W, and Sloan, William W, editors) Guidebook to the geology of east central Nevada, 11th annual field conference, [September] 1960 Salt Lake City, Utah Geol. and Mineralog. Survey, 264 p incl. index and geol sketch maps, sections, correlation charts, diagrams, tables, and illus., also geol. and tectonic maps, section, and diagrams, 1960. Includes individual papers which are cited separately.
- INTERNATIONAL GEOLOGICAL CONGRESS, Mexico
- 1-60. Symposium de exploración geoquímica, Tomo 3 México, D.F., Internat Geol. Cong, 20th, p 477-725 p. incl. index, geol, and other sketch maps, sections, diagrams, and tables, 1960. Includes individual papers which are cited separately
- INTERNATIONAL GEOLOGICAL CONGRESS, Stratigraphic Commission
- 1-60 (HOFFSTETTER, Robert, chairman) Lexique stratigraphique international--V 5, Amérique Latine--Fasc. 2a, Amérique Centrale Paris, Centre Natl Recherche Sci., 368 p., geol. maps and section, 1960. Includes individual papers which are cited separately.
- IRANI, K.
- 1-60. (and SINHA, A. P B, and BISWAS, A. B.) Crystal distortion in spinels containing  $Mn^{3+}$  ions Physics and Chemistry Solids, v. 17, nos. 1-2, p. 101-111, illus., Dec. 1960.

## IRELAND

IRELAND, Herbert O.

- 1-60 Use of index property values of surficial materials [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1895-1896, Dec. 1960.

IRELAND, Hubert Andrew

- 1-60 Emendations to Upper Pennsylvanian arenaceous Foraminifera from Kansas Jour. Paleontology, v. 34, no. 6, p. 1217-1218, Nov. 1960.

IRONSIDE, R. See HEYDING, R. D. 1-60

IRVINE, Thomas Neil. See also CANADA GEOL. SURVEY 42-60

- 1-60. (and others) Lac des Mille Lacs area (west half), District of Thunder Bay, Ontario Ontario Dept. Mines Prelim. Map P 88, geol. map, scale 1 in. to 1/2 mi., 1960.

IRVINE, W. T. See CAMPBELL, Neil 1-60

IRWIN, William Porter

- 1-60 Relations between Abrams mica schist and Salmon hornblende schist in Weaverville quadrangle, California Art. 147 in U. S. Geol. Survey Prof. Paper 400-B, p. B315-B316 incl. sketch map, 1960
- 2-60 Geologic reconnaissance of the northern Coast Ranges and Klamath Mountains, California, with a summary of the mineral resources California Div. Mines Bull. 179, 80 p., illus. incl. geol. map, 1960
- 3-60. Geologic reconnaissance of the northern Coast Ranges and Klamath Mountains, California, with a summary of the mineral resources, in Geol. Soc. Sacramento, Ann. Field Trip, June 1960, p. 1-4, 1960

ISACHSEN, Yngvar William

- 1-60. Data pertaining to important non-silicate minerals, AGI Data Sheet 17 GeoTimes, v. 4, no. 6, p. 25-26, Mar. 1960.

ISENOR, N. R.

- 1-60. (and BARBER, R. C., and DUCKWORTH, H. E.) Some recent determinations of atomic masses in the strontium-zirconium region Canadian Jour. Physics, v. 38, no. 6, p. 819-823 incl. diagram and tables, June 1960.

ITO, Jun. See FRONDEL, Clifford 1-60, 2-60

IVES, J. D.

- 1-60. Former ice-dammed lakes and the deglaciation of the middle reaches of the George River, Labrador-Ungava Canada Dept. Mines and Tech. Surveys Geog. Br. Geog. Bull. 14, p. 44-70, illus., French translation, p. 70-88, 1960
- 2-60. The deglaciation of Labrador-Ungava--an outline Cahiers Géographie Québec, 4<sup>e</sup> année, no. 8, p. 323-343 incl. index and sketch maps, and illus., Apr.-Sept. 1960
- 3-60. Permafrost in central Labrador-Ungava Jour. Glaciology (Cambridge, England), v. 3, no. 28, p. 789-790, illus., Oct. 1960.

IVES, Robert E.

- 1-60. (and ELLS, Garland Delos) Recent Salina and Trenton discoveries reflect trend toward deeper formational drilling in Michigan basin [abs.] Am. Assoc. Petroleum Geologists Bull., v. 44, no. 7, p. 1251, July 1960.
- 2-60 New Trenton extensions boost Michigan production Oil and Gas Jour., v. 58, no. 32, p. 122-125 incl. sketch maps and table, Aug. 8, 1960.
- 3-60. Trenton-Black River formation developments in Michigan Interstate Oil Compact Comm. Comm. Bull., v. 2, no. 1, p. 79-86, illus., June 1960.

IVES, William, Jr.

- 1-60. (and RUNNELS, Russel Tyson) Lime raw materials in the Kansas City area Kansas State Geol. Survey Bull. 142, pt. 3, p. 123-148, illus., Sept. 1, 1960.
- 2-60 (and HILL, Walter Edward, Jr.) Occurrence and bleaching properties of some Kansas montmorillonite clays Kansas State Geol. Survey Bull. 142, pt. 4, p. 149-188, illus., Sept. 15, 1960.

IZETT, Glenn Arthur

- 1-60 (and MAPEL, William Jameson, and PILLMORE, Charles Lee) Early Cretaceous folding on the west flank of the Black Hills, Wyoming [abs.] Geol Soc America Bull, v 71, no 12, pt 2, p 2036, Dec 1960.

JABLONSKI, Leo A

- 1-60 Factual data for public-supply wells and selected irrigation wells in Monmouth County, New Jersey New Jersey Dept Conserv and Econ Devel, Div Water Policy and Supply Water Resources Circ 4, 29 p incl. map and tables, 1960

JACKSON, Everett Dale

- 1-60 X-ray determinative curve for natural olivine of composition Fo80-90 Art 197 in U. S Geol Survey Prof Paper 400-B, p. B432-B434 incl. diagram and table, 1960  
2-60 (and DINNIN, Joseph I, and BASTRON, Harry) Stratigraphic variation of chromite composition within chromitite zones of the Stillwater complex, Montana [abs.] Geol Soc America Bull, v 71, no 12, pt 2, p 1896, Dec 1960.

JACKSON, Garth D.

- 1-60. Belcher Islands, Northwest Territories Canada Geol Survey Paper 60-20, 13 p, illus incl geol maps, 1960

JACKSON, Marion LeRoy See DIXON, Joe Boris 1-60, GLENN, R C 1-60, HASHIMOTO, Isao 1-60

JACKSON, Wayne H See also DAVIS, Willard E 1-60

- 1-60 Depth soundings in Hebgen Lake, Montana, after the earthquake of August 17, 1959 Art 97 in U S Geol Survey Prof Paper 400-B, p B221-B223 incl sketch map and diagram, 1960

JACOBS, Donald G. See STRUXNESS, E G. 1-60

JACOBS, John Arthur See also RUSSELL, R. D 1-60

- 1-60. Continental drift Nature (London), v 185, no 4708, p 231-232, Jan 23, 1960  
2-60. Temperatures within the Earth's core Nature (London), v. 195, no 4712, p 521-522, Feb 20, 1960

JAEGGIN, R P See KOULOMZINE, Theodore 1-60

JAFFE, H H See NOTZ, K J 1-60

JAHNS, Richard Henry

- 1-60 Edwin Verne Van Amringe (1899-1956) Am Assoc Petroleum Geologists Bull, v 44, no 2, p 258-260, Feb. 1960.  
2-60. (and WRIGHT, Lauren Albert) Garlock and Death Valley fault zones in the Avawatz Mountains, California [abs.] Geol Soc America Bull, v 71, no 12, pt. 2, p. 2063-2064, Dec 1960  
3-60 Gem stones and allied materials, in Am Inst Mining, Metall, and Petroleum Engineers, Industrial minerals and rocks, p 383-441 incl. diagrams, tables, and illus, 1960

JAMBOR, John Leslie

- 1-60. Volborthite from British Columbia Am Mineralogist, v 45, nos 11-12, p 1307-1309 incl. tables, Nov -Dec 1960  
2-60 Vanadium-bearing interlava sediment from the Campbell River area, British Columbia [abs.] Canadian Mining Jour, v 81, no 10, p 133, Oct. 1960

JAMES, Alfred, 3d See CURTIS, Graham R 2-60

JAMES, Harold Lloyd

- 1-60 Problems of stratigraphy and correlation of Precambrian rocks with particular reference to the Lake Superior region Am Jour Sci, v. 258-A (Bradley Volume), p 104-114 incl sections and diagrams, 1960

## JAMES

JAMES, Laurence Beresford

- 1-60. (and BROWN, W A.) California's Franciscan formation as a foundation for dams and appurtenant structures [abs] California Assoc. Eng Geologists, 3d Ann Mtg, Berkeley, Oct 14-16, 1960, p 10 [1960].

JAMES, Roger See SCHWENDIMAN, L C. 1-60

JAMIESON, John Calhoun

- 1-60 (and GOLDSMITH, Julian Royce) Some reactions produced in carbonates by grinding Am. Mineralogist, v 45, nos. 7-8, p 818-827 incl tables, July-Aug 1960.

JANOVY, John See WORDEN, John A. 1-60

JANSONIUS, J See STAPLIN, Frank Lyons 1-60, 2-60

JANSEN, Raymond Ellsworth

- 1-60. The extent of Teays Lake [Ohio-West Virginia] West Virginia Acad. Sci. Proc. 1959, v. 31, p 47-48, Dec. 1960

JARRELL, Lewis Coleman

- 1-60 Take a second look at South Louisiana Oil and Gas Jour., v 58, no 20, p 220-222 incl. sketch map and tables, May 16, 1960.

JASTER, Marion Charlotte. See WITHINGTON, Charles Francis

JEFFERY, W. G

- 1-60. The geology of Campbell Chibougamau mine, Quebec [abs] Canadian Mining Jour., v 81, no 1, p. 94, Jan. 1960

JEFFORDS, Russell MacGregor

- 1-60. (and MILLER, T H.) Air brush for whitening fossils, and notes on photography Jour Paleontology, v. 34, no 2, p 275-276, illus, Mar. 1960.

JEFFREY, Lela M. See WHITEHOUSE, Ulysses Grant 1-60

J[effreys], H[arold]

- 1-60 [Beno Gutenberg, 1889-1960] Geol. Soc London Proc 1959-60, no 1582, p. 135-137, Oct 4, 1960

JELETZKY, Jurjiz Alexander

- 1-60. Youngest marine rocks in western interior of North America and the age of the Triceratops-beds, with remarks on comparable dinosaur-bearing beds outside North America Internat Geol Cong., 21st, Copenhagen, 1960, Rept, pt 5, p. 25-40 incl. correlation charts, 1960  
2-60 Age of the Triceratops beds and comparable dinosaur-bearing beds outside North America [abs] Geol Soc America Bull., v. 71, no. 12, pt 2, p 1896-1897, Dec. 1960.  
3-60. Uppermost Jurassic and Cretaceous rocks, east flank of Richardson Mountains between Stony Creek and lower Donna River, Northwest Territories, 106M and 107B (parts of) Canada Geol. Survey Paper 59-14, 31 p., illus incl. geol. sketch maps, 1960

JELINEK, Arthur J.

- 1-60 A late Pleistocene vertebrate fauna from Texas Jour Paleontology, v 34, no 5, p 933-939 incl tables, illus., Sept 1960

JENKINS, George Fredric

- 1-60. Asbestos, in Am Inst Mining, Metall, and Petroleum Engineers, Industrial minerals and rocks, p 23-53 incl. maps, diagrams, tables, and illus., 1960

JENKINS, Robert D. See GRAY, Henry Hamilton 1-60

JENNESS, Stuart Edward

- 1-60. Late Pleistocene glaciation of eastern Newfoundland Geol. Soc. America Bull., v 71, no. 2, p 161-179 incl geol. sketch maps, section and diagram, Feb. 1960

JENNEY, Charles Phillip

- 1-60 Geology and ore deposits of the Mattagami area, Quebec, Canada [abs] Geol Soc America Bull., v. 71, no 12, pt 2, p 1897, Dec 1960, Econ Geology, v. 55, no 6, p 1326, Sept -Oct 1960.

JENNI, Clarence M.

- 1-60. New minerals for California Gems and Minerals, no 268, p. 40, 95, Jan 1960.

JENNINGS, Charles William See also LYDON, P. A. 1-60

- 1-60. (and STRAND, Rudolph G., compilers) Geologic map of California, Ukiah sheet, Olaf P. Jenkins, ed. California Div. Mines, scale 1 250,000 (about 1 in to 4 mi ), with separate explanatory chart, 1960

JENNINGS, H. Y , Jr. See SWEENEY, S A. 1-60

JENSEN, Mead Le Roy. See also FIELD, C. W. 1-60, SPINKS, J. W. T. 1-60

- 1-60 Centenary of Waldemar Lindgren Econ. Geology, v. 55, preface, p iii-vii, 1960
- 2-60 (and NAKAI, Nobuyuki) Biogeochemistry of sulfur isotopes [abs] Geol Soc. America Bull., v 71, no 12, pt. 2, p 1897-1898, Dec. 1960

JEPSEN, Glenn Lowell

- 1-60. A New Jersey mastodon New Jersey State Mus Bull. 6, 2d ed , 20 p , illus , Feb. 1960

JERSIN, Arthur J.

- 1-60. Oil and gas conservation in Colorado, Chap 19 in Mineral resources of Colorado, 1st sequel Denver, Colorado Mineral Resources Board, p. 669-736 incl. diagrams and tables, 1960.

JESSEN, Frank Weldon See BROWN, Kermit Earl 1-60

JEWELL, G. K.

- 1-60. Recommended guides for slope design, Interstate Highway Project 1-64, Wayne and Cabell Counties, West Virginia, U.S A. Cong Panam. Mecánica Suelos y Cimentaciones, 1st, México, D. F, Sept 7-12, 1959, Mem , v 2, p. 821-840 incl diagrams and Spanish abs , 1960

JEWETT, John Mark

- 1-60. How major geologic features developed in Kansas World Oil, v 150, no. 1, p 119-124, 149 incl. geol , structure contour, tectonic, and oil and gas maps, and section, Jan. 1960.
- 2-60. (and GOEBEL, Edwin DeWayne) Underground storage of natural gas in Kansas Kansas State Geol Survey Oil and Gas Inv. 21, 18 p incl. index and geol sketch maps, section, and tables, 1960

JILLSON, Willard Rouse

- 1-60 Geology of the Goose Creek faults in Casey and Russell Counties, Kentucky [abs.] Geol Soc America Bull , v. 71, no 12, pt. 2, p. 2017, Dec. 1960
- 2-60. Geology of the Goose Creek Dome in Casey and Russell Counties, Kentucky Frankfort, Ky., Perry Publishing Co., 88 p., illus. incl geol. sketch map, June 8, 1960.
- 3-60. A bibliography of the Cumberland River valley in Kentucky and Tennessee--Citations of printed and manuscript sources touching upon its history, geology, cartography, coal, iron, salt, fluorspar, phosphate, clays, oil and gas, with annotations Frankfort, Ky., Perry Publishing Co., 46 p., Dec 15, 1960.

## JIMÉNEZ LÓPEZ

JIMÉNEZ LÓPEZ, Luis S. See TAVERA AMEZCUA, Eugenio 1-60

JODRY, Richard Louis

- 1-60 (and CAMPAU, Donald Edmund) Small pseudochitinous and resinous microfossils--New tools for subsurface geologist [abs.] Am. Assoc. Petroleum Geologists Bull , v 44, no. 6, p. 958, June 1960
- 2-60. (and CAMPAU, Donald Edmund) Small pseudochitinous and resinous microfossils--New tools for the subsurface geologist [abs.] Canadian Oil and Gas Industries, v. 13, no 4, p. 107, Apr 1960.
- 3-60 (and CAMPAU, Donald Edmund) Small pseudochitinous and resinous microfossils--new tools for the subsurface geologist [abs ] Am Assoc. Petroleum Geologists Rocky Mtn. Sec. Geol. Record 1960, p. 164 [1960].

JOESTING, Henry Rochambeau

- 1-60. (and CASE, James E ) Salt anticlines and deep-seated structures in the Paradox basin, Colorado and Utah. Art 114 in U S. Geol Survey Prof. Paper 400-B, p. B252-B256 incl. aeromagnetic, gravity, and sketch maps, 1960.

JOHANSSON, Folke Carl

- 1-60. Micropaleontology of the Wesley, Johns Valley and Atoka formations of the Ouachita Mountains of Oklahoma [abs ] Dissert Abs., v. 21, no. 3, p 595, Sept. 1960

JOHNS, William Davis. See ALLEN, Victor Thomas 1-60

JOHNS, Willis M.

- 1-60. Progress report on geologic investigations in the Kootenai-Flathead area, northwest Montana--Pt. 2, Southeastern Lincoln County Montana Bur. Mines and Geology Bull. 17, 52 p , illus. incl geol maps, July 1960

JOHNSON, John Herbert

- 1-60. (and TOUNG, George D.) Pamela east of the Frontenac axis in New York State [abs.]. Geol. Soc. America Bull , v 71, no 12, pt. 2, p 1898, Dec. 1960.

JOHNSON, Arnold Ivan. See MORRIS, Donald Arthur 1-60

JOHNSON, Arthur. See also WELD, B. A 1-60

- 1-60. Variations in surface elevations of the Nisqually Glacier, Mount Rainier, Washington [abs.]. Jour. Geophys Research, v. 65, no. 8, p. 2500, Aug. 1960.
- 2-60. Variation in surface elevation of the Nisqually Glacier, Mt. Rainier, Washington Internat Assoc. Sci Hydrology (Gentbrugge, Belgium) Bull. 19, p 54-60, illus., Sept. 1960

JOHNSON, C. V.

- 1-60. Madison slide subsurface exploration and observations, App. 10 in U S. Army Corps of Engineers, Madison River; Montana, report on flood emergency, Madison River slide--V. 2, Appendixes Omaha, Nebraska, U. S Army Corps of Engineers, p. X-1-X-10, diagrams, tables, and illus , Mar [Sept.] 1960

JOHNSON, Carlton Robert. See also GREENKORN, R. A. 1-60

- 1-60. (and GREENKORN, Robert Albert) Comparison of core analysis and drawdown test results from a water-bearing Upper Pennsylvanian sandstone of central Oklahoma [abs ] Geol. Soc America Bull , v 71, no. 12, pt 2, p 1898, Dec 1960.
- 2-60. Geology and ground water in the Platte-Republican Rivers watershed and the Little Blue River basin above Angus, Nebraska, with a section on Chemical quality of the ground water by R. Brennan U. S. Geol Survey Water-Supply Paper 1489, 142 p., illus , 1960.
- 3-60 Secondary recovery--A new challenge to geologists [abs ] Tulsa Geol. Soc Digest, v 28, p. 93, 1960.

## JOHNSON, Curtis Leonard

- 1-60. Microfossils of the Gregory shale member of the Pierre formation South Dakota Acad Sci Proc. 1959, v. 38, p. 49-52, Jan. 1960

JOHNSON, David C. See WALLACE, Stewart Raynor 1-60

## JOHNSON, David S

- 1-60. Lineaments and fracture traces, in Oil fields in the Burke County area, North Dakota--Geological, magnetic, and engineering studies North Dakota Geol. Survey Rept Inv 36, p. 28-37, illus., 1960.

JOHNSON, Fred L., Jr See AYRES, Gilbert H 1-60

## JOHNSON, Gerald Woodrow

- 1-60. Excavation with nuclear explosives California, Univ., Livermore, Lawrence Radiation Lab. Rept UCRL-5917, 28 p incl tables and diagrams, Nov. 1, 1960.  
 2-60. Industrial and scientific applications of nuclear explosions California, Univ., Livermore, Lawrence Radiation Lab. Rept UCRL-5840, 32 p. incl. tables and diagrams, Jan 19, 1960.  
 3-60. Application of nuclear explosions as seismic sources California, Univ., Livermore, Lawrence Radiation Lab Rept UCRL-6030-T, 49 p., illus., July 7, 1960  
 4-60 Peaceful nuclear explosions--Status and promise Nucleonics, v. 18, no. 7, p. 49-53 incl. diagrams, table, and illus., July 1960.

## JOHNSON, Hamilton M.

- 1-60 Duties of a logging co-ordinator in an operating company Geophysics, v 25, no. 4, p. 734-747 incl diagrams, Aug. 1960

JOHNSON, Henry Stanley, Jr See also ROBINSON, G. C 1-60

- 1-60 Underground storage of natural gas in South Carolina South Carolina State Devel. Board Div. Geology Geol. Notes, v. 4, no. 6, p 49-51, illus., Nov -Dec. 1960.

## JOHNSON, Jarl P.

- 1-60. A method for determining formation permeability from well log data Soc. Prof Well Log Analysts, 1st. Ann. Logging Symposium, Tulsa, Oklahoma, May 16-17, 1960, Trans., [9] p incl. diagrams and tables, paged separately, 1960

## JOHNSON, Jesse Harlan

- 1-60. (and KONISHI, Kenji) An interesting Late Cretaceous calcareous alga from Guatemala Jour Paleontology, v. 34, no 6, p. 1099-1105, illus., Nov. 1960.  
 2-60. Paleozoic Solenoporaceae and related red algae Colorado School Mines Quart., v. 55, no. 3, 77 p incl sketch maps, diagrams, tables, and illus., July 1960

JOHNSON, Karl Elwood. See also La SALA, A. M., Jr. 1-60

- 1-60. (and MASON, Robert A., and DeLUCA, Frank A.) Ground-water map of the Oneco quadrangle, Connecticut-Rhode Island, showing water-bearing formations and related ground-water data Rhode Island Water Resources Coordinating Board Ground-Water Map GWM 10, scale 1 24,000 (1 in. to 2,000 ft), with sections, 1960.

## JOHNSON, Neil O.

- 1-60. Foote Mineral Company's lithium mining operations at Kings Mountain, N. C Mines Mag., v 50, no. 4, p 11-16 incl. sketch maps, diagrams, and illus., Apr 1960.

## JOHNSON, Noye M.

- 1-60 Thermoluminescence in biogenic calcium carbonate Jour. Sed. Petrology, v. 30, no 2, p. 305-313 incl diagrams and tables, June 1960.

## JOHNSON

### JOHNSON, Ralph Gordon

- 1-60 Environmental interpretation of Pleistocene marine species Jour. Geology, v. 68, no. 5, p 575-576, Sept. 1960, discussion by J. W. Valentine and W. K. Emerson, v. 69, no. 5, p 616-618, Sept. 1961.
- 2-60. Models and methods for analysis of the mode of formation of fossil assemblages Geol. Soc. America Bull., v. 71, no. 7, p. 1075-1085 incl. diagrams and tables, July 1960
- 3-60. Pennsylvanian life assemblages, western Illinois [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1898-1899, Dec. 1960.

### JOHNSON, Robert Britten

- 1-60. Teaching geology by television--An effective method or a gimmick? [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1899, Dec. 1960.

### JOHNSON, Robert William, Jr.

- 1-60 (and BATES, Robert Glenn) Aeromagnetic and aeroradioactivity survey of the Concord quadrangle, North Carolina Art. 85 in U. S. Geol. Survey Paper 400-B, p. B192-B195 incl. aeromagnetic-geol and aeroradioactivity-geol maps, 1960
- 2-60. Basement magnetic and gravity anomalies in southeastern Kentucky [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 2017-2018, Dec. 1960.

### JOHNSON, Ross Byron

- 1-60. (and BALTZ, Elmer Harold, Jr.) Probable Triassic rocks along eastern front of Sangre de Cristo Mountains, south-central Colorado Am. Assoc. Petroleum Geologists Bull., v. 44, no. 12, p. 1895-1902 incl. sketch map and sections, Dec. 1960.
- 2-60. (and ROBERTS, Albert Eugene) Depositional environment of the coal-bearing formations of the Raton Mesa coal region, New Mexico and Colorado [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1899-1900, Dec. 1960.
- 3-60. Brief description of the igneous bodies of the Raton Mesa region, south-central Colorado, in Rocky Mtn. Assoc. Geologists, Guide to the geology of Colorado Denver, p. 117-120 incl. sketch map and illus., 1960.

### JOHNSTON, Derek

- 1-60. Industrial mineral exploration in Newfoundland Canadian Mining Jour., v. 81, no. 4, p. 91-95 incl. diagrams, Apr. 1960

### JOHNSTON, Frederick Joseph

- 1-60. Astrolabe Lake Area (West Half), in Cheesman, R. L., Summary report of geological surveys conducted in the Precambrian area of Saskatchewan, 1960 Regina, Saskatchewan Dept. Mineral Resources, Mines Br., Geology Div., p. 12-13 [1960].

### JOHNSTON, John Edward. See also TRUMBULL, J. V. A. 1-60

- 1-60. (and TRUMBULL, James Van Alen, and EATON, Gordon Pryor) The petroleum potential of the emerged and submerged Atlantic coastal plain of the United States Georgia Mineral Newsletter, v. 13, no. 2, p. 66-73, illus. incl. geol. maps, summer 1960.

### JOHNSTON, Paul McKelvey

- 1-60. Ground-water supplies in shale and sandstone in Fairfax, Loudoun, and Prince William Counties, Virginia U. S. Geol. Survey Circ. 424, 7 p., illus., 1960.

### JOHNSTON, William George

- 1-60. (and others) Atikwa-Caviar Lakes area, District of Kenora Ontario Dept. Mines Prelim. Geol. Map P.84, scale 1 in. to 1 1/2 mi. [1960].

### JOHNSTONE, Robert H. See SCHMIDT, Victor Edward 1-60

### JOINT COMMITTEE on INVERTEBRATE PALEONTOLOGY

- 1-60 (MOORE, Raymond Cecil, editor) Treatise on invertebrate paleontology--Pt. I, Mollusca 1 Lawrence, Kans., Geol. Soc. America and Univ.



Kansas Press, p 11-1351 incl. diagrams and illus., 1960. Contains individual papers which are cited separately

## JOKLIK, G F

- 1-60. The discovery of a copper-zinc deposit at Garon Lake, Quebec Econ Geology, v. 55, no 2, p. 338-353 incl. geol. sketch map, magnetic anomaly maps, and diagrams, Mar -Apr. 1960.

## JOLIVET, J.

- 1-60. Surveillance géophysique des volcans des Antilles françaises--Possibilité de prévision et de contrôle des éruptions Bull. Volcanol. (Naples, Italy), sér 2, tome 23, p 31-44, with discussion, 1960.

## JONAS, Edward Charles

- 1-60. (and ROBERSON, Herman Ellis) Particle size as a factor influencing expansion of the three-layer clay minerals Am. Mineralogist, v. 45, nos 7-8, p 828-838 incl. diagrams, July-Aug 1960.  
2-60 (and THOMAS, George L.) Hydration properties of potassium deficient clay micas, in Swinford, Ada, ed., Clays and clay minerals, V. 8 Natl. Conf. Clays and Clay Minerals, 8th, Norman, Okla, Oct 1959, Proc, p. 183-192 incl. diagrams, 1960. (Issued as Internat Earth Science Ser Mon 9 of Pergamon Press, New York.)

JONES, Alexander Gordon. See CANADA GEOL. SURVEY 1-60

## JONES, Cecil L, Jr.

- 1-60. An isopach, structural, and paleogeologic study of pre-Desmoinesian units in north central Oklahoma' Shale Shaker, v. 10, no. 5, p. 2-4, 6-20 incl. index and sketch maps, correlation chart, and discussion by J. T. Bado, Jan. 1960.

JONES, Chester Warren. See MORRIS, Donald Arthur 1-60JONES, Daniel H See STEVENS, Calvin Howes 1-60

## JONES, Daniel John

- 1-60 Ostracoda from the Central Arctic Basin [abs.] Geol Soc. America Bull., v. 71, no. 12, pt. 2, p 1900, Dec. 1960.

JONES, David Lawrence See also GRANTZ, Arthur 2-60

- 1-60. Lower Cretaceous (Albian) fossils from southwestern Oregon and their paleogeographic significance Jour. Paleontology, v. 34, no. 1, p 152-160 incl. index and geol sketch maps, illus., Jan 1960.  
2-60. Pelecypods of the genus *Pterotrignia* from the west coast of North America Jour Paleontology, v 34, no. 3, p 433-439 incl index map and chart, illus, May 1960.  
3-60. (and GRYC, George) Upper Cretaceous pelecypods of the genus *Inoceramus* from northern Alaska U. S. Geol. Survey Prof Paper 334-E, p. 149-165, illus., 1960.

## JONES, Douglas Epps

- 1-60. Alabama geology--a challenge [abs.]. Alabama Acad. Sci. Jour., v. 31, no 6, p 398-399, Oct. 1960.

## JONES, Eugene L.

- 1-60. Application of palynology to the study of Tertiary rocks of the Coastal Plain of Arkansas Arkansas Acad Sci. Proc., v. 14, p 47 incl. diagrams and tables, 1960.

## JONES, G. H S.

- 1-60 (and HALLETT, Archibald Cameron Hollis) The specific heat of crystalline quartz between 2° K and 4° K Canadian Jour. Physics, v. 38, no. 5, p. 696-700 incl. diagrams, May 1960

## JONES

JONES, Islwyn Winwaeloc

- 1-60. (and CLARK, Thomas Henry) Geology and petroleum possibilities of Quebec [abs.] Am. Assoc. Petroleum Geologists Bull., v. 44, no. 7, p. 1251, July 1960.

JONES, J. F.

- 1-60. Groundwater geology, Beaverlodge district, Alberta Research Council Alberta Prelim Rept. 59-2, 52 p., illus., 1960.

JONES, J. L. See FORRESTER, John Stanley 1-60

JONES, James Irvin

- 1-60. The significance of variability in Praeglobotruncana gautierensis (Brönniman), 1952, from the Cretaceous Eagle Ford group of Texas. Cushman Found. Foram. Research Contr., v. 11, pt. 3, p. 89-103, illus., July 1960.

JONES, Maurice Harry See FLECK, W. E. P. 1-60

JONES, Robert E.

- 1-60 Using electric-log evaluation in exploring Rocky Mountain petroleum traps--Pt. 1, Electric-log evaluation--Pt. 2. Oil and Gas Jour., v. 58, no. 29, p. 142-145 incl. sketch maps, July 18, 1960, no. 30, p. 294, 297-298 incl. sketch maps and table, July 25, 1960.  
2-60. Exploring for petroleum traps using Rocky Mountain electric log evaluation Soc. Prof. Well Log Analysts, 1st. Ann. Logging Symposium, Tulsa, Oklahoma, May 16-17, 1960, Trans., 16 p. incl. sketch maps, diagrams, and table, pagged separately, 1960

JONES, Waldo H.

- 1-60 The last Pleistocene age as seen here [S.C.]. Rocks and Minerals, v. 35, nos. 9-10, p. 454-459 incl. sections and illus., Sept.-Oct. 1960

JONES, Walter Bryan

- 1-60. Warrior Basin [Mississippi-Alabama] prospects are bright, exploration needed World Oil, v. 150, no. 7, p. 89-91 incl. index and structure contour maps and table, June 1960  
2-60. (and MacELVAIN, Robert C.) One hundred years of petroleum geology: Georgia Mineral Newsletter, v. 13, no. 1, p. 23-25, Spring 1960.

JONES, William Rich

- 1-60. (and PEOPLES, Joe Webb, and HOWLAND, Arthur Lloyd) Igneous and tectonic structures of the Stillwater complex, Montana U. S. Geol. Survey Bull. 1071-H, p. 281-340, illus. incl. geol. maps, 1960.

JOPLING, Alan V

- 1-60 Experimental study on the mechanics of bedding [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1900, Dec. 1960.

JORDAN, James N

- 1-60 (and CLEVEN, Merrill L.) Certain physiographic changes associated with the southeastern Alaska earthquakes [abs.] Alaskan Sci. Conf., 10th, Juneau, Aug. 25-28, 1959, Proc., p. 110-111, Dec. 1960.

JORDAN, Louise. See also BRANAN, C. B., Jr. 1-60, 2-60

- 1-60. (and ROWLAND, Tommy Lee) Mississippian rocks in northern Oklahoma [abs.]. Am. Assoc. Petroleum Geologists Bull., v. 44, no. 1, p. 129, Jan. 1960.  
2-60. Permian salt beds in Laverne Gas Area of Harper County, Oklahoma Oklahoma Geology Notes, v. 20, no. 2, p. 23-28, illus., Feb. 1960, erratum, no. 3, p. 75, Mar. 1960.  
3-60. Woodward County's gas fields Oklahoma Geology Notes, v. 20, no. 4, p. 83-89, illus., Apr. 1960.  
4-60 Oil and gas in Kingfisher County Oklahoma Geology Notes, v. 20, no. 12, p. 303-314, illus., Dec. 1960.

## JORGENSEN, Donald Gene

- 1-60. Possible oil and gas reservoirs associated with the Sioux Ridge [abs.] South Dakota Acad Sci. Proc 1959, v. 38, p. 33, Jan 1960
- 2-60. Geology and shallow ground water resources of the Missouri Valley between North Sioux City and Yankton, South Dakota South Dakota State Geol Survey Rept Inv. 86, 59 p., illus incl geol map, Nov 1, 1960.

## JORGENSEN, Neil

- 1-60. A beryl occurrence at Moody Mountain, Oxford County, Maine Rocks and Minerals, v 35, nos 11-12, p. 547-549 incl sketch map and illus , Nov.-Dec 1960.

## JOUBIN, Franc R.

- 1-60. Comments regarding the Blind River (Algoma) uranium ores and their origin Econ Geology, v 55, no 8, p. 1751-1756, Dec 1960

## JOYCE, James Wallace

- 1-60 The International Union of Geodesy and Geophysics Am. Geophys Union Trans , v. 41, no 1, p 22-25, Mar 1960.

## JOYNER, William B.

- 1-60. Heat flow in Pennsylvania and West Virginia Geophysics, v. 25, no 6, p 1229-1241 incl. index map, diagrams, and tables, Dec. 1960.

## JUÁREZ-BADILLO, Eulalio

- 1-60. Teoría de grietas de tensión Cong Panam. Mecánica Suelos y Cimentaciones, 1st, México, D. F., Sept. 7-12, 1959, Mem., v. 1, p. 65-83 incl diagrams, illus., English abs. and conclusions, discussion by R. J. Marsal, and reply by authors, 1960, English translation, v 3, p. 1097-1107 incl. diagrams and illus , 1960.

## JUDSON, S Sheldon, Jr

- 1-60 William Morris Davis [1850-1934]--An appraisal Zeitschr Geomorphologie (Berlin), Neue Folge, Band 4, Heft 3-4, p 193-201 incl. portrait, Dec 1960.

## JUMIKIS, Alfreds R.

- 1-60. Some American soil classification systems Cong Panam Mecánica Suelos y Cimentaciones, 1st, México, D. F., Sept 7-12, 1959, Mem., v 2, p. 791-820 incl tables, charts, Spanish abs. and conclusions, and discussion by J C Hiedra Lopez, 1960.

JUSSEN, Virginia M. See KING, Ruth Reece 1-60

## KACHADOORIAN, Reuben

- 1-60. Engineering and surficial geology of the Nenana-Rex area, Alaska U S Geol Survey Misc Geol. Inv Map I-307, scale 1 63,360 (1 in to 1 mi.), with text, 1960.
- 2-60. Engineering geology of the Katalla area, Alaska U. S. Geol. Survey Misc Geol. Inv Map I-308, scale 1 63,360 (1 in. to 1 mi.), with text, 1960
- 3-60 Engineering geology of the Chariot site near Cape Thompson, northwestern Alaska U. S. Geol. Survey Rept. TEI-753, p 19-37 incl tables, Jan. 1960.
- 4-60. (and others) Geologic investigations in support of Project Chariot in the vicinity of Cape Thompson, northwestern Alaska--Preliminary report U S Geol. Survey Rept TEI-753, 94 p incl illus , Jan 1960.
- 5-60. (and SAINSBURY, Cleo Ladell, and CAMPBELL, Russell Harper) Geologic factors proposed nuclear test near Cape Thompson, northwest Alaska [abs ] Alaskan Sci Conf , 10th, Juneau, Aug. 25-28, 1959, Proc , p 109-110, Dec 1960.

KAISER, Albert D., Jr. See TAGGART, Millard Seals, Jr 1-60KAMB, Walter Barclay. See also ALLEN, C R 1-60, 3-60

- 1-60. (and OKE, William C.) Paulingite, a new zeolite, in association with erionite and filiform pyrite Am Mineralogist, v. 45, nos. 1-2, p. 79-91 incl tables and illus , Jan -Feb 1960.

## KAMB

- 2-60. Accuracy of atomic positions in the zunyite structure *Acta Cryst.*, v 13, pt. 1, p. 24-27 incl. tables, Jan 1960.
- 3-60. The crystal structure of zunyite *Acta Cryst.*, v. 13, pt. 1, p. 15-24 incl diagrams and tables, Jan. 1960
- 4-60. (and DATTA, Sankar K) Crystal structures of the high-pressure forms of ice--ice III. *Nature (London)*, v. 187, no. 4732, p. 140-141, July 9, 1960

KANE, Martin Francis. See also ANDREASEN, G. E. 2-60, MABEY, D. R. 2-60, PAKISER, L. C., Jr 3-60

- 1-60 Terrain corrections using an electronic digital computer Art. 59 in *U. S. Geol. Survey Prof. Paper 400-B*, p. B132-B133, 1960.
- 2-60. Gravity study of the Rowe-Mora basin, New Mexico [abs.] *Washington Acad. Sci. Jour.*, v. 50, no 7, p 1, Nov. 1960.

## KANSAS GEOLOGICAL SOCIETY

- 1-60. (and OKLAHOMA GEOLOGICAL SOCIETY, and WICHITA UNIVERSITY) North-eastern Oklahoma, 25th field conference, September 1960, guidebook Wichita, Kans., 125 p., illus incl. geol map, 1960. Includes individual papers which are cited separately.

## KANSAS WATER RESOURCES BOARD

- 1-60. Preliminary appraisal of Kansas water problems--Upper Republican Unit *Kansas Water Resources Board State Water Plan Studies*, pt. A, sec. 6, 111 p. incl. illus, June 1960.
- 2-60. Preliminary appraisal of Kansas water problems--Lower Arkansas Unit *Kansas Water Resources Board State Water Plan Studies*, pt. A, sec. 4, 177 p, illus., Jan. 1960.
- 3-60. Preliminary appraisal of Kansas water problems--Walnut-Verdigris Unit *Kansas Water Resources Board State Water Plan Studies*, pt. A, sec. 5, 160 p, illus., June 1960.

KANWISHER, John Willis

- 1-60.  $p\text{CO}_2$  in sea water and its effect on the movement of  $\text{CO}_2$  in nature: *Tellus (Stockholm)*, v. 12, no 2, p. 209-215 incl. diagrams, May 1960.

KAPLAN, Ian R. See BAAS BECKING, Lourens Gerhard Marinus 1-60

KAPP, Hans E.

- 1-60. A comparison of the petrography of a Tertiary alkaline igneous complex in northeastern Greenland with the Monteregian Hills of eastern Canada [abs.] *Jour. Geophys. Research*, v. 65, no. 8, p 2501-2502, Aug. 1960.
- 2-60. Zur Petrologie der Subvulkane zwischen Mesters Vig und Antarctic Havn (Ost-Grønland) *Medd. om Grønland*, bind 153, nr. 2, 203 p incl. sketch maps and illus., 1960.

KAPP, Ronald Ormond

- 1-60. (and GOODING, Ansel Miller) Vegetational studies of interglacial (Sangamonian) soils and interstadial deposits in southeastern Indiana [abs.] *Geol. Soc. America Bull.*, v 71, no. 12, pt. 2, p. 2018, Dec. 1960.

KARLE, Isabella Lugoski. See HAUPTMAN, Herbert Aaron 1-60, SMITH, Joseph Victor 4-60

KARLE, Jerome. See HAUPTMAN, Herbert Aaron 1-60, SMITH, Joseph Victor 4-60

KARLSTROM, Thor Nels Vincent

- 1-60. The Cook Inlet, Alaska, glacial record and Quaternary classification Art 153 in *U. S. Geol. Survey Prof. Paper 400-B*, p B330-B332 incl. diagrams, 1960
- 2-60. Surficial deposits of Alaska. Art. 154 in *U. S. Geol. Survey Prof. Paper 400-B*, p B333-B335 incl. sketch map, 1960.

KARPOFF, Boris S See also NICKEL, E. H. 1-60

- 1-60 Holmquistite occurrences in the mining property of Quebec Lithium Corporation, Barraute [Quebec] Internat Geol. Cong., 21st, Copenhagen, 1960, Rept., pt. 17, p. 7-14 incl. tables and illus., 1960.

KARROW, Paul Frederick See also CANADA GEOL. SURVEY 27-60

- 1-60 The Champlain Sea and its sediments [abs.] Royal Soc. Canada Minutes Proc., 3d ser., v. 54, App. C, p. 39, 1960.

KASSNER, James Lyle

- 1-60. (and BENSON, Virgil M., and CREITZ, Ellis Erwin) Flame spectro-photometric determination of lithium in lithium minerals Anal. Chemistry, v. 32, no. 9, p. 1151-1153 incl. diagram and tables, Aug. 1960.

KATAYAMA, Nobuo

- 1-60. Genesis of uranium deposits in sedimentary rocks Internat. Geol. Cong., 21st, Copenhagen, 1960, Rept., pt. 15, p. 7-14 incl. table, 1960.

KAUFFMAN, Erle Galen

- 1-60 (and KESLING, Robert Vernon) An Upper Cretaceous ammonite bitten by a mosasaur [South Dakota] Michigan Univ. Mus. Paleontology Contr., v. 15, no. 9, p. 193-248, illus., July 21 [29], 1960.

KAUFFMAN, Marvin Earl See also PENNSYLVANIA GEOLOGISTS 1-60

- 1-60 Piedmont stratigraphy near the Susquehanna River, in Some tectonic and structural problems of the Appalachian Piedmont along the Susquehanna River Pennsylvania Geologists, 25th Ann. Field Conf., Oct. 1960, Guidebook, p. 23-26, 1960.
- 2-60. Stratigraphic relations of the Glenarm series, in Some tectonic and structural problems of the Appalachian Piedmont along the Susquehanna River Pennsylvania Geologists, 25th Ann. Field Conf., Oct. 1960, Guidebook, p. 49-52, 1960.

KAUFMAN, Warren John

- 1-60 The containment of radioactive wastes in deep geologic formations, in Disposal of radioactive wastes, V. 2 Internat. Atomic Energy Agency, Sci. Conf. on Disposal of Radioactive Wastes, Monaco, Nov. 16-21, 1959, Proc., v. 2, p. 533-546 incl. diagrams, with English, French, Russian, and Spanish abs., 1960.

KAUFMANN, Dale W. See BRIGGS, Louis I. 1-60, LANDES, Kenneth Knight 4-60, 5-60, RAMSDÉLL, Lewis R. 1-60

KAY, Marshall

- 1-60 Classification of the Ordovician system in North America Internat. Geol. Cong., 21st, Copenhagen, 1960, Rept., pt. 7, p. 28-33, 1960.
- 2-60. Paleozoic continental margin in central Nevada, western United States Internat. Geol. Cong., 21st, Copenhagen, 1960, Rept., pt. 12, p. 94-103 incl. index and geol. sketch maps and sections, 1960.
- 3-60. (and HAWKINS, W. H., and MIHM, R. J., and WIDMIER, J. W.) Paleozoic rocks of the Jack Creek Mountains, Northern Independence Range, Elko County, Nevada [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1900-1901, Dec. 1960.
- 4-60. Paleozoic rocks in the thrust nappes in Nevada, western U.S.A. [summary] Geol. Fören. Stockholm Forh., band 82, häfte 4, nr. 503, p. 611-612, Nov.-Dec. 1960.

KAYE, Clifford Alan

- 1-60 (and DUNLAP, John Crawford) Geology of the tunnels of the Caonillas and Caonillas Extension Projects, Puerto Rico Water Resources Authority, Utuado area, Puerto Rico Caribbean Geol. Conf., 2d, Mayagüez, Puerto Rico, Jan. 4-9, 1959, Trans., p. 91-95 incl. sketch maps, with discussion, 1960.
- 2-60. Surficial geology of the Kingston quadrangle, Rhode Island U.S. Geol. Survey Bull. 1071-I, p. 341-396, illus., 1960.

## KEACH

KEACH, John M.

- 1-60. Preliminary foraminiferal population count in upper Niobrara chalk. South Dakota Acad. Sci. Proc. 1959, v. 38, p. 54-56, Jan. 1960.

KEATING, Bernard Joseph

- 1-60. Massive sulphide deposits in Nova Scotia, in Symposium on the occurrence of massive sulphide deposits in Canada Canadian Mining and Metall. Bull., v. 53, no. 574, p. 81-87 incl. sketch map and illus., Feb., 1960, Canadian Inst. Mining and Metallurgy Trans., v. 63, p. 43-49, 1960.

KEECH, C. F.

- 1-60. (compiler) Hamilton County: Nebraska Univ. Conserv. and Survey Div., Nebraska Water Survey Test Hole Rept. 3, 53 p. incl. sketch map, diagram, and tables, Nov. 1960.

KEEFER, William Richard

- 1-60. Progressive growth of anticlines during Late Cretaceous and Paleocene time in central Wyoming Art. 105 in U. S. Geol. Survey Prof. Paper 400-B, p. B233-B236 incl. geol. sketch map and sections, 1960  
2-60. Magnitude of crustal movement and deposition during latest Cretaceous and early Tertiary time in the Wind River Basin, central Wyoming [abs.]. Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1901, Dec. 1960.

KEEN, Angeline Myra. See also KNIGHT, J. B. 2-60

- 1-60. A bivalve gastropod [Mexico]. Nature (London), v. 186, no. 4722, p. 406-407, Apr. 30, 1960.

KEENE, Jack R.

- 1-60. A mineralogical study of the Winnipeg formation [abs.] South Dakota Acad. Sci. Proc. 1960, v. 39, p. 173, Nov. 1, 1960.

KEHN, Thomas Mathew

- 1-60. Previously unrecognized Devonian rocks and a major fault between the Schuylkill and the Susquehanna River, Pennsylvania [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 2018-2019, Dec. 1960

KEISER, Hubert D.

- 1-60. Minor industrial minerals, in Am. Inst. Mining, Metall., and Petroleum Engineers, Industrial minerals and rocks, p. 605-621 incl. table, 1960.

KEITH, James. See ANDERS, Edward 2-60

KEITH, James Walter

- 1-60. New technique for use in carbonate core examination Am. Assoc. Petroleum Geologists Bull., v. 44, no. 2, p. 254-255, Feb. 1960.

KELLER, Allen S.

- 1-60. Structure behind the Bannock thrust, Idaho [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1902, Dec. 1960.

KELLER, George V.

- 1-60. Electrical properties of zinc-bearing rocks in Jefferson County, Tennessee. Art. 58 in U. S. Geol. Survey Prof. Paper 400-B, p. B128-B132 incl. diagrams and table, 1960.  
2-60. Physical properties of tuffs of the Oak Spring formation, Nevada Art. 183 in U. S. Geol. Survey Prof. Paper 400-B, p. B396-B400 incl. diagrams and tables, 1960  
3-60. (and PLOUFF, Donald F., and ZIETZ, Isidore) Geophysical studies in support of geologic mapping in the Twin Butte quadrangle, Ariz. [abs.] Mining Eng., v. 12, no. 12, p. 1249, Dec. 1960.  
4-60. Pulse-transient behavior of brine-saturated sandstones. U. S. Geol. Survey Bull. 1083-D, p. 111-129, illus., 1960.  
5-60. (and FRISCHKNECHT, Frank Conrad) Electrical resistivity studies on the Athabasca Glacier, Alberta, Canada [abs.] Oil in Canada, v. 12, no. 16, p. 34, Feb. 15, 1960.

KELLER, Walter David. See also PONDER, Herman 2-60

- 1-60 Acidity-alkalinity of surface drainage waters as related to underlying silicate rocks Jour. Sed. Petrology, v. 30, no 4, p 582-584, Dec. 1960.
- 2-60. Clay minerals in the Morrison formation on the Colorado Plateau [summary], in Swineford, Ada, 'ed., Clays and clay minerals Natl. Conf. Clays and Clay Minerals, 7th, Washington, D. C., Oct. 1958, Proc., p. 293-294, 1960. (Issued as Internat. Earth Science Ser Mon. 5 of Pergamon Press, New York.)

KELLEY, Danford Greenfield. See also CANADA GEOL SURVEY 48-60, NEALE, E. R. W. 1-60

- 1-60 Mississippian stratigraphy and geologic history of central Cape Breton Island, Nova Scotia [abs.] Canadian Mining Jour, v. 81, no. 3, p 127, Mar 1960.
- 2-60. Mississippian stratigraphy and geologic history of central Cape Breton Island, Nova Scotia [abs.] Massachusetts Inst. Technology Abs. Theses 1958-59, p. 169-170, 1960

KELLEY, Jane Holden See GREEN, F. Earl 1-60

KELLEY, Robert W.

- 1-60. A glacier passed this way Michigan Conserv., v. 29, no. 4, p 12-16, illus., July-Aug 1960
- 2-60 The glacial lakes surrounding Michigan Lansing, Michigan Geol. Survey Div., 21 p. incl sketch maps, diagrams, and chart, Dec. 1960.

KELLEY, Vincent Cooper

- 1-60. (and McCLEARY, John Thompson) Laramide orogeny in south-central New Mexico Am. Assoc Petroleum Geologists Bull., v 44, no 8, p. 1419-1420 incl index map and section, Aug. 1960.
- 2-60 Slips and separations Geol. Soc. America Bull, v. 71, no 10, p. 1545-1546, Oct. 1960
- 3-60 (and CLINTON, Nelson James) Fracture systems and tectonic elements of the Colorado Plateau New Mexico Univ Pubs. Geology, no. 6, 104 p., illus incl. maps under separate cover, 1960.

KELLOGG, Harold E.

- 1-60. Geology of the southern Egan Range, Nevada, in Geology of east central Nevada Intermountain Assoc. Petroleum Geologists, 11th Ann. Field Conf., 1960 Guidebook, p 189-197, geol sketch map and section, 1960

KELLY, Allan O.

- 1-60. Bernoulli's law applied to harbor entrances and bridges [abs.] Geol. Soc. America Bull, v 71, no. 12, pt 2, p 1902-1903, Dec. 1960

KELLY, George F.

- 1-60. United States section of petroleum geologic map of North America Tulsa, Okla., privately printed, 2 sheets, scales 1 6,000,000 (about 1 in. to 95 mi.), and 1 2,500,000 (about 1 in. to 40 mi.) [1960?]

KELLY, Sherwin Finch

- 1-60. The pillars of our prosperity and the impending drain on mineral resources Western Miner and Oil Rev., v 33, no. 10, p 72, 74, 76-78, 80-82, 85-87, Oct. 1960

KELLY, Thomas E.

- 1-60 Geology and oil occurrences in the Cook Inlet basin, Alaska [abs.] Geol Soc America Bull., v 71, no. 12, pt. 2, p 2086, Dec 1960

KELLY, T. E See MERRIAM, Daniel Francis 4-60

KELLY, William Crowley

- 1-60 (and DeNOYER, John M.) A heating micro-coil for the study of mineral fragments and heat-etching of polished sections Am. Mineralogist, v 45, nos 11-12, p 1185-1197 incl diagrams, tables, and illus., Nov-Dec 1960.

## KELLY

- 2-60 Contact printing of drill cores. *Econ. Geology*, v. 55, no. 6, p. 1303-1305 incl. illus., Sept.-Oct. 1960.

## KELSEY, C. H.

- 1-60 (and BARNES, William Howard) The crystal structure of metarosite. *Canadian Mineralogist*, v. 6, pt. 4, p. 448-466, illus., 1960.

## KENDALL, David L.

- 1-60. Ore deposits and sedimentary features, Jefferson City mine, Tennessee. *Econ. Geology*, v. 55, no. 5, p. 985-1003 incl. geol. sketch map, sections, and illus., Aug. 1960.

## KENDALL, Thomas A. See McGRAIN, Preston 2-60

## KENNA, B. T.

- 1-60. (and KURODA, Paul Kazuo) The ratio of induced fission vs. spontaneous fission in pitchblende and natural occurrence of radiochlorine. *Jour. Inorganic and Nuclear Chemistry (Oxford, England)*, v. 16, nos. 1-2, p. 1-7 incl. diagram and tables, Nov. 1960.

## KENNEDY, George Clayton. See also DICKSON, F. W. 1-60, PISTORIUS, C. W. F. T. 3-60, SOURIRAJAN, S. 1-60

- 1-60. (and LaMORI, Phillip N.) Fixed pressure points for calibration of high pressures [abs.] *Geol. Soc. America Bull.*, v. 71, no. 12, pt. 2, p. 1903, Dec. 1960.

- 2-60. (and KNOPOFF, Leon, and HIGGINS, Gary Hoyt) Attempt to determine the antiquity of ancient fired objects by examination of thermoluminescent glow curves [abs.] *Geol. Soc. America Bull.*, v. 71, no. 12, pt. 2, p. 1903-1904, Dec. 1960.

- 3-60. Phase relations of some rocks and minerals at high temperatures and high pressures. *Am. Geophys. Union Trans.*, v. 41, no. 2, p. 283-286 incl. diagrams, June 1960.

## KENNEDY, Richard R.

- 1-60. Geology between Pine (Bullion) Creek and Tenmile Creek, eastern Tushar Range, Piute County, Utah. *Brigham Young Univ. Research Studies Geology Ser.*, v. 7, no. 4, 58 p., illus. incl. geol. map, Feb. 1960.

## KENNEDY, Vance Clifford. See also GUDE, A. J., 3d 1-60

- 1-60. Origin of uranium-vanadium deposits in the Lisbon Valley area, San Juan County, Utah [abs.] *Geol. Soc. America Bull.*, v. 71, no. 12, pt. 2, p. 1904, Dec. 1960, *Econ. Geology*, v. 55, no. 6, p. 1339-1340, Sept.-Oct. 1960.

- 2-60. Geochemical studies in the Coeur d'Alene district, Shoshone County, Idaho, with a section on Geology by S. W. Hobbs. *U. S. Geol. Survey Bull.* 1098-A, p. 1-55, illus., 1960.

## KENNERLY, John B. See LANGENHEIM, R. L., Jr. 2-60

## KENNEY, Theodore Cameron. See WU, Tien Hsing 1-60

## KENT, Bion Huntley. See KINOSHITA, Willie T. 1-60

## KENT, Lois Margaret Schoonover. See BRANN, Doris C. 1-60

## KENT, Percy Edward

- 1-60. (and RUSSELL, William Allan Campbell) Evaporite piercement structure in the northern Richardson Mountains, Northwest Territories [abs.] *Oil in Canada*, v. 12, no. 16, p. 35, Feb. 15, 1960.

## KENTS, Paul

- 1-60. Three Forks and Bakken stratigraphy in west central Saskatchewan [abs.] *Am. Assoc. Petroleum Geologists Bull.*, v. 44, no. 6, p. 958, June 1960



- 2-60. Three Forks and Bakken stratigraphy in west central Saskatchewan. Am. Assoc. Petroleum Geologists Rocky Mtn Sec. Geol. Record 1960, p. 141-150 incl maps and illus. [1960].
- KEOSIAN, John  
1-60. On the origin of life Science, v. 131, no. 3399, p. 479-482, Feb 19, 1960.
- KERR, James William  
1-60. Paleozoic sequences in thrust slices of the Seetoya Mountains, Northern Independence Range, Elko County, Nevada [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1904-1905, Dec. 1960.  
2-60. Paleozoic sequences in thrust slices of the Seetoya Mountains, northern Independence Range, Elko County, Nevada [abs.] Dissert. Abs., v. 21, no. 5, p. 1163, Nov. 1960
- KERR, Paul Francis See also BASSETT, W. A. 2-60, BOLLIN, E. M. 1-60, DUNNE, J. A. 1-60, HOWARD, C. L. H. 1-60, HUANG, C. K. 1-60, MOLLOY, M. W. 1-60  
1-60. Memorial of Peggy-Kay Hamilton [1922-1959] Am. Mineralogist, v. 45, nos. 3-4, p. 399-402 incl portrait, Mar.-Apr. 1960.  
2-60. Memorial to Peggy-Kay Hamilton (1922-1959) Geol. Soc. America Proc. 1959, p. 133-135, portrait, Oct. 1960
- KESLER, Thomas Lingle  
1-60. Lithium raw materials, in Am. Inst. Mining, Metall., and Petroleum Engineers, Industrial minerals and rocks, p. 521-531 incl tables, 1960.
- KESLING, Robert Vernon. See also KAUFFMAN, E. G. 1-60  
1-60. Hydropores in edrioasteroids Michigan Univ. Mus. Paleontology Contr., v. 15, no. 8, p. 139-192, illus., Jan. 22, 1960.  
2-60. (and PLOCH, Richard A.) New Upper Devonian cypridinacean ostracod from southern Indiana Michigan Univ. Mus. Paleontology Contr., v. 15, no. 12, p. 281-292, illus., Sept. 2, 1960  
3-60. (and others) Middle Ordovician Black River ostracods from Michigan--Introduction and Pt. 1, The nature of *Macronotella* Michigan Univ. Mus. Paleontology Contr., v. 15, no. 13, p. 293-294 incl tables, illus., Nov. 22, 1960.  
4-60. Middle Ordovician Black River ostracods from Michigan--Pt. 2, *Levisulculus* and *Eurychilina* Michigan Univ. Mus. Paleontology Contr., v. 15, no. 15, p. 349-363, illus., Dec. 1, 1960  
5-60. Middle Ordovician Black River ostracods from Michigan--Pt. 3, *Platybolbina* Michigan Univ. Mus. Paleontology Contr., v. 15, no. 16, p. 365-385, illus., Dec. 12, 1960.
- KETNER, Keith B. See EMMONS, Richard Conrad 1-60
- KIELY, John Roche. See TERZAGHI, Karl
- KIERSCH, George Alfred  
1-60. Engineering geology of geothermal steam development [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1905, Dec. 1960  
2-60. Regional-areal investigations in engineering geology [abs.] California Assoc. Eng. Geologists, 3d Ann. Mtg., Berkeley, Oct. 14-16, 1960, p. 10 [1960].
- KILBURN, Lionel C.  
1-60. Nickel, cobalt, copper, zinc, lead and sulfur contents of some North American base-metal sulfide ores Econ. Geology, v. 55, no. 1, p. 115-137 incl diagrams and tables, Jan.-Feb. 1960.
- K[ILGORE], B[ruce] M.  
1-60. Kilauea Iki goes island building [Hawaii] Natl. Parks Mag., v. 34, no. 148, p. 7-8 incl. sketch map, Jan. 1960

## KILLIN

KILLIN, A. F.

- 1-60. Survey of the copper mining industry in Canada, 1959 Canada Dept. Mines and Tech. Surveys Mineral Resources Div. Mineral Inf Bull MR 47, 107 p incl. sketch map, diagram, and tables, 1960.

KIMBELL, Charles Lewis

- 1-60. Here's how oil hunters use the stomper as a seismic tool Oil and Gas Jour., v. 58, no. 38, p. 154-158 incl. diagrams and illus., Sept. 19, 1960.

KIMREY, Joel O.

- 1-60. Hydrology of a quarry-dewatering problem near New Bern, North Carolina [abs.] Geol Soc America Bull, v. 71, no. 12, pt. 2, p. 2019, Dec. 1960.  
2-60. Ground-water supply of Cape Hatteras National Seashore Recreational Area, Pt 2 North Carolina Dept. Water Resources Rept Inv. 2, 28 p., illus., 1960.

KINDSCHY, Robert R.

- 1-60. The Jordon Craters [Oregon] Our Public Lands, v. 10, no. 2, p. 8-9, illus., Oct. 1960.

KING, Charles R. See CURTIS, Graham R. 2-60

KING, Elizabeth Raymond

- 1-60. (and ZIETZ, Isidore) Determination of structure in the Appalachian basin by geophysical methods Art. 88 in U. S. Geol Survey Prof. Paper 400-B, p. B199-B202 incl. diagram, 1960.  
2-60. (and ZIETZ, Isidore) Thickness of sedimentary section in Appalachian basin [abs.] Am. Assoc. Petroleum Geologists Bull., v. 44, no. 7, p. 1251-1252, July 1960.

KING, Gayle

- 1-60. (and WHIDDEN, Helen L.) A comparative study of available titrimetric methods for uranium [abs.] Virginia Jour Sci., v 11, no. 4, p. 185, Sept. 1960.

KING, George Leslie, Jr.

- 1-60. The Edwards limestone of central Texas, in Cretaceous stratigraphy of the Grand and Black Prairies, east-central Texas Baylor Geol. Soc., Field Conf., Apr. 1960, Guidebook, p 82-87, 1960

KING, Norman Julius. See GORDON, Ellis Davis 1-60

KING, Philip Burke

- 1-60. The anatomy and habitat of low-angle thrust faults Am Jour. Sci., v 258-A (Bradley Volume), p. 115-125 incl. sections, 1960.  
2-60. (and FERGUSON, Herman W.) Geology of northeasternmost Tennessee, with a section on Description of the basement rocks by W. Hamilton U. S. Geol. Survey Prof. Paper 311, 136 p., illus incl. geol. maps, 1960.

KING, Robert Evans

- 1-60. Changing panorama of petroleum exploration [abs.]. Geol. Soc. America Bull, v. 71, no. 12, pt. 2, p 2100, Dec. 1960

KING, Ruth Reece

- 1-60. (and others) Bibliography of North American geology, 1957 U S. Geol. Survey Bull 1095, 531 p., 1960.

KINGERY, William David

- 1-60 On the metamorphism of snow Internat. Geol. Cong., 21st, Copenhagen, 1960, Rept, pt. 21, p 81-89 incl. diagrams and table, 1960.  
2-60. Applied glaciology--The utilization of ice and snow in Arctic operations. Jour. Glaciology (Cambridge, England), v 3, no. 27, p. 577-588, illus, and French and German abs., Mar. 1960.

KINGSTON, Benson Medill

1-60 The Rickels field, Stephens County, Texas, in Abilene Geol Soc , Geological contributions 1960, p. 104-113, illus., 1960.

KINNEAR, John C., Jr.

1-60. Gerald Jacob Ballmer [1897-1960] Mining and Metall. Soc. America Bull. 312, v. 53, no. 1, p 54-55, July 1960.

KINNEY, C. R. See POLANSKY, Theodore Stephen 1-60

KINNEY, Douglas Merrill. See HANSEN, Wallace Ray 2-60

KINOSHITA, Willie T.

1-60. (and KENT, Bion Huntley) Photogrammetric determination of elevations for regional gravity surveys Geophysics, v. 25, no. 2, p 445-450 incl. diagram, Apr. 1960

KINSER, Charles Alvin

1-60. Changes in thermogravimetric curves of calcium sulfate dihydrate with variations in the heating rate Art. 200 in U. S. Geol Survey Prof. Paper 400-B, p. B438-B439 incl. diagrams, 1960.

KIRKBY, Ruth A.

1-60. Stories in shale [Colorado] Gems and Minerals, no 275, p. 36, 38, 40 incl. illus., Aug 1960.

KIRKLAND, Douglas W. See ANDERSON, Roger Yates 1-60

KIRKLAND, S. J. T.

1-60 The George Lake area, in Cheesman, R. L., Summary report of geological surveys conducted in the Precambrian area of Saskatchewan, 1960 Regina, Saskatchewan Dept. Mineral Resources, Mines Br , Geology Div , p 18-19 [1960].

2-60. The Brûlé Lake Area, in Cheesman, R. L , Summary report of geological surveys conducted in the Precambrian area of Saskatchewan, 1960 Regina, Saskatchewan Dept Mineral Resources, Mines Br., Geology Div., p. 20-21 [1960]

KIRKPATRICK, Douglas H.

1-60 Structure and stratigraphy of the northern portion of the Grant Range, east-central Nevada, in Geology of east central Nevada Intermountain Assoc. Petroleum Geologists, 11th Ann Field Conf , 1960 Guidebook, p 186-188 incl. index map and section, 1960.

KISTLER, R W. See EVERNDEN, Jack Foord 1-60

KISTNER, Gustav A.

1-60. (and RIGGS, Francis Behn, Jr.) Electron-probe X-ray micro-analysis of micrometeorites [abs.] Jour Geophys. Research, v. 65, no. 8, p. 2503, Aug. 1960

KLEIN, George deVries

1-60. Sandstone petrogenesis of the Wolfville formation (Upper Triassic), Maritime Provinces, Canada [abs ] Geol Soc America Bull., v 71, no. 12, pt. 2, p. 1905-1906, Dec 1960.

KLEINHAMPL, Frank Joseph See also CORNWALL, H. R. 1-60, 2-60, FROELICH, A. J 1-60

1-60. (and KOTEFF, Carl) Botanical prospecting for uranium in the Circle Cliffs area, Garfield County, Utah U. S. Geol Survey Bull. 1085-C, p. 85-104 incl diagram and tables, also geol map and illus., 1960

KLEINKOPF, Merlin Dean

1-60. Spectrographic determination of trace elements in lake waters of northern Maine Geol Soc. America Bull., v. 71, no 8, p 1231-1241 incl spectrographic anomaly maps and tables, Aug. 1960.

## KLEINPELL

KLEINPELL, Robert Minssen

- 1-60. Principles of biostratigraphy [abs.] Tulsa Geol. Soc. Digest, v. 28, p. 92, 1960.
- 2-60. Principles of biostratigraphy Alberta Soc Petroleum Geologists Jour , v 8, no. 4, p. 136-137, Apr 1960

KLEMIC, Harry See STERN, Thomas Whital 1-60

KLINE, Mary-Cornelia. See ADAMS, John A S. 3-60

KLINFELTER, Theron Albert

- 1-60 Lightweight aggregates, in Am. Inst. Mining, Metall., and Petroleum Engineers, Industrial minerals and rocks, p 487-495 incl. diagram and tables, 1960

KLING, Stanley A.

- 1-60 Permian fusulinids from Guatemala Jour. Paleontology, v. 34, no 4, p. 637-655 incl geol. sketch map, sections, and diagrams, illus., July 1960.

KLINGE, Hans See also DURR, Fritz 1-60, 2-60

- 1-60. Los suelos negros (Tierra Negra) sobre la Serie Superior de los estratos de San Salvador (El Salvador, C. A.) Ciencia, v. 20, nos. 1-2, p 29-34, tables, with German summary, Feb 25, 1960.
- 2-60. Die Boden El Salvadors, Zentralamerika. Neues Jahrb. Geologie u. Paläontologie Monatsh. (Stuttgart, Germany), Jahrg. 1960, Heft. 9, p. 404-416, illus., Sept. 1960.

KLINGER, Frederick Lindsley

- 1-60. Geology and ore deposits of the Soudan Mine, St. Louis County, Minnesota [abs.]: Dissert Abs., v. 20, no 11, p. 4369-4370, May 1960.

KLINGSBERG, Cyrus

- 1-60. (and ROY, Rustum) Solid-solid and solid-vapor reactions and a new phase in the system Mn-O Am. Ceramic Soc. Jour , v 43, no. 12, p. 620-626 incl. diagrams and tables, Dec. 1, 1960.

KLUG, Harold Philip. See MASER, Morton 1-60

KLUG, M. F See MOULDER, Edward Arlo 1-60

KLUGMAN, Michael Anthony See also BLOOM, D N. 1-60

- 1-60. Laramie anorthosite [abs ] Geol. Soc. America Bull., v. 71, no. 12, pt 2, p 1906, Dec 1960.
- 2-60. Laramie anorthosite [Wyoming], in Rocky Mtn. Assoc. Geologists, Guide to the geology of Colorado Denver, p. 223-227 incl geol. sketch map, 1960
- 3-60. Doncaster area, electoral districts of Terrebonne and Montcalm Quebec Dept. Mines Geol. Surveys Br. Geol. Rept. 94, 25 p., illus., 1960, also French ed.

KNEBEL, George Moses

- 1-60. Bela Hubbard [1890-1959] Geophysics, v. 25, no. 3, p. 707-712 incl. portrait, June 1960.

KNECHTEL, Maxwell McMichael

- 1-60. (and HOSTERMAN, John Wallace) Bloating clay in Miocene strata of Maryland, New Jersey and Virginia Art. 29 in U. S. Geol. Survey Prof. Paper 400-B, p. B59-B62 incl. index map and diagrams, 1960.

KNIGHT, D. K. See BENNETT, P. T. 1-60, CURTISS, Robert Eugene 2-60

KNIGHT, Jack William

- 1-60. (and HANNON, Norbert Michael, Jr ) Geologic correlation applications of pressure measurements [abs.] Canadian Oil and Gas Industries, v. 13, no. 4, p. 106-107, Apr. 1960.

KNIGHT, James Brookes, 1888-1960

- 1-60. (and YOCHELSON, Ellis Leon) Monoplacophora, in Joint Comm Invertebrate Paleontology, Treatise on invertebrate paleontology--Pt. 1, Mollusca 1 Lawrence, Kans, Geol. Soc. America and Univ. Kansas Press, p 177-184 incl. illus., 1960.
- 2-60. (and others) Systematic descriptions [Archaeogastropoda], in Joint Comm. Invertebrate Paleontology, Treatise on invertebrate paleontology --Pt. 1, Mollusca 1 Lawrence, Kans., Geol. Soc. America and Univ. Kansas Press, p 1169-1310 incl. illus., 1960.
- 3-60. (and others) Supplement--Paleozoic and some Mesozoic Caenogastropoda and Opisthobrancia, in Joint Comm Invertebrate Paleontology, Treatise on invertebrate paleontology--Pt. 1, Mollusca 1 Lawrence, Kans, Geol. Soc. America and Univ. Kansas Press, p 1310-1331 incl. illus., 1960.

KNIGHT, Larry See CHILINGAR, George Varos 1-60, 3-60

KNIGHT, Samuel Howell

- 1-60. Cross-lamination and local deformation in the Casper sandstone, southeast Wyoming, in Rocky Mtn. Assoc. Geologists, Guide to the geology of Colorado Denver, p 228-229 incl. diagrams, 1960
- 2-60. Relief map of portions of western Wyoming, southeastern Idaho, and northeastern Utah, in Overthrust belt of southwestern Wyoming and adjacent areas Wyoming Geol. Assoc., 15th Ann. Field Conf, 1960, Guidebook, p 11, 1960.

KNIPPING, Hans Dieter

- 1-60. Late Paleozoic orogeny--North Yukon [abs] Canadian Oil and Gas Industries, v. 13, no 4, p 106, Apr. 1960

KNOP, Osvald

- 1-60 Occurrence of the phase among chalkogenides [abs] Acta Cryst., v. 13, pt 12, p 1021, Dec 1960

KNOPF, Adolph

- 1-60 Analysis of some recent geosynclinal theory Am. Jour. Sci, v. 258-A (Bradley Volume), p. 126-136, 1960.
- 2-60. Measuring geologic time Georgia Mineral Newsletter, v. 13, no. 2, p 76-84, tables, reprinted, summer 1960, (originally published 1957)
- 3-60. Louis Valentine Pirsson, November 3, 1960-December 8, 1919 Natl Acad. Sci. Biog. Mem., v 34, p 228-248, portrait, 1960

KNOPOFF, Leon See also KENNEDY, G. C. 2-60

- 1-60. (and MacDONALD, Gordon J F.) Models for acoustic loss in solids Jour. Geophys Research, v 65, no. 7, p. 2191-2197 incl. diagrams, July 1960.
- 2-60. Earth tides as a triggering mechanism for earthquakes [abs.] Jour Geophys Research, v. 65, no 8, p 2503-2504, Aug 1960.
- 3-60. (and MacDONALD, Gordon J F.) An equation of state for the core of the earth Royal Astron Soc Geophys Jour (London), v 3, no. 1, p 68-77 incl diagrams, Mar. 1960.
- 4-60. (and GILBERT, Freeman) First motions from seismic sources Seismol Soc America Bull., v. 50, no 1, p 117-134 incl. diagrams, Jan 1960.

KNOWLES, David Martin See GASTIL, Russell Gordon 2-60, 3-60

KNOWLES, Doyle Blewer

- 1-60. (and READE, Harold Leslie, Jr., and SCOTT, John C.) Geology and ground-water resources of Montgomery County, Alabama, with special reference to the Montgomery area--Basic data Alabama Geol Survey Bull. 68, pt. B, 493 p incl tables and hydrol. map, 1960

KNUTSON, Carroll Field See CAVANAUGH, R. J. 1-60

## KO

KO, R.

- 1-60. (and WEILER, M. R.) Determination of thorium in uranium ores General Electric Co., Hanford Atomic Products Operation, Richland Washington, Rept. HW-66221, 14 p., tables, Sept. 26, 1960.

KOCH, B. Eske

- 1-60. (and PEDERSEN, K. Raunsgaard) Geological map of Atanikerdluk and environs Medd. om Grønland, bind 162, nr. 4, 31 p., illus. incl. geol. map, 1960, reprinted as Copenhagen Univ. Mus. Minéralogie et Géologie Commun. Géol. 96, 1960, Grønlands Geol. Undersøgelse Bull. 23, 1960.

KOCH, George Schneider, Jr

- 1-60. (and LINK, Richard F.) Zoning of metals in two veins of the Frisco mine, Chihuahua, Mexico Internat. Geol. Cong., 21st, Copenhagen, 1960, Rept., pt. 16, p. 192-199 incl. sections, 1960.

KOENIG, John Waldo

- 1-60. Bibliography of the geology of Missouri, 1959 Rolla, Missouri Div. Geol. Survey and Water Resources, 44 p., 1960.

KOENIG, Karl Joseph

- 1-60 Bridger formation in the Bridger basin, Wyoming, in Overthrust belt of southwestern Wyoming and adjacent areas Wyoming Geol. Assoc., 15th Ann. Field Conf., 1960, Guidebook, p. 163-168 incl. geol. sketch map and sections, 1960

KOESTER, Edward Albert

- 1-60. Renewed search for oil is planned in Jamaica World Oil, v. 150, no. 5, p. 174, 177-178, 181-182 incl. sketch maps and table, Apr. 1960.

KOHOUT, Francis Anthony

- 1-60. Cyclic flow of salt water in the Biscayne aquifer of southeastern Florida. Jour. Geophys. Research, v. 65, no. 7, p. 2133-2141 incl. sketch map and diagrams, July 1960.
- 2-60. Flow pattern of fresh and salt water in the Biscayne aquifer of the Miami area, Florida Internat. Assoc. Sci. Hydrology (Gentbrugge, Belgium) Pub. 52, p. 440-448 incl. sketch map, diagrams, and French abs., 1960.

KOIDE, Minoru. See GOLDBERG, Edward D. 2-60, LAL Devendra 1-60

KOIZUMI, Mitsue

- 1-60. (and ROY, Rustum) Zeolite studies--[Pt.] 1, Synthesis and stability of the calcium zeolites Jour. Geology, v. 68, no. 1, p. 41-53 incl. diagrams and tables, Jan. 1960.

KOLB, Charles Rudolph

- 1-60. Physical properties and engineering characteristics of Mississippi loess [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1906, Dec. 1960.

KOLLAR, F. See RUSSELL, R. Doncaster 2-60

KOLOSÁRY, Gabriel

- 1-60. The phylogenetic classification of the Madreporarian corals Jour. Paleontology, v. 34, no. 5, p. 1051-1053 incl. diagram and tables, Sept. 1960.

KONISHI, Kenji. See JOHNSON, J. Harlan 1-60, WRAY, John Lee 1-60

KONIZESKI, Richard L. See ROHRER, Willis Lee 1-60

KOPP, Otto Charles

- 1-60. (and HARRIS, Lawrence Alvin, and CLARK, Grady Wayne) Hydro-thermal conversion of muscovite to kalsilite and an iron-rich mica [abs.]: Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1907, Dec. 1960

KOPPE, Edwin F.

- 1-60. Coal--A petrographic approach Pennsylvania Geol. Survey, 4th ser., Bull M42, 35 p., illus., 1960.

KORNFELD, Joseph Alton

- 1-60 Cotton Valley discoveries spur deep pay search in East Texas basin World Oil, v. 150, no. 4, p. 69-71 incl. index map and table, Mar. 1960.  
2-60. How to choose eastern Oklahoma datum planes World Oil, v. 151, no. 1, p. 124, 126-127, 130-131 incl. sketch map and sections, July 1960.  
3-60. First Cambrian oil sparks western Nebraska exploration World Oil, v. 151, no. 2, p. 78-83 incl. index and sketch maps, sections, chart, and table, Aug. 1, 1960.  
4-60. Las Animas Arch [Colorado-Kansas]--Promising oil and gas frontier. World Oil, v. 151, no. 4, p. 87-92 incl. index and structure contour maps, section, and table, Sept. 1960.  
5-60. Rocky Mountain four-basin report [Wyoming]--Part 1. World Oil, v. 151, no. 7, p. 99-104 incl. index and isopach maps and section, Dec. 1960.  
6-60. Selected parameters for correlation with  $K_2O$  and  $TiO_2$  content of high-silica outcrop samples from some Lower Pennsylvanian sandstones of the Eastern Interior basin [abs.]. Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1907-1908, Dec. 1960.

KORNICKER, Louis Sampson

- 1-60. Methods of measuring the internal volume of shells. Jour. Paleontology, v. 34, no. 3, p. 595-596 incl. diagrams and tables, May 1960.  
2-60. Resources of the sea [abs.]. Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 2100-2101, Dec. 1960.  
3-60. (and WISE, Charles D) Some environmental boundaries of a marine ostracode [Texas]. Micropaleontology, v. 6, no. 4, p. 393-398, illus., Oct. 1960.

KOSANKE, Robert Max

- 1-60. (and others) Classification of the Pennsylvanian strata of Illinois. Illinois State Geol. Survey Rept. Inv. 214, 84 p., illus., 1960.

KOSCHMANN, Albert Herbert, 1896-1962

- 1-60. (and BERGENDAHL, Maximilian Hilmar) Stratigraphy and structure of the Precambrian metamorphic rocks in the Tenmile Range, Colorado. Art. 113 in U. S. Geol. Survey Prof. Paper 400-B, p. B249-B252 incl. index and geol. sketch maps and section, 1960.  
2-60. Mineral paragenesis of Precambrian rocks in the Tenmile Range, Colorado. Geol. Soc. America Bull., v. 71, no. 9, p. 1357-1370 incl. index and geol. sketch maps and tables, illus., Sept. 1960  
3-60. Kokomo mining district, in Rocky Mtn. Assoc. Geologists, Guide to the geology of Colorado Denver, p. 154-155, condensed, 1960, originally published 1946.  
4-60. Cripple Creek district, in Rocky Mtn. Assoc. Geologists, Guide to the geology of Colorado. Denver, p. 185-187 incl. geol. sketch map, condensed 1960, originally published 1949.

KOSTER, F.

- 1-60. The Thainka Lake Area (West Half), in Cheesman, R. L., Summary report of geological surveys conducted in the Precambrian area of Saskatchewan, 1960 Regina, Saskatchewan Dept. Mineral Resources, Mines Br., Geology Div., p. 16-17 [1960].

KOSTUIK, John

- 1-60. (and De BASTIANI, Mario J.) Denison mine operation at Elliot Lake [Ontario] Mining Eng., v. 12, no. 12, p. 1250-1256 incl. sketch maps, diagrams, and illus., Dec. 1960.

KOTEFF, Carl. See KLEINHAMPL, Frank Joseph 1-60, TUTTLE, Curtis Randall 1-60

KOTTLOWSKI, Frank Edward. See also ROSWELL GEOL. SOC. 1-60

- 1-60. (and FOSTER, Roy Woodrow) Ancient shore-line sedimentary rocks

## KOTTLOWSKI

- of Permian age, northern Pedernal Hills, New Mexico [abs.] Geol Soc. America Bull., v 71, no 12, pt. 2, p. 1908-1909, Dec 1960
- 2-60. Geology and coal deposits of the Switz City quadrangle, Greene County, Indiana. U. S. Geol Survey Coal Inv. Map C-41, scale 1 24,000 (1 in. to 2,000 ft.), with sections and text, 1960
- 3-60 Depositional features of the Pennsylvanian of south-central New Mexico, in Northern Franklin Mountains, southern San Andres Mountains, with emphasis on Pennsylvanian stratigraphy Roswell Geol Soc., Field Trip, Nov. 1960, Guidebook, p. 96-130 incl. index and geol. sketch maps, sections, table, and illus., 1960.
- 4-60 Summary of Pennsylvanian sections in southwestern New Mexico and southeastern Arizona New Mexico Bur. Mines and Mineral Resources Bull. 66, 187 p, illus. incl. geol maps, 1960.
- 5-60. Geologic research in New Mexico during 1959 New Mexico Bur. Mines and Mineral Resources Circ 56, 44 p., 1960.
- 6-60. Reconnaissance geologic map of Las Cruces thirty-minute quadrangle New Mexico Bur Mines and Mineral Resources Geol Map 14, scale 1 126,720 (1 in. to 2 mi.), with section, 1960

KOULOMZINE, Theodore. See also GEOFFROY, P. R. 1-60

- 1-60. (and JAEGBIN, R. P ) Discovery of the iron ore deposit of the Mount Wright Iron Mines Company Limited [Quebec] [abs ] Canadian Mining and Metall. Bull., v 53, no. 575, p 194, Mar. 1960

KOVAR, Anton J. See KREMP, Gerhard Otto Wilhelm 1-60, 3-60

KOVER, A. N.

- 1-60 Photogeologic map of the Chaco Canyon-2 quadrangle, McKinley County, New Mexico U S. Geol Survey Misc Geol Inv Map I-315, scale 1 62,500 (about 1 in. to 1 mi.), 1960.

KRAMER, Harry P See KRONER, Robert Charles 1-60

KRAMER, James Richard See McGRATH, P. H. 1-60

KRANCK, Ernst Håkan

- 1-60. (and OJA, R. V ) Experimental studies of anatexis Internat. Geol Cong., 21st, Copenhagen, 1960, Rept., pt. 14, p 16-29 incl diagrams, tables, and illus., 1960.
- 2-60. Geological problems in the Precambrian Canada Geologi, v. 12, no. 9-10, p 107-108, Otaniemi, Finland, Nov 29, 1960.
- 3-60 Gypsum dome tectonics [Northwest Territories] [abs.] Oilweek, v. 10, no. 49, p 27, Jan 23, 1960

KRANCK, Svante Hakan. See also CANADA GEOL. SURVEY 29-60

- 1-60. Chemical petrology of metamorphic iron formations and associated rocks in the Mount Reed area in northern Quebec [abs ] Massachusetts Inst. Technology Abs Theses 1958-59, p. 170-171, 1960

KRATCHMAN, Jack. See NININGER, Robert D. 1-60

KRAUSE, Dale C.

- 1-60. Submarine geology near Guadalupe Island [abs ] Geol Soc America Bull., v. 71, no. 12, pt 2, p. 1909, Dec. 1960.

KRAUSKOPF, Konrad

- 1-60. (and BEISER, Arthur) The physical universe New York, N. Y., McGraw-Hill Book Co., Inc., 536 p, illus., 1960

KRAUSS, Robert W.

- 1-60 (and GALLOWAY, Raymond A.) The role of algae in the formation of beach rock in certain islands of the Caribbean Louisiana State Univ. Coastal Studies Inst. Caribbean Beach Studies Tech Rept 11, pt E, 49 p, illus., Mar. 20, 1960.

KRAVIG, Clarence N. See REYNOLDS, C H 1-60



## KREMP, Gerhard Otto Wilhelm

- 1-60 (and KOVAR, Anton J.) The interpretation of Tertiary swamp types in brown coal Art. 38 in U. S. Geol. Survey Prof. Paper 400-B, p. B79-B81 incl. table, 1960.
- 2-60 (and FREDERIKSEN, N. O.) Recognition of coal lithotypes by palynological methods Internat. Comm. Coal Petrology, 1st Internat. Cong. Coal Petrology, Heerlen, Netherlands, Sept 1958, Proc , nr 3, p 181-183 incl. diagrams, 1960.
- 3-60. (and AMES, H. Tate, and KOVAR, Anton J.) Triassic and Jurassic spores and pollen, V. 9 of Catalog of fossil spores and pollen University Park, Palynol. Labs , Dept. Geology Coll Mineral Industries, Pennsylvania State Univ., 163 p , illus., 1960

## KRETZ, Ralph A.

- 1-60 Pegmatites in granitic rocks, northern Manitoba, Canada [abs.] Geol. Soc. America Bull , v. 71, no. 12, pt. 2, p 1909-1910, Dec. 1960
- 2-60. Geological observations in northern New Quebec--34 and 35 (parts of) Canada Geol Survey Paper 60-12, 17 p incl geol. map, 1960

## KRIEGER, Robert Albert. See also HACKETT, O. M. 1-60, MOULDER, E. A. 1-60

- 1-60 (and HENDRICKSON, Gerth Edison) Some effects of waste oil-field brines on the streams, wells, and springs of the upper Green River basin, Kentucky [abs.] Geol Soc. America Bull., v. 71, no 12, pt. 2, p 2019, Dec. 1960.
- 2-60 (and HENDRICKSON, Gerth Edison) Effects of Greensburg oilfield brines on the streams, wells, and springs of the upper Green River basin, Kentucky Kentucky Geol Survey, ser. 10, Rept. Inv. 2, 36 p., illus. incl. geol. map, 1960.

## KRIGER, K. P. See KRIGER, N. I 1-60

## KRIGER, N. I.

- 1-60. (and KRIGER, K. P.) Oproiskhozhdeni lessa Severnoy Ameriki (obzor literatury) Akad Nauk SSSR, Komm. Izucheniyyu Chetvertichnogo Perioda Byull 25, p. 71-91 incl sketch maps, diagrams, and chart, 1960.

## KRINOV, E L.

- 1-60 Principles of meteoritics New York, N. Y., Pergamon Press, 535 p., illus., translated from Russian by I Vidzunas, translation edited by H. S. Brown, 1960 (Issued as Internat Ser Mons. Earth Sci., V. 7).

## KRINSLEY, Daniel R. See DAVIES, William Edward 2-60

## KRINSLEY, David

- 1-60. Orientation of orthoceracone cephalopods at Lemont, Illinois. Jour. Sed. Petrology, v. 30, no. 2, p. 321-323 incl. diagram, June 1960.
- 2-60 Magnesium, strontium, and aragonite in the shells of certain littoral gastropods [California and Washington] Jour. Paleontology, v. 34, no. 4, p 744-755 incl. diagrams and tables, July 1960
- 3-60. Trace elements in the tests of planktonic foraminifera [Atlantic Ocean] Micropaleontology, v 6, no. 3, p 297-300, table, July 1960

## KRISHNASWAMY, D. S.

- 1-60 (and AMSTUTZ, Gerhardt Christian) Geology of the Decaturville disturbance in Missouri [abs.] Geol. Soc. America Bull , v 71, no. 12, pt 2, p. 1910, Dec 1960, Econ. Geology, v. 55, no. 6, p 1340, Sept -Oct. 1960

## KROMMELBEIN, Karl

- 1-60. Los primeros fósiles marinos (Trigonidae, Lamellibr.) procedentes de la formación Cayetano del oeste de Cuba Soc. Cubana Historia Nat. Mem., v. 25, no. 1, p. 43-49, illus., translated from German by A. de la Torre Y Callejas, Dec. 10, 1960, originally published 1956.

## KRONER, Robert Charles.

- 1-60. (and BALLINGER, Dwight G., and KRAMER, Harry P ) Evaluation of

## KRONER

laboratory methods for analysis of heavy metals in water. Am. Water Works Assoc. Jour , v. 52, no 1, p. 117-124, incl diagrams and table, Jan. 1960

KRUEGER, Harold W. See also QUIRKE, T T , Jr 1-60

1-60. Geochronometry by radioactive decay [abs.] Geol. Soc. America Bull , v. 71, no. 12, pt. 2, p. 2101, Dec. 1960.

KRUEGER, Max Leon

1-60. Occurrence of natural gas in the western part of Green River Basin, in Overthrust belt of southwestern Wyoming and adjacent areas. Wyoming Geol. Assoc , 15th Ann Field Conf , 1960, Guidebook, p 194-209 incl. index and tectonic map, isopach and structure contour maps, and sections, 1960.

KRUMBEIN, William Christian. See also SLOSS, L L. 4-60

1-60. The "geological population" as a framework for analysing numerical data in geology. Liverpool and Manchester Geol Jour (Liverpool, England), v 2, pt 3, p 341-368, illus , Jan 6, 1960.

2-60 Stratigraphic maps from data observed at outcrop Yorkshire Geol. Soc Proc. (Hull, England), v 32, pt. 4, no. 15, p. 353-366, illus , Oct. 18, 1960.

KRUSHENSKY, Richard Dean

1-60. Geology of the volcanic features of the Hurricane Mesa area, Park County, Wyoming [abs.] Dissert. Abs., v 21, no. 4, p 849-850, Oct. 1960.

KRYNINE, Dimitri Pavlovitch. See LAMBE, Thomas William 1-60

KRYNINE, Paul Dimitri

1-60 On the antiquity of "sedimentation" and hydrology (with some moral conclusions) Geol Soc. America Bull., v. 71, no 11, p 1721-1725, Nov. 1960.

2-60. Evolution of sedimentary rocks [abs.] Geol Soc. America Bull , v. 71, no 12, pt. 2, p. 1910-1911, Dec. 1960.

3-60 Primeval Ocean [abs.] Geol. Soc America Bull., v 71, no. 12, pt. 2, p. 1911, Dec 1960.

KUBOTA, Joe

1-60 (and WHITTIG, Lynn D.) Pádzols in the vicinity of the Nelchina and Tazlina Glaciers, Alaska Soil Sci. Soc. America Proc , v. 24, no. 2, p. 133-136, illus , Mar.-Apr. 1960

KUELLMER, Frederick John

1-60 Compositional variation of alkali feldspars in some intrusive rocks near Globe-Miami, Arizona. Econ. Geology, v. 55, no. 3, p. 557-562 incl. geol. sketch map, diagram, and table, May 1960

2-60. X-ray intensity measurements on perthitic materials--[Pt ] 2, Data from natural alkali feldspars Jour. Geology, v 68, no. 3, p 307-323 incl diagrams and tables, May 1960

KUENEN, Philip Henry

1-60 Experimental abrasion--[Pt ] 4, Eolian action Jour Geology, v. 68, no. 4, p 427-449 incl. diagrams and tables, illus., July 1960.

2-60. Experimental abrasion of sand grains. Internat Geol. Cong., 21st, Copenhagen, 1960, Rept., pt 10, p. 50-53, 1960.

3-60. Sand Sci. Am., v. 202, no. 4, p 94-110 incl. diagrams and illus , Apr. 1960.

KUIPER, Edward

1-60. Sediment transport and delta formation [Saskatchewan] Am Soc. Civil Engineers Proc., v 86, paper 2371, Jour Hydraulics Div., no HY 2, pt. 1, p. 55-68, illus., Feb. 1960.

KULBICKI, Georges See GRIM, Ralph Early 2-60

- KULLERUD, Gunnar. See also MORIMOTO, Nobu 1-60, 2-60, 3-60, YUND, R. A. 1-60  
 1-60. (and DONNAY, Gabrielle, and DONNAY, Joseph Désiré Hubert) A second find of euhedral bornite crystals on barite Am. Mineralogist, v 45, nos. 9-10, p 1062-1068 incl sketch map, diagram, and illus, Sept.-Oct. 1960.  
 2-60. (and YUND, Richard Allen) Cu-S system [abs] Geol. Soc. America Bull, v 71, no. 12, pt. 2, p 1911-1912, Dec. 1960
- KULP, John Laurence. See also AULT, W. U. 1-60, CATANZARO, E. J. 1-60, COBB, J. C. 1-60, ECKELMANN, W. R. 1-60, ERICKSON, G. P. 1-60, GIFFIN, C. E. 1-60, LONG, A. 1-60, SILVERMAN, A. J. 1-60, WAMPLER, J. M. 1-60  
 1-60. The geological time scale Internat. Geol. Cong., 21st, Copenhagen, 1960, Rept., pt. 3, p 18-27 incl charts and tables, 1960  
 2-60. (and ECKELMANN, Frank Donald) Metamorphic events in the southern Appalachian Mountains [abs.] Geol. Soc. America Bull, v 71, no. 12, pt. 2, p 1912, Dec. 1960.
- KUME, Jack. See CARLSON, Clarence G. 1-60
- KUMMEL, Bernhard See also TEICHERT, Curt 1-60  
 1-60. Meekoceras fauna--An appraisal of its composition and correlation [abs.] Geol. Soc. America Bull., v 71, no. 12, pt. 2, p 1912, Dec. 1960  
 2-60. The Triassic of southwestern Montana, in West Yellowstone--Earthquake area Billings Geol. Soc., 11th Ann. Field Conf., Sept. 1960, [Guidebook] p 233-238 incl isopach maps and sections, 1960
- KUNIN, Robert  
 1-60. Elements of ion exchange New York, N. Y., Reinhold Publishing Corp., 164 p incl. diagrams, tables, and illus, 1960.
- KUNKEL, Clair M.  
 1-60. Economic geology of the south ore body, Pine Creek mine [California] [abs.] Mining Eng., v. 12, no. 7, p 666, July 1960
- KUNKEL, Fred  
 1-60. (and UPSON, Joseph Edwin, 2d) Geology and ground water in Napa and Sonoma Valleys, Napa and Sonoma Counties, California U. S. Geol. Survey Water-Supply Paper 1495, 252 p, illus incl. geol. map, 1960.
- KUNKEL, Robert Paul  
 1-60. Permian stratigraphy in the salt anticline region of western Colorado and eastern Utah, in Geology of the Paradox Basin fold and fault belt Four Corners Geol. Soc., 3d Field Conf., 1960, [Guidebook] p 91-97, illus, 1960
- KUNO, Hisashi  
 1-60. High-alumina basalt Jour. Petrology (Oxford, England), v 1, no. 2, p 121-125 incl sketch maps, diagrams, and tables, June 1960
- KUNTH, Peter-Olaf See HINZ, Wilhelm 1-60
- KUNTZE, R. A. See FLECK, W. E. P. 1-60
- KUNZE, George William See NELSON, L. A. 2-60
- KUPFER, Donald Harry  
 1-60. Problems of fault nomenclature Am. Assoc. Petroleum Geologists Bull., v. 44, no. 4, p. 501-505 incl. diagrams and table, Apr. 1960.  
 2-60. Thrust faulting and chaos structure, Silurian Hills, San Bernardino County, California Geol. Soc. America Bull., v. 71, no. 2, p 181-214 incl. index maps, sections, and diagrams, also geol. maps and structure sections, Feb. 1960.  
 3-60. Pegmatite-granite relationships in the Calamity Peak area, Black

## KUPFER

Hills, South Dakota, U.S.A. Internat. Geol. Cong., 21st, Copenhagen, 1960, Rept., pt. 17, p. 77-93 incl index and geol sketch maps and sections and illus., 1960.

### KUPSCH, Walter Oscar

1-60 Radiocarbon-dated organic sediment near Herbert, Saskatchewan Am. Jour. Sci., v. 258, no. 4, p. 282-292 incl. diagrams, geol sketch map, and chart, Apr 1960

### KURODA, Paul Kazuo. See also KENNA, B. T. 1-60

1-60. Nuclear fission in the early history of the Earth Nature (London), v. 187, no. 4731, p. 36-38, illus., July 2, 1960

### KURTZ, Edwin Bernard, Jr.

1-60. (and TUCKER, Henry, and LIVERMAN, James L.) Reliability of identification of fossil pollen as corn Am. Antiquity, v. 25, no. 4, p. 605-606 incl table, Apr 1960.

### KURTZ, Vincent Ellsworth

1-60 Stratigraphy and paleontology of the Elvins formation, Southeast Missouri [abs.] Dissert. Abs., v. 21, no. 3, p. 595, Sept. 1960

### KUSHIRO, Ikuro

1-60 Si-Al relation in clinopyroxenes from igneous rocks Am. Jour. Sci., v. 258, no. 8, p. 548-554 incl diagrams, Oct. 1960

### LACABANNE, Washington David

1-60. Porosity-permeability characteristics of sedimentary rocks Minnesota Acad. Sci. Proc. 1957-58, v. 25-26, p. 270-280 incl. diagrams, 1960.

### LaCHAPELLE, Edward R.

1-60 Post-IGY glacier research on Mount Olympus [Washington] [abs.] Jour. Geophys. Research, v. 65, no. 4, p. 1315, Apr. 1960  
2-60. Recent glacier variations in western Washington [abs.] Jour. Geophys. Research, v. 65, no. 8, p. 2505, Aug 1960

### LACHENBRUCH, Arthur Herold See also GREENE, G. W. 1-60

1-60. Thermal contraction cracks and ice wedges in permafrost Art. 186 in U. S. Geol. Survey Prof. Paper 400-B, p. B404-B406 incl diagrams and illus., 1960.  
2-60. Contraction-crack polygons. Art. 187 in U.S. Geol. Survey Prof. Paper 400-B, p. B406-B409 incl diagrams and illus., 1960.  
3-60. (and GREENE, Gordon W., and MARSHALL, B. Vaughn) Geothermal studies at Ogotoruk Creek, AEC Project Chariot Test Site, northwestern Alaska [abs.]. Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 2087, Dec. 1960  
4-60. (and GREENE, Gordon W.) Preliminary report of geothermal studies at the Ogotoruk Creek Chariot site, northwestern Alaska U. S. Geol. Survey Rept. TEI-753, p. 55-62 incl. diagrams, Jan. 1960  
5-60. The contraction theory of ice-wedge polygons [abs.] Alaskan Sci. Conf., 10th, Juneau, Aug. 25-28, 1959, Proc., p. 111-112, Dec. 1960

### LaCOSTE, Lucien Jean Batiste See NETTLETON, Lewis Lomax 1-60, THOMPSON, Lloyd G. D. 1-60

### LACKEY, Charles. See McGOOKEY, Donald Paul 2-60

### LACY, Willard Carleton

1-60. Geology of the Dunchurch area, Ontario, Canada Geol. Soc. America Bull., v. 71, no. 11, p. 1713-1717 incl index map and tables, also geol. map and sections, Nov 1960

### LADD, Harry Stephen

1-60 Origin of the Pacific island molluscan fauna Am. Jour. Sci., v. 258-A (Bradley Volume), p. 137-150 incl. sketch maps, 1960

- LADELL, Joshua  
1-60. (and SPIELBERG, Nathan) Laue spectrometer for multichannel x-ray spectrochemical analysis. *Rev. Sci. Instruments*, v. 31, no. 1, p 23-29 incl. diagrams, Jan. 1960.
- LADOO, Raymond Bardeen  
1-60. Wollastonite, in *Am. Inst. Mining, Metall., and Petroleum Engineers, Industrial minerals and rocks*, p. 897-899, 1960  
2-60. Abrasives, in *Am. Inst. Mining, Metall., and Petroleum Engineers, Industrial minerals and rocks*, p. 1-21 incl. tables, 1960.
- LAGANÁ, Tito. See also ZOPPI BRACCI, Luigi 3-60  
1-60. Observaciones sobre la actividad de los volcanes Santiago (Masaya) y Cerro Negro (León) Nicaragua Servicio Geol. Nac. Bol 4, p. 7-12, illus., 1960.  
2-60. El Tungsteno y el Molibdeno de Macuelizo Nicaragua Servicio Geol. Nac Bol 4, p. 13-16, sketch maps, 1960
- LaGANZA, Richard F.  
1-60. Paragenetic relationships of deuteric minerals in Triassic dolerite near New Haven, Connecticut Neues Jahrb. Mineralogie Abh (Stuttgart, Germany), Band 94, Festband Ramdohr, 1. Hälfte, p 559-563 incl. diagram, and German abs., June 1960
- LAI, Ming G. See WEISS, Herbert V. 1-60
- LAKE, Richard N.  
1-60. The Mesabi and its minerals [Minnesota] *Earth Sci.*, v. 13, no 6, p 209-212 incl. illus., Dec. 1960.
- LAKIN, Hubert William See HUFF, Lyman Coleman 1-60
- LAL, Devendra  
1-60 (and GOLDBERG, Edward D., and KOIDE, Minoru) Cosmic-ray-produced silicon-32 in nature. *Science*, v. 131, no. 3397, p 332-337 incl diagrams and tables, Feb. 5, 1960.
- La LONDE, Ronald Edward. See WELLS, Ralph Gordon 1-60
- LAMAR, John Everts. See WHITE, William Arthur 3-60
- LAMB, I, Mackenzie  
1-60. Complex primitives--The red alga group *Nat History*, v. 69, no. 3, p. 16-25 incl illus., Mar. 1960.
- LAMBE, Thomas William  
1-60. Compacted clay--structure *Am. Soc Civil Engineers Trans.* 1960, v 125, pt. 1, p 682-717, illus., with discussions by D. H Trollope and others, slightly revised 1960, originally published 1958.
- LaMOREAUX, Philip Elmer. See also NEWTON, J. G. 1-60, TOULMIN, L D., Jr. 1-60  
1-60. Ground-water resources of the South--a frontier of the nation's water supply. *U. S. Geol. Survey Circ.* 441, 9 p., illus., 1960.  
2-60 (and TOULMIN, Lyman Dorgan, Jr.) *Geology and ground-water resources of Wilcox County, Alabama* Alabama Geol Survey County Rept. 4, 280 p., illus incl. geol map, 1959 [1960].  
3-60. (and POWELL, William Jenner) *Stratigraphic and structural guides to the development of water wells and well fields in a limestone terrane [Ala.]* Internat. Assoc. Sci. Hydrology (Gentbrugge, Belgium) Pub. 52, p 363-375 incl. geol and structure sketch maps, diagrams, table, and French abs., 1960.  
4-60. (and MAXEY, George Burke) *Ground water* *Am Geophys. Union Trans.*, v. 41, no. 2, p. 311-314 incl. sketch map, June 1960

## LaMORI

LaMORI, Phillip N. See CHRISTIE, John McDougall 1-60, KENNEDY, George Clayton 1-60

LANCASTER, Jane

- 1-60. Northwestern Canadian Shield--A geographic study with special reference to mineral resources and industries [abs.] Geol Soc. America Bull , v. 71, no. 12, pt 2, p. 2101-2102, Dec. 1960.

LANCE, John Franklin See also HEINDL, L. A. 1-60

- 1-60. Stratigraphic and structural position of Cenozoic fossil localities in Arizona Arizona Geol. Soc Digest, v 3, p 155-159 incl index map, Mar. 1960.

LAND, Paul E.

- 1-60. Garrison City Gas field California Oil Fields--Summ. Operations July-Dec. 1959, v. 45, no 2, p. 38-40, illus , 1960.  
2-60. San Emidio Nose oil field California Oil Fields--Summ. Operations Jan -June 1960, v. 46, no 1, p 52-56, illus., 1960.

LANDAUER, Joseph K. See BUTKOVICH, T. R. 1-60

LANDER, James F.

- 1-60. (and MALEY, Richard P.) Seismicity of the Great Plains in relation to regional geologic structure [abs ]. Geol Soc America Bull., v. 71, no. 12, pt. 2, p. 2037, Dec. 1960.

LANDES, Kenneth Knight

- 1-60. Ubiquity of petroleum Am. Assoc Petroleum Geologists Bull., v. 44, no 8, p 1416-1419, Aug. 1960.  
2-60. (and others) Petroleum resources in basement rocks Am. Assoc. Petroleum Geologists Bull , v. 44, no 10, p. 1682-1691 incl sketch maps and sections, Oct 1960  
3-60. Chemical and metallurgical limestone in northern and northeastern States and Ontario [abs.] Mining Eng., v. 12, no. 12, p 1243, Dec. 1960  
4-60. Salt deposits of the United States, Chap 5 of Sodium chloride--The production and properties of salt and brine, Kaufmann, D. W., ed. New York, N. Y., Reinhold Publishing Corp., p. 70-95, illus , 1960  
5-60. The geology of salt deposits, Chap. 4 of Sodium chloride--The production and properties of salt and brine, Kaufmann, D. W., ed. New York, N Y , Reinhold Publishing Corp., p. 28-69, illus., 1960.

LANDIS, Edwin Robert. See also ELSTON, D P. 1-60

- 1-60 Uranium content of ground and surface waters in a part of the central Great Plains U S Geol. Survey Bull 1087-G, p. 223-258 incl. index map and tables, geol map, 1960.

LANDISMAN, Mark G. See SATÔ, Yasuo 1-60

LANDSBERG, Hans H. See SCHURR, Sam H. 1-60

LANE, Bernard

- 1-60. The Ely limestone in the vicinity of Moorman Ranch, Nevada, in Geology of east central Nevada Intermountain Assoc. Petroleum Geologists, 11th Ann. Field Conf., 1960 Guidebook, p. 114-116 incl. section, 1960.

LANE, Charles Wallace

- 1-60 Geology and ground-water resources of Kingman County, Kansas Kansas State Geol Survey Bull. 144, 174 p , illus incl geol. map, Mar. 1960.

LANE, Kenneth Stacy

- 1-60. (and FEHRMAN, Rollie Gregg) Tuttle Creek Dam [Kansas] of rolled shale and dredged sand Am Soc Civil Engineers Proc , v. 86, paper 2681, Jour. Soil Mechanics and Found. Div , no. SM 6, pt. 1, p 11-34 incl. sketch map, section, diagrams, and illus , Dec 1960.

LANG, Robert Campbell, 3d

- 1-60. Western limits of Oil Creek sand in southern Oklahoma and northern Texas [abs] Am. Assoc. Petroleum Geologists Bull., v. 44, no. 1, p. 129, Jan. 1960

LANG, Solomon Max

- 1-60. (and BIERSCHENK, William H., and ALLEN, William Burrows) Hydraulic characteristics of glacial outwash in Rhode Island Rhode Island Water Resources Coordinating Board Hydrol Bull 3, 38 p., illus., 1960.

LANGBEIN, Walter B. See also LEOPOLD, L. B. 3-60

- 1-60. The salinity and hydrology of closed lakes [abs] Jour Geophys. Research, v. 65, no. 5, p. 1635, May 1960

LANGE, Arthur L.

- 1-60 Geometrical basis for cave interpretation, in Moore, G. W., ed., Origin of limestone caves--A symposium with discussion Natl. Speleol. Soc Bull., v. 22, pt. 1, p. 77-84, illus., Jan 1960.

LANGENHEIM, Ralph Louis, Jr. See also CANADA GEOL. SURVEY 41-60, CHURKIN, M., Jr. 1-60, STENSAAS, L. 1-60

- 1-60. (and SMILEY, Charles J., and GRAY, Jane) Cretaceous amber from the Arctic Coastal Plain of Alaska Geol Soc America Bull., v. 71, no. 9, p. 1345-1356 incl index map and section, Sept 1960.

- 2-60. (and others) Paleozoic section in the Arrow Canyon Range, Clark County, Nevada [abs.]. Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 2064, Dec. 1960.

- 3-60 (and TISCHLER, Herbert) Mississippian and Devonian paleontology and stratigraphy, Quartz Spring area, Inyo County, California California Univ Pubs. Geol. Sci., v. 38, no. 2, p. 89-150, illus., Nov 23, 1960.

- 4-60 (and PECK, Joseph Howard, Jr) La formation de Peers Spring dans le Pioche district, Nevada Cahiers Géol, no. 56, p. 537-548, illus, incl geol sketch map, with English abs, Seyssel, France, Sept. 1959 [May 30, 1960]

- 5-60. (and HILL, John D., and WAINES, Russell H.) Devonian stratigraphy of the Ely area [Nevada], in Geology of east central Nevada Intermountain Assoc Petroleum Geologists, 11th Ann. Field Conf, 1960 Guidebook, p. 63-71 incl index map, sections, and correlation chart, 1960.

- 6-60 Early and Middle Mississippian stratigraphy of the Ely area [Nevada], in Geology of east central Nevada Intermountain Assoc. Petroleum Geologists, 11th Ann Field Conf., 1960 Guidebook, p. 72-80 incl. sketch map, sections, and chart, 1960.

- 7-60. (and others) Preliminary report on the geology of the Ely No 3 Quadrangle, White Pine County, Nevada, in Geology of east central Nevada Intermountain Assoc. Petroleum Geologists, 11th Ann Field Conf., 1960 Guidebook, p. 148-156 incl. geol. sketch map and sections, 1960.

LANGFORD, Fred F.

- 1-60. Levack township and the northern part of Dowling township, District of Sudbury Ontario Dept. Mines Prelim. Geol. Map P 91, scale 1 in. to 1/4 mi [1960].

LANGSTON, Wann, Jr

- 1-60. A hadrosaurian ichnite [Alberta] Canada Natl. Mus. Nat History Paper 4, 9 p, illus, June 15, 1960.

- 2-60. The vertebrate fauna of the Selma formation of Alabama--Pt. 6, The dinosaurs Fieldiana Geology Mem., v. 3, nos 5-6, p. 315-360, illus, Aug. 19, 1960

LANGWAY, Chester C, Jr

- 1-60. Snow studies on the inland ice of North Greenland [abs] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1912-1913, Dec 1960.

## LANKFORD

LANKFORD, Robert R

- 1-60. (and SHEPARD, Francis Parker) Facies interpretations in Mississippi delta borings Jour Geology, v. 68, no 4, p. 408-426 incl index map, sections, and tables, illus., July 1960

LAPHAM, Davis Mortimer

- 1-60. Photomicrography of the Cornwall magnetite ore body, Cornwall, Pennsylvania [abs.] Geol Soc. America Bull., v 71, no. 12, pt 2, p. 1913, Dec 1960, Econ Geology, v 55, no. 6, p 1334, Sept -Oct. 1960.  
2-60 Geology of the Cedar Hill serpentine quarry, in Some tectonic and structural problems of the Appalachian Piedmont along the Susquehanna River Pennsylvania Geologists, 25th Ann. Field Conf., Oct 1960, Guide-book, p 35-38, 1960.

LAPKOWSKY, W. W.

- 1-60. Minor elements in some carbonates [abs ] Canadian Mining Jour , v 81, no 2, p 226, Feb 1960.

LAPPARENT, Albert F. de

- 1-60. A proper d'un Stromatolite trouvé dans les sédiments précambriens des environs de Schefferville (Ungava et Labrador, Canada) Soc Géol France Bull. (Paris), 7<sup>e</sup> sér , tome 1, no 3, p 260-264, illus., 1959 [Feb 1960]

LAROCHELLE, André

- 1-60 A study of the palaeomagnetism of rocks from Yamaska and Brome Mountains, Quebec [abs ] Canadian Mining Jour , v 81, no 1, p 94, Jan. 1960.

La ROCQUE, Aurèle

- 1-60 Quantitative methods in the study of non-marine Pleistocene Mollusca Internat Geol. Cong , 21st, Copenhagen, 1960, Rept , pt 4, p 134-141 incl index map and tables, 1960.  
2-60. Molluscan faunas of the Flagstaff formation of central Utah Geol Soc. America Mem. 78, 100 p , illus., 1960  
3-60. Les animaux de l'époque glaciaire Sarracenia, no 4, 17 p. incl sketch maps, diagrams, and tables, May 1960

LARSEN, Esper Signius, 3d, 1912-1961

- 1-60 (and GOTTFRIED, David) Uranium and thorium in selected suites of igneous rocks Am Jour. Sci., v 258-A (Bradley Volume), p. 151-169 incl. diagrams and tables, 1960.

LARSEN, Norbert W

- 1-60 Geology and ground water resources of northern Cedar Valley, Utah County, Utah Brigham Young Univ. Research Studies Geology Ser., v. 7, no 1, 42 p , illus incl geol. map, Apr. 1960.

LARSEN, Ole

- 1-60. (and SØRENSEN, Henning) Principles of classification and norm calculations of metamorphic rocks--A discussion Jour. Geology, v. 68, no 6, p 681-683 incl. diagram and tables, Nov 1960, reply by author, T.F.W. Barth, p. 683, Nov. 1960 (Discussions of paper by T.F W. Barth, v 67, no 2, p 135-152, Mar. 1959 )

LARSON, Edward Richard See GIANELLA, V. P 2-60

LARSON, L. T. See CAMERON, Eugene Nathan 1-60

LARSON, Thurston Eric

- 1-60. (and WEATHERFORD, Richard L ) Natural radioactivity in Illinois water resources Am. Water Works Assoc Jour., v 52, no. 6, p 769-778 incl diagrams and tables, June 1960.



- La SALA, Albert Mario, Jr.  
 1-60 (and JOHNSON, Karl Elwood) Ground-water map of the Quonochontaug quadrangle, Rhode Island, showing water-bearing formations and related ground-water data Rhode Island Water Resources Coordinating Board Ground-Water Map GWM 11, scale 1 24,000 (1 in. to 2,000 ft.), with sections, 1960  
 2-60 (and HAHN, Glenn Walter) Ground-water map of the Carolina quadrangle, Rhode Island, showing water-bearing formations and related ground-water data Rhode Island Water Resources Coordinating Board Ground-Water Map GWM 9, scale 1 24,000 (1 in. to 2,000 ft.), with sections, 1960.
- LASCH, J. E. See SCHMITT, R. A. 1-60
- LATHRAM, Ernest Hartwell  
 1-60. Patterns of structural geology in the northern part of southeastern Alaska [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 2064, Dec 1960  
 2-60. (and others) Progress map of the geology of Admiralty Island, Alaska U. S. Geol. Survey Misc. Geol. Inv. Map I-323, scale 1 250,000 (about 1 in. to 4 mi.), with table, 1960
- LATIMER, I. S., Jr. See GILLESPIE, W. H. 1-60
- LATTER, Albert L. See also PLESSET, M. S. 1-60  
 1-60. (and PLESSET, Milton S.) Carbon-14 production from nuclear explosions Natl. Acad. Sci. Proc., v. 46, no. 2, p. 241-247 incl. diagrams, Feb. 1960
- LATTMAN, Laurence Harold See also ADLER, A. A. 1-60  
 1-60 Cross section of a floodplain in a moist region of moderate relief [Pennsylvania] Jour. Sed. Petrology, v. 30, no. 2, p. 275-282 incl. index and sketch maps, sections, and table, June 1960.
- LATULIPPE, Maurice. See also SHARPE, J. I. 2-60  
 1-60. (and SHARPE, John I.) Distribution of sulphide deposits in the Val d'Or-Mattagami area, Quebec [abs.] Canadian Mining Jour., v. 81, no. 4, p. 95, Apr. 1960.  
 2-60 The Mattagami area of northwestern Quebec Precambrian, v. 33, no. 10, p. 29-31, 34, Oct. 1960
- LAU, Leung-Ku Stephen  
 1-60. Laboratory investigation of sea-water intrusion into ground-water aquifers Honolulu, Univ. Hawaii and Honolulu Board Water Supply, 91 p. incl. diagrams, tables, and illus., Oct. 1960.
- LAUBSCHER, Hans P.  
 1-60. Role of fluid pressure in mechanics of overthrust faulting--Discussion Geol. Soc. America Bull., v. 71, no. 5, p. 611-615, May 1960, discussion of paper by M. K. Hubbert and W. W. Rubey, v. 70, p. 115-166, 1959, reply by authors with title, Role of fluid pressure in mechanics of overthrust faulting--A reply, v. 71, no. 5, p. 617-628 incl. diagrams, illus., May 1960.
- LAUGHBAUM, L. Ronald  
 1-60. A paleoecologic study of the upper Denton Formation, Tarrant, Denton, and Cooke Counties, Texas Jour. Paleontology, v. 34, no. 6, p. 1183-1197 incl. index map, sections, and table, Nov. 1960.
- LAURENCE, Robert Abraham  
 1-60. Geologic problems in the Sweetwater barite district, Tennessee Am. Jour. Sci., v. 258-A (Bradley Volume), p. 170-179 incl. sketch map, diagram, and tables, 1960

## LAURENCE

LAURENCE, T. Herbert

- 1-60 The impact of the ages Geol. Soc Oregon Country Geol. News Letter, v 26, no. 4, p. 25-27, Apr. 1960, continued, no 5, p 39-40, May 1960  
2-60. Cape Kiwanda sand dunes area fieldtrip, February 21, 1960 Geol Soc Oregon Country Geol. News Letter, v 26, no 7, p. 48-51, July 1960

LAURIN, André Frédéric Joseph

- 1-60. Preliminary report on Turquetil-Émard area, Pontiac electoral district Quebec Dept. Mines Geol. Surveys Br. Prelim. Rept 424, 9 p, geol map, 1960, also French ed.

LAURSEN, Emmett Morton See VANONI, Vito August 1-60, 2-60

LAUTH, Robert Edward. See BROWN, Silas C 1-60

LAVAL, William Norris

- 1-60. (and MILLER, Allan E.) Porphyry intrusive rocks of the Manhattan district, northern Front Range, Colorado [abs.] Geol Soc. America Bull, v. 71, no 12, pt. 2, p 2065, Dec. 1960

LAVERTY, Bruce Ross. See TERZAGHI, Karl 1-60

LAWLESS, John Earle

- 1-60 Manly-Neas area, Jones County, Texas, in Abilene Geol. Soc., Geological contributions 1960, p 77-86, illus., 1960

LAWRENCE, Barbara

- 1-60. Fossil Tadarida from New Mexico Jour Mammalogy, v 41, no. 3, p 320-322 incl table, Aug. 1960.

LAWRENCE, R M. See MURRAY, Grover Elmer 3-60

LAWSON, D C See SAHINEN, Uno Mathias 1-60

LEAHEY, A.

- 1-60 Soils of Canada from a pedological viewpoint [abs.] Royal Soc. Canada Minutes Proc, 3d ser, v 54, App C, p 40, 1960

LEAKE, Bernard E.

- 1-60 Compilation of chemical analyses and physical constants of natural cordierites Am. Mineralogist, v. 45, nos 3-4, p. 282-298 incl diagrams and tables, Mar.-Apr. 1960.

LEAKEY, L. S. B.

- 1-60. The origin of the genus Homo, in Tax, S, ed., Evolution after Darwin, V. 2 Chicago, Ill, Univ. Chicago Press, p. 17-32, 1960

LeCOMTE, Paul See BIRCH, Albert Francis 1-60

LEE, Clarence O.

- 1-60. (and BARTLETT, Z W., and FEIERABEND, Raymond H) The Grand Isle mine [Louisiana] Mining Eng., v. 12, no. 6, p. 578-590 incl. sketch map, diagrams, table, and illus, June 1960

LEE, Edward L.

- 1-60. Chemical stratigraphy of Middle Ordovician limestones in a portion of Rich Valley, Smyth County, Virginia [abs.] Virginia Jour. Sci., v. 11, no 4, p. 215-216, Sept 1960

LEE, Gerhard Bjarne See GLENN, R. C. 1-60

LEE, Hulbert Austin. See also CANADA GEOL. SURVEY 25-60

- 1-60. Late glacial and postglacial Hudson Bay sea episode [Canada]. Science, v 131, no. 3413, p 1609-1611 index map and diagram, May 27, 1960.

LEE, Kwang-Yuan

1-60. Geology of the Flandreau quadrangle, South Dakota South Dakota Geol. Survey [Geol Map], scale 1 62,500 (about 1 in. to 1 mi.), with text, 1960.

2-60. Geology of the Rutland quadrangle, South Dakota South Dakota Geol. Survey [Geol Map], scale 1 62,500 (about 1 in. to 1 mi.), with text, 1960.

LEE, Milford Ray. See CRAWFORD, John Marion 1-60

LEE, Patrick K. See BOLTON, Thomas Elwood 2-60

LEECH, Geoffrey Bosdin. See CANADA GEOL. SURVEY 41-60

LEET, Lewis Don

1-60. Vibrations from blasting rock Cambridge, Mass., Harvard Univ Press, 134 p., illus., 1960.

LEFEVER, Robert Allen See CHASE, A. B. 1-60, WICKERSHEIM, Kenneth A 1-60

LeGEAR, Clara E. See RISTOW, Walter W. 1-60

LEGGET, Robert Ferguson See also HARDY, Robert Macdonald 1-60, 2-60

1-60. Experiences with ground water on construction [abs.] Geol Soc America Bull., v 71, no 12, pt 2, p 1914, Dec 1960.

2-60. (and HUTCHEON, N. B., and DICKENS, H. B.) Permafrost investigations in Canada [abs.] Oil in Canada, v. 12, no. 16, p. 35, Feb. 15, 1960

LEGGETT, R.

1-60. Permafrost investigations in Canada [abs.] Oilweek, v. 10, no 49, p. 18-19, Jan. 23, 1960.

LeGRAND, Harry Elwood

1-60. Metaphor in geomorphic expression Jour. Geology, v 68, no. 5, p 576-579, Sept. 1960.

2-60. Summary of geology of Atlantic Coastal Plain province [abs.] Am. Assoc Petroleum Geologists Bull., v 44, no 7, p 1252, July 1960

3-60. Geology and ground-water resources of Pittsylvania and Halifax Counties, Virginia Virginia Div. Mineral Resources Bull. 75, 86 p., illus incl geol. map, 1960.

4-60. Geology and ground-water resources of Wilmington-New Bern area North Carolina Dept Water Resources Ground-Water Bull 1, 80 p., illus., 1960.

LEHMANN, Ulrich

1-60. SALTER'sche Einbettung bei Ogygopsis WALC. (Tril.) im Mittel-Kambrium von Britisch-Columbien? Hamburg Geol Staatsinst Mitt., Heft 29, p 104-108, illus., with English summary, Nov. 1960.

LEIGHTON, Freeman Beach

1-60. Undergraduate research on landslides at Whittier College [California] GeoTimes, v 5, no. 3, p 10-11 incl. illus., Oct. 1960

LEIGHTON, Morris Morgan

1-60. The classification of the Wisconsin glacial stage of north central United States Jour Geology, v 68, no 5, p 529-552 incl. sketch maps, diagrams, and tables, also glacial map and illus., Sept 1960.

2-60. Bearing of the loess deposits along Mississippi River Valley on the stream's regimen during Late Pleistocene [abs.] Geol. Soc America Bull., v 71, no. 12, pt 2, p. 1914-1915, Dec 1960

LEIGHTY, Robert D

1-60. (and POULIN, Ambrose O.) Ice-cap access route, Narssarssuaq, Greenland--Location and engineering evaluation U. S. Army, Corps of Engineers, Snow Ice and Permafrost Research Establishment Tech. Rept. 48, 36 p., illus., May 1960.

## LEININGER

LEININGER, Richard Keith See FILBY, Royston H 1-60

LEISMAN, Gilbert Arthur

1-60. The morphology and anatomy of Callipteridium Sullivanti [Iowa-Kansas] *Am Jour Botany*, v. 47, no 4, p 281-287 incl illus , Apr 1960

Le MAY, William Joseph

1-60. In southeast New Mexico--Abo reef play yielding large oil fields *World Oil*, v. 151, no 7, p 91-95 incl tectonic index map, sketch maps, sections, and diagrams, Dec 1960

2-60 Oil accumulations along Abo reefing, southeastern New Mexico [abs ] *Oil and Gas Jour* , v 58, no 40, p. 146, Oct. 3, 1960.

3-60. Oil accumulation along Abo reefing, southeastern New Mexico, in *Natural gas in the Southwest Southwestern Federation Geol Soc's Trans.*, v 1, p 125-137 incl index and sketch maps, sections, and diagram, 1960.

LEMISH, John See BISQUE, Ramon Edward 3-60, DIEBOLD, Frank E. 1-60, HARWOOD, Robert J. 1-60, HILTROP, Carl L 1-60, 2-60

LEMKE, Richard Walter

1-60 Geology of the Souris River area, North Dakota *U. S. Geol. Survey Prof. Paper* 325, 138 p , illus incl. geol. maps, 1960.

LeMOINE, Denis See NEWTON, Joseph 1-60

LEMON, R. R. H.

1-60 Proterozoic and Palaeozoic stratigraphy of the Admiralty Inlet region, Baffin Island [Northwest Territories] *Royal Canadian Inst. Trans.*, no 68, v 33, pt 1, p 3-13, illus , Oct 1960

LENHART, Walter B.

1-60 Sand gravel, in *Am Inst Mining, Metall , and Petroleum Engineers, Industrial minerals and rocks*, p. 733-758 incl diagrams, tables, and illus , 1960

LENZ, Alfred Carl

1-60. Devonian stratigraphy and paleontology of Lower Mackenzie Valley, Northwest Territories [abs ] *Dissert. Abs.*, v 21, no 6, p 1525-1526, Dec 1960.

LEO, Gerhard William

1-60 Autunite from Mt. Spokane, Washington *Am Mineralogist*, v. 45, nos 1-2, p 99-128 incl sketch map, diagrams, tables, and illus., Jan - Feb. 1960

LEONARD, Arthur Byron

1-60. (and FRYE, John Chapman) Wisconsin molluscan fauna of the Illinois Valley region *Illinois State Geol. Survey Div Circ* 304, 32 p., illus , 1960.

2-60. (and HO, Tong-Yun) A new species of Calipyrgula (Hydrobiidae) from the Pleistocene of Texas *Nautilus*, v 73, no 3, p 110-113, Jan. 1960

3-60. (and HO, Tong-Yun) New Calipyrgula from Pleistocene of Texas and notes on Cochliopa riograndensis . *Nautilus*, v. 73, no 4, p 125-129, illus , Apr 1960.

LEONARD, Benjamin Franklin, 3d

1-60. (and VLISIDIS, Angelina Calomeris) Vonsenite from St Lawrence County, northwest Adirondacks, New York *Am. Mineralogist*, v 45, nos. 3-4, p. 439-442 incl. tables, Mar.-Apr 1960

2-60. Reflectivity measurements with a Hallimond visual microphotometer *Econ Geology*, v. 55, no 6, p 1306-1312 incl tables, Sept -Oct 1960

LEONARD, Frederick Charles, 1896-1960

1-60 The term "cosmoparticle" *Science*, v 132, no 3411, p. 1400, May 13, 1960

- LEONARDS, Gerald Allen See also LAMBE, T. W. 1-60  
1-60 (and ALTSCHAEFFL, Adolph G.) Subsurface materials of Marion County, Indiana Purdue Univ Eng. Ext. Ser , no 103, [3] p., illus., Aug. 1960
- LEOPOLD, Estella Bergere. See HAIL, William James, Jr 2-60, HOPKINS, David Moody 2-60, SCOTT, Richard Albert 1-60
- LEOPOLD, Luna Bergere  
1-60. (and WOLMAN, Markley Gordon) River meanders Geol Soc. America Bull , v. 71, no 6, p 769-793 incl diagrams and tables, illus., June 1960.  
2-60. (and others) Flow resistance in sinuous or irregular channels U S. Geol Survey Prof. Paper 282-D, p 111-134, illus., 1960  
3-60. (and LANGBEIN, Walter B.) A primer on water Washington, D. C , U S Geol. Survey, 50 p , illus., 1960.
- LEPS, Thomas MacMaster. See TERZAGHI, Karl 1-60
- LERNER, Joseph. See SCHURR, Sam H. 1-60
- LeROUX, E F See THOMASSON, Horace Gordon, Jr 1-60
- LeROY, Leslie Walter  
1-60 (compiler) Generalized composite stratigraphic sections of western Colorado Colorado School Mines, [16] sheets incl index map, illus., and diagrams [1960].
- LESPÉRANCE, Pierre-Jaques. See LANDES, Kenneth Knight 2-60
- LESTER, James George  
1-60 Georgia palynology and petrology--a preliminary report [abs ] Georgia Acad Sci. Bull , v. 18, nos. 1-2, p. 15, Apr 1960.
- LEUTZE, Willard Parker  
1-60. Silurian eurypterids from West Virginia Jour. Paleontology, v. 34, no 5, p 1023-1026 incl illus , Sept. 1960.  
2-60. Silurian fish fossils in the Salina basin Geol Soc. America Bull , v. 71, no 2, p. 215-217 incl paleogeog. map, Feb 1960  
3-60. Stratigraphy and paleontology of the Salina group in central New York [abs ] Dissert. Abs., v 20, no. 12, p 4633-4634, June 1960.
- LEVESON, David Jeffrey  
1-60. Orbicular rocks of the Lonesome Mountain area, Beartooth Mountains, Montana and Wyoming [abs ] Dissert Abs , v 21, no. 4, p 850, Oct. 1960
- LEVICK, Dudley A., Jr  
1-60. A collecting trip to Virginia. Rocks and Minerals, v 35, nos. 11-12, p 562-564, Nov.-Dec 1960
- LEVIN, Betsy. See CUTTITTA, Frank 1-60, MEYROWITZ, Robert 1-60
- LEVIN, Ernest Maurice. See also ROBBINS, C R. 1-60  
1-60 (and ROBBINS, Carl Richard, and WARING, Jon Lamont) System lanthanum oxide-boric oxide [abs.] Am Ceramic Soc. Bull., v. 39, no 4, p 185, Apr 1960.
- LEVIN, Samuel Benedict. See GIARDINI, Armando Alfonzo 1-60
- LEVINE, Harry. See MAGIN, George B., Jr. 1-60, SMITH, William Lee 1-60
- LEVINSON, Alfred Abraham  
1-60 Second occurrence of todorokite Am Mineralogist, v 45, nos. 7-8, p 802-807 incl. tables, July-Aug 1960  
2-60 Poorly crystallized, low barium, psilomelane-type mineral [abs ] Geol Soc. America Bull., v 71, no 12, pt 2, p 1915, Dec 1960

## LEVORSEN

LEVORSEN, Arville Irving

- 1-60. Preservation of early Paleozoic oil and gas [abs ] Am. Assoc. Petroleum Geologists Bull., v. 44, no. 1, p. 129, Jan. 1960.
- 2-60. Paleogeologic maps San Francisco, Calif , W. H. Freeman and Co., 174 p., illus. incl geol. maps, 1960.

LEWIS, D W.

- 1-60. Heavy mineral content of tills in western New York Compass, v 37, no. 3, p 162-173 incl sketch map and tables, Mar 1960

LEWIS, Donald Richard

- 1-60. Autothermoluminescence--A new petrological technique [abs ] Geol Soc. America Bull., v. 71, no. 12, pt 2, p. 1915-1916, Dec. 1960.

LEWIS, George Edward. See also HAIL, W. J , Jr. 1-60, Van ALSTINE, R. E. 2-60

- 1-60. Miocene vertebrates of the Mojave Desert [abs.] Geol. Soc America Bull , v 71, no. 12, pt. 2, p. 1916, Dec. 1960.
- 2-60. Fossil vertebrates and sedimentary rocks of the Front Range foothills, Colorado, in Rocky Mtn Assoc Geologists, Guide to the geology of Colorado Denver, p. 285-288 incl. index map and illus , 1960

LEWIS, John P. See also CURTIS, G. R. 2-60

- 1-60. The coral reefs and coral communities of Barbados, W.I. Canadian Jour. Zoology, v. 38, no 6, p 1133-1145 incl. index map, illus , Dec. 1960.

LEWIS, P. D., Jr. See MURRAY, Grover, Elmer 3-60

LEWIS, Paul Joseph

- 1-60. How to analyze bioherms in the Williston Basin World Oil, v 150, no 2, p 82-84 incl. illus., Feb 1, 1960

LEWIS, Peirce F.

- 1-60 Linear topography in the southwestern Palouse, Washington-Oregon Assoc. Am Geographers Annals, v 50, no. 2, p 98-111 incl sketch maps, diagrams, and illus., June 1960

LEWIS, R. N See BROWN, W Liddle 1-60

LEWIS, Richard Quintin

- 1-60 (and NELSON, Willis Howard, and POWERS, Howard Adorno) Geology of Rat Island, Aleutian Islands, Alaska U. S. Geol Survey Bull. 1028-Q, p. 555-562, illus incl geol. map, 1960.

LEWONTIN, Richard Charles See SIMPSON, George Gaylord 5-60

LIBBEY, Fay Wilmott

- 1-60. Boron in Alvord Valley, Harney County, Oregon Ore -Bin, v 22, no 10, p. 97-105 incl index and sketch map, section, and chart, Oct. 1960

LIBERTY, Bruce Arthur

- 1-60. Belleville and Wellington map-areas, Ontario, 30 N/14 and part of 30 N/15 W 1/2, 31 C/3 and part of 31 C/2 W 1/2 Report, Map 45-1960, and Map 46-1960) Canada Geol Survey Paper 60-31, 9 p , geol. maps, 1960.
- 2-60. Rice Lake-Port Hope and Trenton map-areas, Ontario--31 D/1, 30 M/16, 31 C/4, 30 N/13 (P. S. Map 16-1960 and P. S. Map 17-1960) Canada Geol. Survey Paper 60-14, 4 p , geol. maps, 1960
- 3-60. Outliers within the area of the Canadian Shield--their import [abs.] Royal Soc. Canada Minutes Proc., 3d ser , v 54, App C, p 36, 1960.

LICASTRO, Pasquale Hallison

- 1-60 Dielectric behavior of rocks and minerals [abs ] Dissert Abs., v 20, no 8, p 3260, Feb 1960

- LICHT, Arthur L.  
1-60. Convection currents in the earth's mantle Jour Geophys. Research, v 65, no. 1, p 349-353 incl. diagrams, Jan. 1960.
- LICHTLER, William Francis  
1-60. Geology and ground-water resources of Martin County, Florida Florida Geol. Survey Rept. Inv 23, 149 p, illus., 1960.
- LIDDICOT, Richard Thomas Jr. See COPELAND, Lawrence L. 1-60
- LIFE EDITORIAL STAFF  
1-60. The new portrait of our planet--Pt. 1, New portrait of our planet, Pt. 2, Surprises of seas and skies Life, v. 49, no 19, p. 74-101, illus., with separate map, Nov 7, 1960, no. 20, p 76-88B illus., Nov. 14, 1960.
- LIFE MAGAZINE  
1-60 (and BARNETT, Lincoln) The wonders of life on earth New York, N. Y., Time, Inc, 300 p., illus, 1960.
- LIGASACCHI, Attilio  
1-60. (and AMSTUTZ, Gerhardt Christian) Origin of the barite deposits of Missouri [abs] Geol. Soc America Bull., v 71, no. 12, pt 2, p 1916, Dec 1960.
- LILL, Gordon Grigsby  
1-60. Deep drilling project [abs.] Am Assoc Petroleum Geologists Bull, v 44, no 7, p. 1252, July 1960  
2-60. Project Mohole [abs] Geol. Soc America Bull., v 71, no 12, pt 2, p 2102, Dec. 1960
- LINDBERG, Marie Louise Lange See MEYROWITZ, Robert 2-60
- LINDEROTH, C. E. See PEARCE, Denis Wiffen 1-60, SCHWENDIMAN, L. C. 1-60
- LINDHOLM, Thomas M See WHITWORTH, Virgil Lee 1-60
- LINDSAY, J. D See BAYROCK, Luboslaw Antin 2-60
- LINEHAM, J D.  
1-60. Petroleum and natural gas British Columbia Dept Mines Ann Rept. 1959, p 202-229, tables, 1960.
- LINGARD, Amos Lister  
1-60. Spectrographic determination of common elements in rocks and minerals South Dakota Acad Sci Proc. 1960, v. 39, p. 48-51, tables, Nov 1, 1960
- LINIAL, Andrew V  
1-60 (and BOVARNICK, Bennett) Pyrolytic graphite--An approach to synthetic graphite [abs] Geol Soc America Bull, v 71, no 12, pt 2, p. 1917, Dec. 1960.
- LINK, Richard F See KOCH, George Schneider, Jr. 1-60
- LINN, Earl H.  
1-60. Lower Silurian and Cambro-Ordovician sedimentation of Northern Appalachian basin [abs.] Am. Assoc. Petroleum Geologists Bull., v. 44, no 7, p 1252, July 1960.
- LIPP, Henry H. See RADER, Lewis Franklin, Jr 1-60
- LIPSON, Joseph Isaac See BAADSGAARD, Halfdan 1-60, FOLINSBEE, Robert Edward 1-60

## LITSEY

LITSEY, Linus Reid

- 1-60. Geology near Orient mine, Sangre de Cristo Mountains, Colorado, in Rocky Mtn Assoc. Geologists, Guide to the geology of Colorado Denver, p 129-131 incl geol sketch map and section, 1960

LITTLE, Heward Wallace See also CANADA GEOL. SURVEY 6-60, 8-60

- 1-60. Nelson map-area, west half, British Columbia Canada Geol. Survey Mem 308, 205 p, illus. incl geol. map, 1960

LITTLE, W M.

- 1-60. Inclusions in cassiterite and associated minerals Econ. Geology, v. 55, no. 3, p. 485-509 incl. diagrams, tables, and illus., May 1960.

LIVERMAN, James L See KURTZ, Edwin Bernard, Jr. 1-60

LIVINGSTON, Alfred, Jr.

- 1-60. Introduction to geology (an outline) Revised ed., Palo Alto, Calif., N-P Pubs, 55 p., 1960.

LIVINGSTON, Clifton Walter

- 1-60. Explosions in ice U S. Army, Corps of Engineers, Snow Ice and Permafrost Research Establishment Tech Rept. 75, 50 p incl. diagrams, tables, and illus., Dec. 1960  
2-60. Bomb penetration tests, Fort Churchill, Canada U S. Army, Corps of Engineers, Snow Ice and Permafrost Research Establishment Tech. Rept 71, [102] p incl index map, diagrams, illus, and tables, Sept. 1960.

LJUNGGREN, Pontus

- 1-60 Determination of mineralogical transformations of gypsum by differential thermal analysis Am. Ceramic Soc Jour, v 43, no 4, p 227 incl. diagram, Apr. 1, 1960.  
2-60 A sulfur mud deposit formed through bacterial transformation of fumarolic hydrogen sulfide Econ. Geology, v 55, no 3, p 531-538 incl. sketch map and illus., May 1960.  
3-60. A formation of marekanite at El Fiscal, Guatemala Geol Mag (Hertford, England), v. 97, no. 1, p 49-52, illus, Jan.-Feb. 1960.

LJUNGSTEDT, Olof Axel See STOSE, George Willis 1-60

LLOYD, Joel Joseph

- 1-60. (and DENGGO, Gabriel Obregon) Petroleum possibilities of Peten basin, Guatemala [abs.] Am. Assoc. Petroleum Geologists Bull., v. 44, no. 7, p. 1252-1253, July 1960.  
2-60 (and DENGGO, Gabriel Obregon) Continued drilling may uncover oil in Guatemala's Peten Oil and Gas Jour, v. 58, no. 18, p. 208, 210, 212 incl. geol sketch map and sections, May 2, 1960

LLOYD, Ronald Michael

- 1-60 Shell chemistry of some Recent and Pleistocene mollusks and its environmental significance [abs] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1917, Dec. 1960.

LOCHMAN-BALK, Christina

- 1-60. Upper Cambrian-Lower Ordovician boundary in Montana, U.S.A. Internat Geol Cong, 21st, Copenhagen, 1960, Rept, pt 8, p. 40-46, 1960.  
2-60. (and HU, Chung-Hung) Upper Cambrian faunas from the northwest Wind River Mountains, Wyoming--Pt 1 Jour. Paleontology, v 34, no. 5, p 793-834 incl index and sketch maps, and sections, illus, Sept. 1960.  
3-60. The Cambrian section of western Wyoming, in Overthrust belt of southwestern Wyoming and adjacent areas Wyoming Geol. Assoc, 15th Ann. Field Conf., 1960, Guidebook, p 98-108 incl index map and sections, 1960.

LOCKWOOD, William Noble

- 1-60. (and MEISLER, Harold) Illinoian out-wash in southeastern Pennsylvania U S. Geol Survey Bull. 1121-B, p B1-B9, illus., 1960



## LODDING, William

- 1-60. (and HAMMELL, Laurence) Differential thermal analysis of hydroxides in reducing atmosphere Anal Chemistry, v. 32, no 6, p. 657-662 incl. diagrams, tables, and illus., May 1960
- 2-60. Vermicular gibbsite in the Pensauken of New Jersey Am Mineralogist, v 45, nos 1-2, p. 228-229 incl. illus , Jan -Feb 1960

## LOF, George Oscar Gage

- 1-60. Potential application of new water technology in the west Western Resources Conf., 1st, 1959, Papers, p 39-48 incl tables, 1960.

## LOELTZ, Omar Joseph

- 1-60 Source of water issuing from springs in Ash Meadow Valley, Nye County, Nevada [abs.] Geol. Soc America Bull , v 71, no 12, pt 2, p 1917-1918, Dec. 1960

## LOFGREN, Benjamin Elder

- 1-60. Near-surface land subsidence in western San Joaquin Valley, California Jour Geophys. Research, v. 65, no 3, p 1053-1062 incl sketch maps, diagrams, and illus., Mar. 1960
- 2-60. Land subsidence adjacent to the White Wolf fault near Bakersfield, California [abs ] Geol Soc America Bull., v. 71, no 12, pt. 2, p 1918, Dec 1960
- 3-60. Land subsidence in the Tulare-Wasco area, California [abs.] California Assoc Eng Geologists, 3d Ann. Mtg., Berkeley, Oct 14-16, 1960, p 11 [1960].

## LOGAN, B. W.

- 1-60. (and REZAK, Richard, and GINSBURG, Robert Nathan) Classification and environmental significance of stromatolites [abs ] Geol Soc America Bull., v 71, no. 12, pt 2, p. 1918-1919, Dec 1960.

## LOHMAN, Kenneth Elmo

- 1-60 The ubiquitous diatom--A brief survey of the present state of knowledge Am Jour. Sci , v. 258-A (Bradley Volume), p. 180-191, 1960.

## LOHMAN, Stanley William

- 1-60. Colorado National Monument and adjacent areas, in Rocky Mtn. Assoc. Geologists, Guide to the geology of Colorado Denver, p. 86-88 incl. section, 1960

LOLEIT, A Jerome See BROWN, Boyd Ray 1-60, PICARD, Meredith Dane 2-60, 3-60

## LOMBARDI, Oreste W.

- 1-60. Distribution of the chemical elements in the salines of Saline Valley, Inyo County, California [abs ] Geol Soc America Bull , v 71, no 12, pt 2, p 2065, Dec 1960.

LONEY, Robert Ahlberg. See LATHRAM, Ernest Hartwell 2-60LONG, Austin See also SILVERMAN, A J. 1-60

- 1-60. (and SILVERMAN, A. J., and KULP, J. L.) Isotopic composition of lead and Precambrian mineralization of the Coeur d'Alene district, Idaho Econ. Geology, v 55, no. 4, p 645-658 incl mine and mineral sketch maps, tables, and illus , June-July 1960, discussion by Fred Searls, Jr , no 7, p 1565, Nov 1960.

## LONG, George Ivan Wilbur

- 1-60. Afton anticline, Lincoln County, Wyoming, in Overthrust belt of southwestern Wyoming and adjacent areas Wyoming Geol Assoc , 15th Ann. Field Conf , 1960, Guidebook, p. 187-188 incl structure contour maps, 1960

## LONG, Leon Eugene

- 1-60. Isotopic ages from Dutchess County, New York, and adjacent areas [abs ] Geol Soc. America Bull , v 71, no 12, pt 2, p. 1919, Dec 1960.

## LONG

- 2-60. Study of the metamorphic history of the New York City area [New York-New Jersey] using isotopic age methods [abs] Dissert Abs, v 20, no 9, p. 3694, Mar 1960.
- LONG, R. A.  
1-60. (and VEHR, R. A., and SAHAKIAN, A.) An examination of parts of the Southern Complex near Palmer, Marquette County, Michigan Michigan Acad. Sci., Arts, and Letters, Papers 1959, v 45, p 119-124, illus., 1960.
- LONGGOOD, Theodore E, Jr See MUEHLBERGER, William Rudolph 4-60
- LONGSHORE, John D. See ROGERS, John James William 2-60
- LONGWELL, Chester Ray  
1-60. Possible explanation of diverse structural patterns in southern Nevada Am. Jour. Sci., v. 258-A (Bradley Volume), p 192-203 incl. index and tectonic maps, 1960.  
2-60. Geologic setting of Lake Mead, [Chap] C in Pt. 1 of Smith, W. O., Comprehensive survey of sedimentation in Lake Mead [Arizona-Nevada], 1948-49 U. S. Geol Survey Prof. Paper 295, p. 11-20, illus., 1960.
- LONGYEAR, Robert D.  
1-60. Donald Miner Davidson [1902-1960] Mining and Metall Soc. America Bull 313, v 53, no. 2, p 109-110, Dec. 1960.
- LOOFBOUROW, R. L. See GENESKY, S. M. 1-60
- LÓPEZ AVILA, Javier. See TAVERA AMEZCUA, Eugenio 1-60
- LÓPEZ RAMOS, Ernesto  
1-60. Versión castellana de la redacción preliminar del Código Estratigráfico, Pt. 2 Asoc. Mexicana Geólogos Petroleros Bol., v. 12, nos. 5-6, p 203-210, May-June 1960.
- LORANGER, Diane May  
1-60 Jurassic-Cretaceous boundary in western Canada Internat. Geol Cong, 21st, Copenhagen, 1960, Rept, pt. 12, p. 170-177 incl. paleogeog maps, sections, and chart, 1960.  
2-60. (and McGILL, Peter Corbett) Biostratigraphy of Lower Cretaceous sediments in the Anderson River area, Northwest Territories [abs.] Oil in Canada, v. 12, no 12, p 72, Jan 18, 1960.
- LORENZ, Philip Boalt. See DWIGGINS, Claudius William, Jr 2-60
- LORING, William Bacheller  
1-60. Geology and ore deposits of the northern part of the Big Indian district, San Juan County, Utah [abs] Arizona Geol Soc Digest, v. 3, p 174-175, Mar 1960
- LOUD, Elisabeth S. See KING, Ruth Reece 1-60
- LOUDON, J. Russell  
1-60. The origin of the porphyry and porphyry-like rocks of Elbow, New Brunswick [abs] Canadian Mining Jour., v 81, no. 11, p 114, Nov. 1960
- LOUNSBURY, Richard William See SCHUSTER, Robert Lee 1-60
- LOVE, John David  
1-60. Cenozoic sedimentation and crustal movement in Wyoming Am. Jour. Sci., v. 258-A (Bradley Volume), p 204-214 incl. index map and table, illus., 1960.
- LOVE, Warner Edwards See PATTERSON, Arthur Lindo 1-60

LOVEJOY, Earl M. P

- 1-60 Structural implications of the shore lines of the Mio-Pliocene Lake Nevada [abs] Geol Soc America Bull, v 71, no 12, pt 2, p 1919, Dec 1960

LOVELL, Harold Lemuel See MANEVAL, David Richard 1-60

LOVERING, Thomas Seward See also BUSH, J. B 1-60

- 1-60. (and SHEPARD, Anna O) Hydrothermal alteration zones caused by halogen acid solutions, East Tintic district, Utah Am Jour Sci, v 258-A (Bradley Volume), p. 215-229 incl. diagrams and tables, illus, 1960  
 2-60. Current practice and trends in mineral exploration [abs] Geol. Soc. America Bull, v 71, no 12, pt. 2, p 2102-2103, Dec 1960  
 3-60. (and others) Geologic map of the East Tintic district, Utah U. S. Geol Survey Mineral Inv. Field Studies Map MF-230, sheet 1, scale 1 9,600 (1 in to 800 ft.), 1960  
 4-60. (and others) Alteration map of the East Tintic district, Utah U. S. Geol Survey Mineral Inv Field Studies Map MF-230, sheet 2, scale 1 9,600 (1 in to 800 ft ), 1960.  
 5-60. (and SHEPARD, Anna O) Hydrothermal argillic alteration on the Helen claim, East Tintic district, Utah, in Swineford, Ada, ed, Clays and clay minerals, V 8 Natl. Conf Clays and Clay Minerals, 8th, Norman, Okla, Oct 1959, Proc., p 193-202 incl diagram and tables, 1960 (Issued as Internat. Earth Science Ser Mon. 9 of Pergamon Press, New York )

LOVERING, Tom Gray See HUFF, Lyman Coleman 1-60

LOVETT, F D

- 1-60. (and MANKIN, Charles John, and HAM, William Eugene) Authigenic apatite and clay minerals from Roger Mills County, Oklahoma Oklahoma Geology Notes, v 20, no 8, p 190-194, illus, Aug 1960

LOW, Philip Funk

- 1-60 Viscosity of water in clay systems, in Swineford, Ada, ed, Clays and clay minerals, V 8 Natl Conf. Clays and Clay Minerals, 8th, Norman, Okla, Oct. 1959, Proc, p 170-182 incl diagrams and table, 1960 (Issued as Internat. Earth Science Ser. Mon. 9 of Pergamon Press, New York )

LOWDON, James Alexander See also WANLESS, R. K 1-60

- 1-60. (compiler) Isotopic ages, Rept. 1 of Age determinations by the Geological Survey of Canada Canada Geol Survey Paper 60-17, 51 p, with sections by S C. Robinson and G. M. Wright, 1960.

LOWELL, James Diller

- 1-60. Ordovician miogeosynclinal margin in central Nevada Internat. Geol. Cong, 21st, Copenhagen, 1960, Rept., pt. 7, p 7-17 incl index map, section, and table, 1960

LOWENSTAM, Heinz Adolf

- 1-60. O<sup>18</sup>/O<sup>16</sup> ratios and Sr and Mg contents in recent and fossil articulate brachiopods and their relationship to the water chemistry [abs.] Geol. Soc. America Bull., v 71, no 12, pt. 2, p 2065-2066, Dec. 1960

LOWMAN, Paul D, Jr

- 1-60 A comparison of chemical compositions of tektites and certain sedimentary and igneous rocks [abs.] Jour. Geophys Research, v 65, no. 8, p. 2507, Aug 1960

LOWRY, Wallace Dean

- 1-60. Relationship between tectonism and sedimentation in Early Silurian time in Virginia Mineral Industries Jour, v 7, no 3, p 1-7, illus., Sept 1960

LUCAS, Clifford V. See FUQUA, Wallace Dunham 1-60, 2-60

## LUCAS

LUCAS, K. A. See MILNE, William George 1-60

LUDBROOK, N. H.

- 1-60. Scaphopoda, in Joint Comm. Invertebrate Paleontology, Treatise on invertebrate paleontology--Pt. I, Mollusca 1 Lawrence, Kans., Geol. Soc. America and Univ. Kansas Press, p. 137-141 incl. diagrams and illus., 1960.

LUEDKE, Robert George

- 1-60. (and BURBANK, Wilbur Swett) Ring-fractured bodies in the Silverton caldera, Colorado Art. 7 in U. S. Geol. Survey Prof. Paper 400-B, p. B13, 1960

LUGAY, Josefina. See SCOMILLIO, John 1-60

LUGN, Alvin Leonard

- 1-60 The origin and sources of loess in the Great Plains in North America. Internat. Geol. Cong., 21st, Copenhagen, 1960, Rept., pt. 21, p. 223-235 incl. sketch maps and table, 1960.

LUM, Daniel

- 1-60. Gravity measurements east of Black Hills and along a line from Rapid City to Sioux Falls, South Dakota [abs.] Am. Assoc. Petroleum Geologists Bull., v. 44, no. 6, p. 958, June 1960  
2-60 Gravity measurements east of the Black Hills and along a line from Rapid City to Sioux Falls, South Dakota. Am. Assoc. Petroleum Geologists Rocky Mtn. Sec. Geol. Record 1960, p. 95-102 incl. illus. [1960]  
3-60. Gravity meters (gravimeters) used in geophysical exploration South Dakota Acad. Sci. Proc. 1959, v. 38, p. 29-31, Jan. 1960.

LUMBERS, Sydney Blake

- 1-60. (and others) Parts of Adair and Abbotsford townships, District of Cochrane Ontario Dept. Mines Prelim. Geol. Map P-85, scale 1 in. to 1 1/4 mi [1960].  
2-60. (and others) Hepburn township and north part of Sargeant township, District of Cochrane Ontario Dept. Mines Prelim. Geol. Map P-86, scale 1 in. to 1 1/4 mi [1960]

LUND, Ernest Howard

- 1-60. Chalcedony and quartz crystals in silicified coral. Am. Mineralogist, v. 45, nos. 11-12, p. 1304-1307 incl. illus., Nov.-Dec. 1960.

LUNDBERG, Hans T. F.

- 1-60 (and RATCLIFFE, John H.) Airborne gravity meter--Description and preliminary results. Am. Inst. Mining, Metall., and Petroleum Engineers Trans. 1959, v. 214, p. 817-820 incl. sketch map and diagrams, 1960.

LUNDBERG, William D.

- 1-60. Swan Hills area, Alberta development progress [abs.]. Canadian Mining and Metall. Bull., v. 53, no. 575, p. 200, Mar. 1960

LUNDQUIST, C. A. See VARNEDOE, W. W. 1-60

LURIE, Edward

- 1-60. Louis Agassiz [1807-1873]--A life in science. Chicago, Ill., Univ. Chicago Press, 449 p., illus., 1960.

LUSCZYNSKI, N. J.

- 1-60. (and SWARZENSKI, W. V.) Position of the salt-water body in the Magothy(?) formation in the Cedarhurst-Woodmere area of southwestern Nassau County, Long Island, N. Y. Econ. Geology, v. 55, no. 8, p. 1739-1750 incl. index maps, sections, and table, Dec. 1960

LUSKIN, Bernard. See also EWING, J. I. 1-60

- 1-60. (and EWING, John Isaac) Ocean-bottom seismographs [abs.] Jour. Geophys. Research, v. 65, no. 8, p. 2507-2508, Aug. 1960.

LUTHER, Edward Turner

1-60. The coal industry of Tennessee Tennessee Div. Geology Inf. Circ 10, 58 p incl index and sketch maps, diagrams, tables, and illus., 1960.

LUTZ, Harold John

1-60. Movement of rocks by uprooting of forest trees Am Jour Sci , v 258, no 10, p 752-756 incl illus., Dec 1960

LYDON, Philip A.

1-60. (and GAY, Thomas E., Jr , and JENNINGS, Charles William, compilers) Geologic map of California, Westwood sheet, Olaf P Jenkins edition California Div. Mines, scale 1 250,000 (about 1 in. to 4 mi ), with separate explanatory chart, 1960.

LYNCH, J J. See THOMAS, J F J. 1-60

LYNCH, Shirley Alfred

1-60. (and WEAVER, Paul) Pavement disruption by recent earth movements [Texas], in Tanner, W. F., ed., Symposium on highway engineering geology, 11th Ann , Feb 1960, Proc , p. 87-108, illus , Sept 1960

LYND, Langtry E

1-60 Alteration of ilmenite Econ. Geology, v 55, no. 5, p 1064-1068, Aug 1960.

2-60 Titanium, in Am. Inst Mining, Metall , and Petroleum Engineers, Industrial minerals and rocks, p 851-880 incl. map, diagram, and tables, 1960.

LYON, Charles Julius

1-60. (and HARRISON, Wyman) Rates of submergence of coastal New England and Acadia [Nova Scotia] Science, v 132, no 3422, p 295-296 incl. diagram, July 29, 1960.

LYON, Craig Alfred See also HANDY, Richard Lincoln 1-60, 2-60

1-60. (and HANDY, Richard Lincoln, and DAVIDSON, Donald Thomas) Property variations in the Wisconsin loess of east-central Iowa in Geologic and engineering properties of Pleistocene materials in Iowa Iowa State Univ Sci. and Technology, Iowa Eng. Expt. Sta Bull. 191 (Iowa State Highway Comm., Iowa Highway Research Board Bull. 20), p 44-64 incl index map, diagrams, tables, and illus , reprinted, Dec. 7, 1960, originally published 1954.

LYON, R. J. P See also TUDDENHAM, W M 1-60, 3-60

1-60 Time aspects of geothermometry Am Inst. Mining, Metall , and Petroleum Engineers Trans 1959, v 214, p. 1145-1151 incl. diagrams and table, 1960.

2-60. (and TUDDENHAM, W M.) Quantitative mineralogy as a guide in exploration Am Inst. Mining, Metall , and Petroleum Engineers Trans. 1959, v. 214, p 1233-1237 incl. diagrams, table, and illus , 1960

3-60 (and TUDDENHAM, William Marvin) Determination of tetrahedral aluminum in mica by infra-red absorption analysis Nature (London), v 185, no. 4710, p. 374-375, illus., Feb. 6, 1960.

4-60. (and TUDDENHAM, William Marvin) Infra-red determination of the kaolin group minerals Nature (London), v. 185, no 4716, p. 835-836, illus , Mar. 19, 1960.

5-60 (and TUDDENHAM, William Marvin) Infrared determination of kaolin group minerals Spectrochim Acta, V 16, no 5, p 611, June 1960.

LYONS, John B See STOIBER, Richard Edwin 1-60

LYONS, L. A See PAUL, H. P 1-60

LYONS, Sanford Carlisle. See MURRAY, Haydn Herbert 2-60

LYTLE, William Stuckley

1-60. History, present status, and future possibilities of secondary re-

## LYTLE

covery operations in Pennsylvania Pennsylvania Geol. Survey, 4th ser., Bull. M-41, p. 28-42, illus incl. geol. map, reprinted 1960, originally published 1959

2-60. (and others) Oil and gas developments in Pennsylvania in 1959. Pennsylvania Geol. Survey, 4th ser., Prog. Rept. 157, 54 p., illus., 1960.

LYYTIKAINEN, Hilpas T. E.

1-60. An analysis of radar profiles over mountainous terrain: Photogramm. Eng., v. 26, no 3, p. 403-412 incl. diagrams and tables, June 1960.

MAASLAND, Marinus See WALTON, William Clarence 2-60

MABEY, Don Russell

1-60. Regional gravity survey of part of the Basin and Range province Art. 130 in U. S. Geol. Survey Prof. Paper 400-B, p. B283-B285 incl. gravity map, 1960.

2-60 (and PAKISER, Louis Charles, Jr., and KANE, Martin Francis) Gravity studies in the Basin and Range Province [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt 2, p. 1920, Dec. 1960.

3-60. Gravity survey of the western Mojave Desert, California U. S. Geol. Survey Prof. Paper 316-D, p. 51-73, illus. incl. geol. maps, 1960.

McADIE, H. G. See FLECK, W. E. P. 1-60

McALEER, Joseph F.

1-60. A rotational fault block in the Madison River earthquake area [Montana], in West Yellowstone--Earthquake area Billings Geol. Soc., 11th Ann. Field Conf., Sept. 1960, [Guidebook] p. 56-60 incl. index map, diagram, and illus., 1960.

McALESTER, A Lee

1-60. Pelecypod associations and ecology in the New York Upper Devonian [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt 2, p. 1924, Dec. 1960.

McALLISTER, A L.

1-60. Massive sulphide deposits in New Brunswick, in Symposium on the occurrence of massive sulphide deposits in Canada Canadian Mining and Metall. Bull., v 53, no. 574, p. 88-98 incl. sketch maps, diagrams, and tables, Feb 1960, Canadian Inst. Mining and Metallurgy Trans., v. 63, p. 50-60, 1960

McALLISTER, D. E.

1-60. The origin and status of the deepwater sculpin, Myoxocephalus thompsoni, a Nearctic glacial relict Canada Natl. Mus. Bull. 172, p. 44-65 incl. sketch map, diagrams, and tables, 1960.

McANDREWS, John H.

1-60. A pollen diagram from the site of Glacial Lake Aitkin [abs.]: Minnesota Acad. Sci. Proc. 1959, v. 27, p 129, 1960.

McBRYDE, William A. E. See BOUNSALL, E. J. 1-60

McCALL, J. Mabel

1-60. Fossils of Humboldt County [California]. Gems & Minerals, no. 268, p 28-29, 82 incl. illus., Jan. 1960

McCALLUM, John Stewart

1-60. Pre-Matawan Cretaceous sediments [Atlantic Coastal Plain] [abs.] Am Assoc. Petroleum Geologists Bull., v 44, no. 7, p 1253, July 1960.

McCALLUM, Kenneth James

1-60. (and DYCK, Willy J.) University of Saskatchewan radiocarbon dates, [Pt.] 2 Am. Jour. Sci. Radiocarbon Supp., v. 2, p 73-81, 1960.

McCAMMON, Helen

- 1-60 Fauna of the Manitoba group in Manitoba. Manitoba Dept. Mines and Nat Resources Mines Br Pub 59-6, 109 p., illus., 1960.

McCAMMON, Richard Baldwin

- 1-60. Efficiency of graphic measures for describing the mean size and sorting of sediments [abs.] Geol Soc. America Bull., v. 71, no. 12, pt. 2, p 1924-1925, Dec. 1960.
- 2-60. Sedimentology and origin of the alluvial terraces along the Wabash Valley [Indiana] [abs.] Dissert. Abs., v 20, no. 10, p. 4078, Apr. 1960.

MacCARTHY, Gerald Raleigh

- 1-60 The formation of joints as a possible cause of certain seismic phenomena [abs.] Jour. Geophys. Research, v 65, no. 8, p 2508, Aug. 1960.
- 2-60. The formation of joints as a possible cause of certain seismic phenomena Southeastern Geology, v. 1, no. 4, p 117-119, 1959 [Apr. 1960].

McCARTNEY, James Thomas See ERGUN, Sabri 3-60

McCASLIN, John Calvin

- 1-60 Tennessee may be next big shallow-play target Oil and Gas Jour., v 58, no. 1, p 127, Jan. 4, 1960.
- 2-60. Deeper drilling may tap new eastern reserves [United States and Ontario] Oil and Gas Jour., v. 58, no 3, p. 131 incl. chart, Jan. 18, 1960.
- 3-60. Bigger gas reserves are needed [United States and Canada] Oil and Gas Jour., v 58, no 23, p 176-178 incl. sketch map, June 6, 1960.
- 4-60 Drillers show new regard for Panhandle Permian [Kansas-Oklahoma-Texas]. Oil and Gas Jour., v 58, no. 23, p 180-181 incl. index map, and tables, June 6, 1960.
- 5-60. Green River basin turns up rare Mesaverde oil [Wyoming] Oil and Gas Jour., v. 58, no. 34, p 127 incl. sketch map, Aug 22, 1960
- 6-60. Ten-year search may be on verge of a payoff [Williston basin] Oil and Gas Jour., v. 58, no. 43, p. 165 incl index map and section, Oct 24, 1960.

McCAULEY, Camilla K

- 1-60. Exploration for heavy minerals on Hilton Head Island, South Carolina South Carolina State Devel. Board Div. Geology Bull. 26, 13 p incl. tables, also sketch map, 1960.
- 2-60. Exploration for heavy minerals on Hilton Head Island, S. C [abs.] South Carolina State Devel. Board Div Geology Geol Notes, v. 4, no. 4, p [35], July-Aug. 1960.

McCAULEY, John F.

- 1-60. Carolina "slate" group and the Charlotte belt in Newberry County, South Carolina [abs.] Geol Soc. America Bull., v. 71, no. 12, pt 2, p 2021, Dec. 1960
- 2-60 A preliminary report on the gabbros of Newberry County, South Carolina South Carolina State Devel. Board Div. Geology Geol Notes, v 4, no. 5, p. 41-43, illus., Sept.-Oct 1960

MacCHESNEY, John Burnette

- 1-60. (and MUAN, Arnulf) The system iron oxide-TiO<sub>2</sub>-SiO<sub>2</sub> in air Am. Ceramic Soc. Jour., v 43, no 11, p 586-591 incl diagrams, Nov 1, 1960
- 2-60. (and MUAN, Arnulf) The system iron oxide-TiO<sub>2</sub>-SiO<sub>2</sub> in air [abs.] Am Ceramic Soc Bull., v 39, no. 4, p 187, Apr 1960
- 3-60. Phase equilibria in the system iron oxide-titania-silica [abs.] Dissert. Abs., v. 20, no 9, p. 3532-3533, Mar 1960

McCLEARY, John Thompson See KELLEY, Vincent Cooper 1-60

MacCLINTOCK, Paul

- 1-60 (and TERASMAE, Jaan) Glacial history of Covey Hill [New York-Quebec] Jour Geology, v 68, no. 2, p 232-241 incl sketch maps, diagrams, and profile, Mar. 1960

## McCOLLUM

McCOLLUM, Elmer Verner

1-60 Geophysical parameters Geophysics, v 25, no 1, p 92-94, Feb 1960

McCONIGA, M. W See BROWN, Randall Emory 3-60

McCONNELL, Duncan See also POSNER, A S 1-60

1-60 The crystal chemistry of dahlite Am Mineralogist, v 45, nos. 1-2, p 209-216 incl tables and illus , Jan.-Feb. 1960

McCONNELL, G W.

1-60 An analysis of the economic potential of the Bathurst district base metal deposits [New Brunswick] [abs ] Canadian Mining Jour , v 81, no 2, p 226, Feb 1960

McCORD, Wallace Ronald See also HAUGHT, O L 5-60

1-60. Map of West Virginia showing structural contours on top of Onondaga limestone-Huntersville chert with deep well locations West Virginia Geol and Econ Survey, scale 1 250,000 (about 1 in to 4 mi.), 1960

McCOY, John J.

1-60. The fossil birds of the Itchtucknee River, Florida [abs.] Dissert. Abs., v. 20, no. 12, p. 4760, June 1960.

McCRACKEN, Ralph J.

1-60. (and WEED, S. B., and NELSON, L. A ) A survey of clay minerals in North Carolina soil profiles [abs.] Elisha Mitchell Sci. Soc. Jour , v 76, no 2, p 187, Nov 1960

McCRADY, Allen D

1-60 Prospecting limestone areas for Pleistocene vertebrate fossils Soc. Vertebrate Paleontology News Bull 60, p 30-33, illus , Oct. 1960

McCREHAN, Richard H See STOIBER, Richard Edwin 1-60

McCROSKY, Richard Eugene

1-60. A proposal for the observation of meteorites in flight and their recovery [abs ] Jour Geophys Research, v 65, no. 8, p 2508, Aug. 1960

McCROSSAN, Robert George

1-60. A natural scale structural section of western Canada with earth curvature [abs ] Canadian Oil and Gas Industries, v 13, no 4, p 102, Apr 1960

McCULLOCH, David Sears

1-60. (and MOSER, Frank, and BRIGGS, Louis Isaac, Jr ) Hydraulic shape of mineral grains [abs ] Geol Soc America Bull , v 71, no. 12, pt 2, p 1925, Dec 1960.

McCULLOH, Thane Hubert

1-60. Gravity variations and the geology of the Los Angeles Basin of California Art 150 in U S. Geol Survey Prof. Paper 400-B, p B320-B325 incl. structure contour and gravity maps, sections, and diagram, 1960

McCUTCHEON, Virginia A. See LANGENHEIM, R L , Jr 2-60

MacDIARMID, Roy Angus

1-60 Application of thermoluminescence to prospecting for hydrothermal ores [abs ] Geol. Soc America Bull , v 71, no 12, pt 2, p 1920, Dec. 1960, Econ Geology, v 55, no. 6, p 1340-1341, Sept -Oct 1960.

2-60 Controls on ore deposition at the Bristol silver mine, Pioche, Nevada [abs ] Geol Soc America Bull , v 71, no 12, pt 2, p 1921, Dec 1960, Econ Geology, v 55, no 6, p 1337-1338, Sept -Oct 1960

3-60 Geology and ore deposits of the Bristol Silver Mine, Pioche, Nevada [abs ] Dissert Abs., v 21, no 1, p 170, July 1960

McDIVITT, James Frederick

1-60. Progress and problems in the search for ore Mineral Industries, v 30, no 3, p 6-7, Dec 1960

McDONALD, Donald E See BROWNE, Ruth G 1-60, 2-60



## MACDONALD, Gordón Andrew

- 1-60. Prediction of eruption of Hawaiian volcanoes [abs.] Bull. Volcanol. (Naples, Italy), sér 2, tome 23, p 211, 1960
- 2-60 (and DAVIS, Daniel Arthur, and COX, Doak Carey) Geology and ground-water resources of the Island of Kauai Hawaii Div. Hydrography Bull 13, 212 p, illus. incl geol maps, 1960
- 3-60. Dissimilarity of continental and oceanic rock types Jour. Petrology (Oxford, England), v 1, no 2, p 172-177 incl table, June 1960

## MacDONALD, Gordon J F See also KNOPOFF, Leon 1-60, 3-60, MUNK, W. H 1-60

- 1-60. (and NESS, Norman Frederick) Stability of phase transitions within the earth Jour. Geophys Research, v 65, no 7, p 2173-2190 incl diagrams and tables, July 1960.
- 2-60. Orientation of anisotropic minerals in a stress field, Chap. 1 in Griggs, D. T, ed, Rock deformation--A symposium Geol Soc. America Mem 79, p 1-8, 1960.
- 3-60. Tectonic theories Am. Geophys Union Trans, v. 41, no 2, p. 168-169, June 1960

## McDONALD, Harris Robert

- 1-60. (and WANTLAND, Dart) Geophysical procedures in ground water study Am Soc. Civil Engineers Proc, v. 86, paper 2589, Jour. Irrigation and Drainage Div., no IR 3, pt 1, p 13-26, illus., Sept. 1960

## MACDONALD, James Reid See also MATTHEW, W. D 1-60

- 1-60 An early Pliocene fauna from Mission, South Dakota Jour Paleontology, v 34, no. 5, p 961-982 incl. index map, diagrams, tables, and illus, Sept 1960
- 2-60 James Dye Bump, 1903-1959 Soc. Vertebrate Paleontology News Bull 58, p 33, portrait, Feb 1960.

## MacDONALD, R. A

- 1-60 Potash--Occurrences, processes, production, Chap. 15 in Chemistry and technology of fertilizers, Sauchelli, V, ed New York, N Y., Reinhold Publishing Corp, p 367-402 incl. diagrams, tables, and illus., 1960

## MACDONALD, Roderick Dickson

- 1-60. Iron deposits of Wabush Lake, Labrador Mining Eng, v 12, no. 10, p 1098-1102 incl sketch maps, sections, and chart, Oct 1960.
- 2-60. Gravitric exploration for iron in Labrador [abs] Canadian Mining and Metall. Bull, v 53, no 575, p 194, Mar 1960.

## MacDONALD, William Delbert

- 1-60 The Upper Devonian Kettle Point Formation of Ontario Canadian Mining and Metall Bull., v. 53, no. 583, p. 844-847 incl geol. and other sketch maps, chart, and illus., Nov. 1960, Canadian Inst. Mining and Metallurgy Trans., v. 63, p. 569-572, 1960

## McDOWELL, Fred W. See BEERBOWER, James Richard 2-60

## McDOWELL, J Spotts. See CLARK, C Burton 1-60

## McDOWELL, John Parmelee

- 1-60. Cross-bedding formed by sand waves in Mississippi River point-bar deposits [abs] Geol. Soc America Bull., v 71, no. 12, pt 2, p. 1925, Dec. 1960

## MacELVAIN, Robert C See JONES, Walter Bryan 2-60, WHITE, H Gene 1-60

## MacFADYEN, John Archibald, Jr

- 1-60. Clay as a model material in structural geology [abs] Jour Geophys Research, v 65, no 8, p 2508, Aug. 1960.

## McFALL, C Carew

- 1-60 Geology of the Escalante-Boulder area, south-central Utah [abs] Geol Soc. America Bull, v 71, no 12, pt. 2, p 2067, Dec 1960

## McFARLAN

McFARLAN, Arthur Crane See also NOSOW, Edmund 2-60

1-60. Some local cherts [abs.] Geol Soc America Bull , v 71, no 12, pt. 2, p 2021, Dec 1960.

2-60. (and NOSOW, Edmund) New road cuts on U S Highway 68, Mason County, Kentucky [abs.] Geol Soc America Bull., v 71, no 12, pt 2, p 2021, Dec. 1960

MacFARLANE, Robert M

1-60. (and AULT, Ronald Keith) Nuclear logging in the Appalachian Basin World Oil, v 150, no 7, p 153-154, 160, 164 incl diagrams, June 1960

MACFARLANE, Ronald Duncan

1-60. Natural occurrence of samarium-146 Nature (London), v. 188, no 4757, p 1180-1181 incl diagram and table, Dec 31, 1960

McGAVOCK, E H See also MITCHELL, R S 2-60

1-60 (and MITCHELL, Richard Scott) Comments on apatite from the Morefield Mine, Amelia County, Virginia [abs.] Virginia Jour Sci , v 11, no 4, p 211, Sept 1960

McGERRIGLE, J I

1-60 Preliminary report on Ste-Adèle area, Terrebonne electoral district Quebec Dept Mines Mineral Deposits Br. Prelim Rept. 431, 8 p , geol. map, 1960, also French ed

McGILL, John Thomas See also PUTNAM, W C 4-60

1-60. Selected bibliography of coastal geomorphology of the world Los Angeles, Calif., William C Putnam, 50 p , 1960

McGLAMERY, Winnie

1-60. (and HASTINGS, Earl L.) Guidebook to selected outcrops of the Eutaw formation and Selma group near Montgomery, Alabama Alabama Geol. Survey Inf. Ser. 18, 14 p., illus. incl. geol. map, Apr. 2, 1960. (Sponsored by Alabama Geol. Survey and Alabama Acad. Sci.)

McGOOKEY, Donald Paul See also WYOMING GEOLOGICAL ASSOCIATION 1-60

1-60 Early Tertiary stratigraphy of part of central Utah Am. Assoc Petroleum Geologists Bull , v 44, no 5, p 589-615 incl geol maps, index map, sections, tables, and illus , May 1960

2-60 (and MILLER, Daniel Newton, Jr ) Facts concerning the early development of the Dry Piney Oil Field [Wyoming], and confusion of the same with the surrounding area--Taken from a geological report by Chas Lackey, March, 1921, in Overthrust belt of southwestern Wyoming and adjacent areas Wyoming Geol Assoc , 15th Ann. Field Conf , 1960, Guidebook, p 31-35, 1960.

McGOWAN, G E

1-60 The determination of fluorine in coal--An adaptation of spectrophotometric methods Fuel (London), v 39, no 3, p 245-252 incl diagram and tables, May 1960.

McGRAIN, Preston

1-60 (and CRAWFORD, Thomas J ) [Guidebook] A physiographic and stratigraphic profile in Kentucky--Lexington to the Mammoth Cave region Geol. Soc America Southeastern Sec Field Trip [no 2], Mar 26, 1960, 39 p. incl geol and sketch maps, sections, and illus , 1960 (Published by Kentucky Geological Survey, Lexington.)

2-60 (and KENDALL, Thomas A , and TEATER, Thelma C ) Miscellaneous clay and shale analyses for 1957-1959 Kentucky Geol Survey, ser. 10, Rept Inv 3, p 4-57, illus , 1960

McGRATH, B R G

1-60 Swansea Cave, St Catherine [Jamaica] Geonotes, v 3, pt 1, (Jamaica Geol Survey Pub. 60) p 23-26, illus , Apr 1960

McGRATH, P H.

1-60 (and KRAMER, James Richard) Apparent supersaturation of calcium carbonate in sea water [abs.] Geol Soc. America Bull , v. 71, no 12, pt. 2, p 1926, Dec. 1960

## McGREGOR, Duncan Colin

- 1-60. Devonian spores from Melville Island, Canadian Arctic Archipelago  
Palaeontology (London), v. 3, pt 1, p. 26-44, illus., May 1960.

## McGREGOR, Duncan Junior

- 1-60 Gravels of Indiana Indiana Geol Survey Rept Prog. 17, 53 p.,  
illus incl geol map, Feb. 1960  
2-60 The lowly nonmetallics [abs ] Indiana Acad. Sci. Proc. 1959, v. 69,  
p 184, 1960

## McGREGOR, Ian D. See PHEMISTER, Thomas Crawford 3-60, SMITH, Charles H 1-60

## McGREW, Paul Orman

- 1-60 (and ROEHLER, Henry William) Correlation of Tertiary units in  
southwestern Wyoming, in Overthrust belt of southwestern Wyoming and  
adjacent areas Wyoming Geol Assoc., 15th Ann Field Conf., 1960, Guide-  
book, p 156-158 incl chart, 1960.

## McGUGAN, Alan

- 1-60. A new species of the pelecypod Megalodon from the Permo-Carbon-  
iferous of the Banff area, Alberta Jour Paleontology, v. 34, no. 1, p. 101-  
106 incl sketch map and sections, illus, Jan 1960  
2-60. Upper Cretaceous Foraminifera from Vancouver Island, British  
Columbia, Canada [abs ] Geol Soc. America Bull, v 71, no. 12, pt 2,  
p 2067, Dec 1960  
3-60 (and RAPSON, June E ) Stratigraphy of the Norquay formation, Rocky  
Mountain group, Banff area, Alberta Alberta Soc. Petroleum Geologists  
Jour, v. 8, no 1, p. 1-12 incl. index map and sections, Jan. 1960, correc-  
tions, no 2, p. 79, Feb 1960, discussion by J. K Rigby, no. 6, p. 179-181,  
June 1960.

## McGUINNESS, Charles Lee

- 1-60 Ground water--A mixed blessing Internat Geol Cong, 21st, Copen-  
hagen, 1960, Rept., pt. 20, p 7-16 incl. ground-water map, 1960

## McINTIRE, William Leigh

- 1-60 A thermodynamic treatment of trace element distribution in geologic  
systems with applications to geologic thermometry [abs.] Massachusetts  
Inst. Technology Abs Theses 1958-59, p 171-173, 1960.

## McIVER, Normal L.

- 1-60 Upper Devonian paleocurrents in the central Appalachian Mountains  
[abs ] Geol Soc America Bull., v. 71, no. 12, pt. 2, p. 1926, Dec. 1960

## McJANNET, G. S

- 1-60 (and CLARK, E. W.) County Line structure, Nye and White Pine  
Counties, Nevada, in Geology of east central Nevada Intermountain Assoc.  
Petroleum Geologists, 11th Ann. Field Conf., 1960 Guidebook, p. 245-247  
incl. section, 1960.  
2-60 (and CLARK, E. W ) Drilling of the Meridian, Hayden Creek and Sum-  
mit Springs structures, in Geology of east central Nevada Intermountain  
Assoc. Petroleum Geologists, 11th Ann Field Conf, 1960 Guidebook, p 248-  
250 incl. sections, 1960.

## MACK, Seymour

- 1-60 Geology and ground-water features of Shasta Valley, Siskiyou County,  
California U S. Geol. Survey Water-Supply Paper 1484, 115 p., illus incl.  
geol. map, 1960.

## MACKAY, Douglas Griffiths

- 1-60. (and PATERSON, Norman R.) Geophysical discoveries in the Matta-  
gami, Quebec Canadian Mining and Metall. Bull, v. 53, no. 581, p 703-  
709 incl. index and sketch maps and diagrams, Sept. 1960, Canadian Inst.  
Mining and Metallurgy Trans., v. 63, p. 478-484, 1960.

## MACKAY

MACKAY, John Ross. See also MATHEWS, W. H. 2-60, 3-60

- 1-60. Glacier ice-thrust features of the Yukon coast Canada Dept. Mines and Tech. Surveys Geog. Br. Geog. Bull. 13, p. 5-21, illus., 1959 [1960].
- 2-60. Crevasse fillings and ablation slide moraines, Stopover Lake area, N.W.T. Canada Dept. Mines and Tech. Surveys Geog. Br. Geog. Bull. 14, p. 89-99, illus., with French abs., 1960.
- 3-60. (and BROWN, Roger J. E.) Geomorphology of the Mackenzie Delta area, Northwest Territories [abs.] Royal Soc. Canada Minutes Proc., 3d ser., v. 54, App. C, p. 36, 1960

McKEE, Bates

- 1-60. Tectonic significance of the phase change--Plagioclase  $\rightarrow$  jadeite + quartz [abs.]. Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1926-1927, Dec 1960.

McKEE, Edwin Dinwiddie

- 1-60. Lithologic subdivisions of the Redwall limestone in northern Arizona-- Their paleogeographic and economic significance Art. 110 in U. S. Geol. Survey Prof. Paper 400-B, p. B243-B245 incl. isopach maps, 1960.
- 2-60. Spatial relations of fossils and bedded cherts in the Redwall limestone, Arizona Art. 210 in U. S. Geol. Survey Prof. Paper 400-B, p. B461-B463 incl. sections, 1960.
- 3-60. Cycles in carbonate rocks Am. Jour. Sci., v. 258-A (Bradley Volume), p. 230-233 incl. diagram, 1960.
- 4-60. Laboratory experiments on form and structure of offshore bars and beaches [abs.] Am. Assoc. Petroleum Geologists Bull., v. 44, no. 7, p. 1253, July 1960.

McKEE, William Dean, Jr

- 1-60.  $Al_2O_3$ - $MgTiO_3$  solid solution [abs.] Am. Ceramic Soc. Bull., v. 39, no. 4, p. 185, Apr. 1960.

McKELVEY, Vincent Ellis

- 1-60. Relations of reserves of the elements to their crustal abundance Am. Jour. Sci., v. 258-A (Bradley Volume), p. 234-241 incl. diagrams and table, 1960.
- 2-60. [compiler] Geological Survey research 1960--Synopsis of geologic results U.S. Geol. Survey Prof. Paper 400-A, p. A1-A136, 1960.

McKENNA, Malcolm Carnegie

- 1-60. Fossil Mammalia from the early Wasatchian Four Mile fauna, Eocene of northwest Colorado California Univ. Pubs. Geol. Sci., v. 37, no. 1, p. 1-130, illus. incl. geol. map, June 10, 1960
- 2-60. The geolabidinae--a new subfamily of early Cenozoic erinaceoid insectivores California Univ. Pubs. Geol. Sci., v. 37, no. 2, p. 131-164, illus., July 15, 1960.
- 3-60. *Tapochoerus*, a Uintan dichobunid artiodactyl from the Sespe formation of California Southern California Acad. Sci. Bull., v. 58, pt. 3, p. 125-132, illus., Sept.-Dec. 1959 [Jan. 15, 1960].
- 4-60. A continental Paleocene vertebrate fauna from California Am. Mus. Novitates, no. 2024, 20 p. incl. illus., Nov. 29, 1960

MacKENZIE, Graham Stewart. See CANADA GEOL. SURVEY, 15-60, 16-60

MACKENZIE, John Douglas

- 1-60. Fusion of quartz and cristobalite Am. Ceramic Soc. Jour., v. 43, no. 12, p. 615-620 incl. diagrams, tables, and illus., Dec 1, 1960
- 2-60. (and WHITE, Jack Lee) The Si-O-Si angle and the structure of vitreous silica Am. Ceramic Soc. Jour., v. 43, no. 3, p. 170-171 incl. diagram and table, Mar 1, 1960.

MacKENZIE, W. Bruce. See WALLACE, Stewart Raynor 1-60

McKEOWN, Francis Alexander See also WILMARTH, V. R. 2-60

- 1-60. (and DICKEY, Dayton Delbert) Some relations between geology and

- effects of underground nuclear explosions at Nevada Test Site, Nye County, Nevada Art. 190 in U. S. Geol Survey Prof. Paper 400-B, p. B415-B418 incl. diagrams, 1960
- 2-60. (and DICKEY, Dayton Delbert) Interim report on geologic investigations of the U12e tunnel system, Nevada Test Site, Nye County, Nevada U. S. Geol Survey Trace Elements Inv. Rept. TEI-772, 17 p., illus. incl. geol. maps, Sept 1960.
- MacKEVETT, Edward Malcolm, Jr. See also BERG, H. C 2-60, SAINSBURY, C L. 1-60
- 1-60. Geology and ore deposits of the Kern River uranium area, California U. S. Geol. Survey Bull 1087-F, p. 169-222 incl. index maps, diagrams, and tables, also geol and mine maps and sections and illus., 1960.
- 2-60 Types of uranium-thorium deposits near Bokan Mountain, Prince of Wales Island, Alaska [abs.] Alaskan Sci Conf., 10th, Juneau, Aug 25-28, 1959, Proc., p. 112-113, Dec. 1960.
- 3-60. Geology of the Ross-Adams uranium-thorium deposit, Alaska Am. Inst. Mining, Metall., and Petroleum Engineers Trans. 1959, v. 214, p. 915-919 incl. index and geol sketch maps, diagram, tables, and illus., 1960.
- MACKIN, Joseph Hoover
- 1-60. (and INGERSON, Earl) An hypothesis for the origin of ore-forming fluid Art. 1 in U. S. Geol. Survey Prof Paper 400-B, p. B1-B2, 1960.
- 2-60 Structural significance of Tertiary volcanic rocks in southwestern Utah Am. Jour Sci., v. 258, no. 2, p. 81-131 incl. sketch map, diagrams, and table, Feb 1960
- 3-60 Eruptive tectonic hypothesis for origin of basin-range structure [abs.] Geol Soc America Bull., v. 71, no. 12, pt 2, p. 1921, Dec 1960
- 4-60. Geology of the Priest Rapids and Wanapum dam sites on the Columbia River in south-central Washington [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt 2, p. 2066, Dec 1960
- McKINNEY, Charles. See SILVER, Leon T. 2-60
- McKINNEY, William Alan. See DALE, Vernon B. 1-60
- McKINSTRY, Herbert Alden. See BRINDLEY, George William 3-60
- McKINSTRY, Hugh
- 1-60. The system Cu-Fe-S-O Econ Geology, v. 55, no. 6, p. 1314, Sept - Oct. 1960. (Correction to author's paper, v. 54, p. 975-1001, 1959.)
- McLAREN, I A
- 1-60. Are Pinnipedia biphyletic? Systematic Zoology, v. 9, no. 1, p. 18-28, Mar. 1960.
- McLAUGHLIN, Dean Benjamin. See also DRAKE, A. A. Jr. 2-60
- 1-60. Notes on the New Oxford formation and the limestone conglomerate at Conoy Creek, in Some tectonic and structural problems of the Appalachian Piedmont along the Susquehanna River Pennsylvania Geologists, 25th Ann. Field Conf., Oct. 1960, Guidebook, p. 84-88 incl. geol. sketch map, 1960
- McLAUGHLIN, Robert Everett
- 1-60 Palynology and its application to geological problems in the south-east [abs.] Geol Soc America Bull., v. 71, no. 12, pt 2, p. 2022, Dec. 1960
- McLAUGHLIN, Thad Gerald
- 1-60. San Luis Valley, in Rocky Mtn. Assoc. Geologists, Geological road logs of Colorado Denver, p. 89-90, 1960
- McLEAN, Douglas D.
- 1-60. Deadwood and Winnipeg stratigraphy in east-central Saskatchewan Saskatchewan Dept. Mineral Resources Rept 47, 37 p., illus., 1960.

## McLEAN

McLEAN, James Douglas, Jr.

- 1-60. Stratigraphy of the Parris Island area, South Carolina McLean Paleont. Lab. Rept. 4, unpagged, illus , 1960.

McLEARN, Frank Harris

- 1-60. Revision of some Anisian (Middle Triassic) ammonoids [British Columbia] Canadian Field Naturalist, v. 74, no. 1, p. 53, Jan.-Mar. 1960.  
2-60. Ammonoid faunas of the Upper Triassic Pardonet formation, Peace River Foothills, British Columbia. Canada Geol. Survey Mem. 311, 118 p. incl. sketch maps, tables, and section, illus , with French abs., 1960.

McLEOD, Harold

- 1-60. Minerals output value sets record in 1959 Canadian Mining Jour., v. 81, no. 2, p. 93-104 incl. diagrams and tables, Feb 1960.

McLEOD, Richard Royce

- 1-60. Theory for formation of limestone cap rock of salt domes [abs.] Am. Assoc. Petroleum Geologists Bull., v. 44, no. 9, p. 1602, Sept. 1960.  
2-60. A theory for the formation of limestone cap rock of salt domes. Gulf Coast Assoc. Geol. Socs. Trans., v. 10, p 151-153 incl diagrams, 1960.

McLERRAN, James Herschel

- 1-60. Airphoto interpretation for airfield site location Am. Soc. Civil Engineers Proc., v. 86, paper 2467, Jour. Air Transport Div., no AT 1, p 73-90 incl. sketch maps and illus., May 1960.

McMANNIS, William J.

- 1-60. Coarse facies of the Belt series, southwestern Montana [abs.]. Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p 1927, Dec. 1960.

McMANUS, Dean Alvis

- 1-60. Stratigraphy and depositional history of the Kearny Formation (Lower Pennsylvanian) in western Kansas [abs.] Dissert. Abs., v. 20, no. 10, p. 4078-4079, Apr. 1960

McMASTER, Philip Duryee

- 1-60. (and HEIDELBERGER, Michael) Florence Rena Sabin, November 9, 1871-October 3, 1953 Natl. Acad. Sci. Biog Mem., v. 34, p 271-319, portrait, 1960.

McMASTER, Robert Luscher

- 1-60. Mineralogy as an indicator of beach sand movement along the Rhode Island shore. Jour. Sed. Petrology, v. 30, no 3, p 404-413 incl index and sketch maps, diagram, and tables, Sept. 1960.  
2-60. Sediments of Narragansett Bay system and Rhode Island Sound, Rhode Island Jour. Sed. Petrology, v. 30, no 2, p 249-274 incl. index, sediment distribution, and sketch maps, and tables, June 1960.

McMASTER, William M.

- 1-60. Interim report on ground-water studies in the Athens area, Alabama, through January 1960 Alabama Geol Survey Inf. Ser. 23, 72 p , illus., 1960.

McMILLAN, Neil John

- 1-60. Soils of the Queen Elizabeth Islands (Canadian Arctic) Jour Soil. Sci. (Oxford, England), v. 11, no. 1, p 131-139, illus., Mar 1960

McMILLAN, Robert T.

- 1-60. Salt, in Am. Inst. Mining, Metall , and Petroleum Engineers, Industrial minerals and rocks, p. 713-731 incl map, diagram, and tables, 1960

McMILLAN, William Duncan

- 1-60. Report of the Bureau of Mines--Report on mineral resources in the proximity of the San Juan-Chama irrigation projects, southern Colorado and northern New Mexico, in San Juan-Chama and Navajo Indian projects U. S. Cong., 86th, 2d sess , House Doc. 424, p. 132-139 incl. table, index map, 1960

McMURCHY, Robert Connell

- 1-60. Geology of the Saganash Lake--Wakusimi River area Ontario Dept. Mines [Ann Rept ] 1960, v. 69, pt 3, 19 p., illus. incl geol. map, 1960.

McMURDIE, Howard Francis

- 1-60. (and SWANSON, Howard Eugene) Standard X-ray powder patterns at the National Bureau of Standards [abs ] Acta Cryst , v 13, pt. 12, p. 1098, Dec 1960.

McMURTREY, Robert Gale See HACKETT, Orwoll Milton 1-60

McMURTRY, Wilbur E. See WORDEN, John A. 1-60

McNAIR, Andrew Hamilton

- 1-60. Relations of the Parry Island fold belt to the Cornwallis folds, eastern Bathurst Island, Northwest Territories [abs.] Oil in Canada, v. 12, no 16, p 32, Feb 15, 1960.

McNEAL, Robert Paul

- 1-60. (and MILLER, Floyd Henry, Jr ) Gas in Gallup and "Tocito" formations in San Juan basin, New Mexico [abs.] Am. Assoc. Petroleum Geologists Bull., v 44, no. 6, p 958, June 1960.  
2-60. (and MILLER, Floyd Henry, Jr.) The gas of the Gallup and "Tocito" formations in the San Juan Basin, New Mexico Am. Assoc. Petroleum Geologists Rocky Mtn. Sec. Geol. Record 1960, p 35-42 incl illus [1960].

MacNEIL, Francis Stearns. See HOPKINS, David Moody, 1-60 2-60

McNITT, James R.

- 1-60. Geothermal power California Div. Mines Mineral Inf. Service, v. 13, no 3, p. 1-9, illus., Mar. 1960.

McNULTY, Charles Lee, Jr. See BOON, J. A. 1-60

MACPHERSON, J. D.

- 1-60 Anisotropy of the rock in the approaches to Halifax Harbour, Nova Scotia Seismol. Soc. America Bull., v. 50, no. 4, p. 575-579 incl. sketch map, diagrams, and table, Oct. 1960.

McQUEEN, Irel S. See ROLFE, Bernard Nathan 1-60

MACQUEEN, R. W. See also OLLERENSHAW, N. C. 1-60

- 1-60. Sedimentation and diagenesis of the lower Fairholme Group in Jasper Park, Alberta [abs.] Canadian Mining Jour., v. 81, no 12, p. 109, Dec. 1960.

McTAGGART, Kenneth Cunningham. See also GREEN, L. H. 2-60

- 1-60. The mobility of nuées ardentes. Am. Jour. Sci , v. 258, no. 5, p. 369-382 incl. diagrams, May 1960  
2-60. The geology of Keno and Galena Hills, Yukon Territory (105 M) Canada Geol. Survey Bull 58, 37 p. incl. index and sketch maps, diagrams, and illus., geol map, with French abstract, 1960.

McTHENIA, Andrew Wolfe, Jr.

- 1-60. Geology of the Madison River canyon area north of Ennis, Montana, in West Yellowstone--Earthquake area Billings Geol. Soc., 11th Ann. Field Conf., Sept. 1960, [Guidebook] p 155-164 incl. index and geol. sketch maps, diagrams, and tables, 1960.

McVAY, Thomas Newkirk See also WEAVER, C. F. 1-60

- 1-60. Field test for beryllium minerals--The Morin fluorescence method. U. S. Bur. Mines Rept. Inv. 5620, 10 p. incl. table and illus., 1960.

MADDEN, Theodore R. See also CANTWELL, Thomas 1-60

- 1-60 (and CANTWELL, Thomas, and HAUCK, Anthony M.) Electrical con-

## MADDEN

ductivity structure of the crust under Massachusetts determined from resistivity and magnetotelluric measurements [abs] Jour Geophys Research, v 65, no. 8, p 2509, Aug. 1960

MADDOCK, Thomas, Jr.

1-60. Erosion control on Five Mile Creek, Wyoming Internat. Assoc. Sci. Hydrology (Gentbrugge, Belgium) Pub. 53, p. 170-181 incl. sketch map and diagrams, 1960.

MADSEN, Beth Marie See CHAO, Edward Ching-Te 2-60

MAGAS, Istvan Osscar

1-60. Geology and reservoir characteristics of the Glen Ewen field, Saskatchewan Saskatchewan Dept Mineral Resources Rept. 48, 62 p incl. index and sketch maps, diagrams, and tables, cross sections, 1960.

MAGEE, J. B.

1-60. (and CUMMINGS, W. W.) The Mineral King mine [British Columbia] Canadian Mining and Metall Bull., v. 53, no. 578, p. 389-391 incl. tables, June 1960, Canadian Inst. Mining and Metallurgy Trans., v. 63, p. 242-244, 1960

MAGILL, Elwin A.

1-60. Manganese deposits of the Olympic Peninsula, Wash. U S. Bur. Mines Rept. Inv 5530, 82 p. incl. index and sketch maps, diagrams, and illus., 1960.

MAGIN, George B., Jr.

1-60 (and THATCHER, Leland L., and RETTIG, Shirley Louise, and LEVINE, Harry) Suggested modified method for colorimetric determination of selenium in natural water Am. Water Works Assoc. Jour., v 52, no. 9, p. 1199-1205 incl. diagrams and tables, Sept. 1960

MAGRATH, C. B.

1-60. Multiple signals cause seismic problems at Taber [Alberta] Oilweek, v. 11, no. 38, p. 38-39, Nov. 5, 1960.

MAGUIRE, Edward A., Jr. See BLUM, Seymour L. 1-60

MAHER, John Charles

1-60. Paleozoic deposition in northern Arkansas, in North-eastern Oklahoma Kansas Geol. Soc., 25th Field Conf., Sept 1960, Guidebook, p. 113-117, illus., 1960.

2-60. (editor). Stratigraphic cross section of Paleozoic rocks -- West Texas to Northern Montana Tulsa, Okla., Am. Assoc. Petroleum Geologists, 18 p, illus., Sept 1960.

MAIR, J. A.

1-60 (and others) Isotopic evidence on the origin and age of the Blind River uranium deposits [Ontario] Jour Geophys Research, v. 65, no. 1, p 341-348 incl. diagram and tables, Jan 1960.

MAJEWSKE, Otto P. See WILSON, James Lee 1-60

MAJOR, Maurice W. See OLIVER, Jack Ertle 3-60

MALAUURIE, Jean M.

1-60. Gélifraction, éboulis et ruissellement sur la côte nord-ouest du Groenland Zeitschr. Geomorphologie (Berlin), Supplementband 1, p. 59-68, 1960.

MALAVASSI V, Enrique

1-60. Una localidad del Cretácico Superior de Costa Rica Costa Rica Dept. Geología, Minas y Petróleo Informes, año 1, no. 2, p 5-8, Sept. 1960.



## MALDE, Harold Edwin

- 1-60. Evidence in the Snake River Plain, Idaho, of a catastrophic flood from Pleistocene Lake Bonneville Art 135 in U. S. Geol. Survey Prof Paper 400-B, p. B295-B297, 1960.
- 2-60. Geological age of the Claypool site, northeastern Colorado Am. Antiquity, v 26, no 2, p. 236-243 incl. index and geol sketch maps, Oct. 1960

## MALDONADO-KOERDELL, Manuel

- 1-60 La obra geomorfológica de Ramiro Robles Ramos [1900-1960] Soc. Mexicana Historia Nat. Rev., tomo 21, no 2, p. 541-548, Dec 1960

## MALEY, Richard P. See also LANDER, J F. 1-60

- 1-60. Hebgen Lake, Montana, earthquake--Results obtained from Coast and Geodetic Survey investigations [abs.] Geol. Soc. America Bull, v 71, no. 12, pt 2, p. 2037, Dec. 1960

## MALHOTRA, Chamen L.

- 1-60. (and TEGLAND, Edward R.) A new Tertiary formation in Harding County, South Dakota South Dakota Acad. Sci. Proc. 1959, v. 38, p. 263-274, illus. incl. geol. map, Jan. 1960

## MALLIK, Kanai Lal

- 1-60. (and SEN, Buddhadev) A specific spot test for iron Anal. Chim. Acta (Amsterdam), v. 23, no. 3, p 225-226, Sept. 1960

## MALLORY, William Wyman

- 1-60. Outline of Pennsylvanian stratigraphy of Colorado, in Rocky Mtn. Assoc. Geologists, Guide to the geology of Colorado Denver, p 23-33 incl. index and sketch maps, sections and illus., 1960

## MALONEY, Ralph C. See BLACK, Peter E. 1-60

## MAMAY, Sergius Harry. See also READ, C. B. 1-60

- 1-60. Gigantopteridaceae in Permian floras of the southwestern United States Art. 175 in U. S. Geol. Survey Prof Paper 400-B, p B380, 1960.

## MANCUSO, J. J. See CAMERON, Eugene Nathan 1-60

## MANDARINO, Joseph Anthony

- 1-60. (and MITCHELL, Richard Scott) Pyrrhotite crystals from the Stanleigh Mine, Elliot Lake, Ontario Canadian Mineralogist, v 6, pt. 4, p 546-548, illus, 1960.

## MANDRA, York Tooree

- 1-60. Fossil silicoflagellates from California, U.S.A. Internat. Geol Cong., 21st, Copenhagen, 1960, Rept., pt. 6, p 77-89 incl. tables, 1960.
- 2-60. Fossil silicoflagellates from California [abs.]. Dissert. Abs., v. 20, no 11, p. 4370, May 1960.

## MANEVAL, David Richard

- 1-60 (and LOVELL, Harold Lemuel) Determination of lanthanum, cerium, praseodymium, and neodymium as major components by X-ray emission spectroscopy Anal. Chemistry, v. 32, no. 10, p 1289-1292 incl. tables, Sept 1960

## MANITOBA DEPARTMENT of MINES and NATURAL RESOURCES, Mines Branch

- 1-60. Annual report for period ending March 31st, 1960 Manitoba Dept. Mines and Nat Resources Mines Br. Ann. Rept 1959, 33 p., illus. [1960].
- 2-60. Geological index map of Manitoba showing geological and geophysical sheets issued by Manitoba Mines Branch and Geological Survey of Canada Manitoba Dept. Mines and Nat Resources Mines Br. Map 59-5, scale 1:1,267,200 (1 in. to 20 mi.), 1960.

## MANKIN, Charles John See also CASSIDY, M. M 1-60, HAM, W E. 3-60, HOWERY, S. D 1-60, LOVETT, F. D. 1-60, YOUNG, L. M. 1-60

## MANKIN

- 1-60. (and CASSIDY, M. M ) Chlorite, vermiculite, and talc from Webster, North Carolina Oklahoma Geology Notes, v 20, no 10, p. 261-266, illus , Oct. 1960

## MANKO, E. M.

- 1-60. The Triassic of the Rock Lake area [Alberta], in Rock Lake Edmon-ton Geol. Soc., 2d Ann Field Trip, Aug 1960, GuideBook, p 24-42, illus., 1960

## MANN, John Allen

- 1-60. Geology of part of the Gravelly Range area, Montana, in West Yellow-stone--Earthquake area Billings Geol Soc., 11th Ann. Field Conf , Sept. 1960, [Guidebook] p. 114-127 incl. index, geol., and tectonic sketch maps, sections, and diagrams, 1960

## MANN, John Francis, Jr

- 1-60 Safe yield changes in groundwater basins Internat Geol Cong , 21st, Copenhagen, 1960, Rept., pt. 20, p 17-23 incl diagram, 1960.

## MANN, Robert L.

- 1-60 (and FATT, Irving) Effect of pore fluids on the elastic properties of sandstone Geophysics, v 25, no. 2, p. 433-444 incl diagrams, tables, and illus., Apr 1960

## MANNION, Lawrence Edward

- 1-60 Geology of the La Grance [Grange] quadrangle, California [abs ] Dissert Abs., v 21, no 1, p 170-171, July 1960

## MANSFIELD, Silas P.

- 1-60 (and SPACKMAN, William, Jr , and DUTCHER, Russell Richardson) Sulfur studies of selected bituminous coal seams in Pennsylvania [abs.] Geol Soc America Bull , v 71, no 12, pt. 2, p 1922, Dec 1960

## MANSUR, Charles Isaiah See TURNBULL, Willard Jay 1-60

## MANTIA, Philip A See SCOMILLIO, John 1-60

## MAPEL, William Jameson. See IZETT, Glenn Arthur 1-60

## MAPPER, D.

- 1-60. Radioactivation analysis, Chap 9 in Smales, A. A., and Wager, L. R., ed , Methods in geochemistry New York, N Y., Intersci. Publishers, p 297-357, illus , 1960.

## MARCHER, Melvin Vernet. See also STEARNS, R G. 1-60

- 1-60. (and STEARNS, Richard Gordon) Lithology and source of the Tusca-loosa formation in western Tennessee [abs.] Geol. Soc. America Bull., v 71, no. 12, pt. 2, p. 2020, Dec 1960.

## MARCIN, Edward J.

- 1-60. The tin mines of Irish Creek, Virginia Rocks and Minerals, v 35, nos. 7-8, p. 336-338 incl. sketch maps, July-Aug 1960.

## MARCUS, Leslie F.

- 1-60. A census of the abundant large Pleistocene mammals from Rancho La Brea [Calif] Los Angeles County Mus Contr.Sci 38, 11 p , illus , May 19, 1960.

## MARCUS, Melvin G.

- 1-60. Periodic drainage of glacier-dammed Tulsequah Lake, British Colum-bia Geol Rev., v. 50, no. 1, p 89-106 incl. index and sketch maps, dia-grams, tables, and illus , Jan. 1960.

## MARDOCK, Edwin Scott, 1909-1960

- 1-60. Radioactivity logging and its future potential Geophysics, v 25, no. 4, p. 883-890, Aug. 1960.

MARET, Raymond Eldon

- 1-60. (and COE, A. V. Robertson) Geology of Sinbad Valley anticline [Colorado-Utah], in Geology of the Paradox Basin fold and fault belt Four Corners Geol Soc, 3d Field Conf, 1960, [Guidebook] p. 43-46, illus., 1960.

MARLEAU, Raymond Alban

- 1-60 Preliminary report on Lorraine-Flandre area, Pontiac electoral district Quebec Dept. Mines Geol Surveys Br Prelim Rept. 420, 8 p, geol. map, 1960, also French ed

MARLER, George D.

- 1-60. The 1959 Hebgen Lake [Montana] earthquake alters Yellowstone's hot springs, in West Yellowstone--Earthquake area Billings Geol. Soc., 11th Ann Field Conf., Sept 1960, [Guidebook] p 61-66 incl. illus., 1960.

MARLOWE, James I.

- 1-60. Late Cenozoic geology of the lower Safford Valley [Arizona]--A preliminary report Arizona Geol. Soc Digest, v 3, p 127-129, Mar. 1960  
2-60. Diatremes and a ring intrusion on the San Carlos Indian Reservation Arizona Geol Soc. Digest, v 3, p 150-154 incl illus., Mar 1960.

MARONEY, Dorothy M See BRINDLEY, George William 2-60

MARRANZINO, Albert P. See ERICKSON, Ralph LeRoy 1-60, GRIFFITTS, Wallace Rush 1-60

MARSAL, Raúl J See also JUAREZ-BADILLO, Eulalio 1-60

- 1-60 Problemas de cimentación en la Ciudad de México Cong. Panam. Mecánica Suelos y Cimentaciones, 1st, México, D. F., Sept 7-12, 1959, Mem., v 3, p 1041-1070 incl diagrams, tables, illus., and English abs and conclusions, English translation, p. 1071-1094, 1960  
2-60. (and MAZARI, Marcos) El subsuelo de la Ciudad de México--Pt A, Estratigrafía y propiedades, Pt. B, Hundimiento general, Pt C, Comportamiento de las cimentaciones Cong. Panam. Mecánica Suelos y Cimentaciones, 1st, México, D. F., Sept [7-12] 1959, Contr México Univ Nac Facultad Ing, 614 p incl. sketch maps, diagrams, tables, and illus., [1960].

MARSELL, Ray E.

- 1-60. (and THREET, Richard Lowell) Geologic map of Salt Lake County, Utah Utah Geol. and Mineralog Survey Repr. Ser. R S 83, scale about 1 in to 1 mi., with sections, June 1960.

MARSH, Owen T. See also BUSH, A. L. 1-60

- 1-60. A geologic-profile plotter Econ Geology, v 55, no 1, p. 201-204 incl diagram, table, and illus., Jan -Feb 1960  
2-60 A rapid and accurate contour interpolator Econ. Geology, v. 55, no 7, p. 1555-1560 incl diagrams and illus., Nov 1960.  
3-60. Relation of Bucatunna clay member of Byram formation to geology and ground water of westernmost Florida [abs.] Geol Soc. America Bull, v 71, no. 12, pt. 2, p 2020, Dec. 1960  
4-60. Geology of the Orchard Peak area, California California Div Mines Spec Rept. 62, 42 p., illus incl. geol map, 1960.

MARSHALL, B Vaughn See LACHENBRUCH, A H. 3-60

MARSHALL, Donald James

- 1-60 Interfacial polarization in membranes and its significance in the induced polarization of geologic materials [abs.] Massachusetts Inst Technology Abs Theses 1958-59, p 173-174, 1960

MARSHALL, Ernest William

- 1-60 Structure and stratigraphy of T-3 and the Ellesmere Ice Shelf [Northwest Territories], in Bushnell, V. C., ed., Scientific studies at Fletcher's ice island, T-3, 1952-1955, V. 3 U. S Air Force Cambridge Research Center Geophysics Research Directorate Geophys Research Paper 63, p. 45-57, illus., Apr. 1960

## MARSHALL

MARSHALL, Royal R. See also HESS, D. C. 1-60

- 1-60. (and HESS, David Clarence) Determination of very small quantities of lead Anal. Chemistry, v. 32, no. 8, p. 960-966 incl. diagram, tables, and illus., July 1960

MARTIN, Conrad

- 1-60. Origin of crystalline magnesite deposits [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1921-1922, Dec. 1960, Econ. Geology, v. 55, no. 6, p. 1338, Sept.-Oct. 1960.  
2-60. Volcanoes! Nevada Highways and Parks, v. 20, no. 1, p. 18-25, illus., 1960

MARTIN, Gene Briggs

- 1-60. Preliminary investigation of upper Ordovician Bryozoa of northwestern Alabama [abs.] Am. Assoc. Petroleum Geologists Bull., v. 44, no. 9, p. 1602, Sept. 1960  
2-60. A preliminary investigation of the upper Ordovician bryozoa of northwestern Alabama Gulf Coast Assoc. Geol. Soc. Trans., v. 10, p. 201-205 incl. sketch map, section, and correlation chart, 1960.

MARTIN, Harold. See GREEN, Morton 2-60

MARTIN, James Anthony. See HEIM, George E. 1-60, 2-60

MARTIN, Jeanne G. M. See COPELAND, Lawrence L. 1-60

MARTIN, K. G. See MURRAY, Grover Elmer 3-60

MARTIN, Leonard John

- 1-60. Tectonic framework of northern Canada [abs.] Oil in Canada, v. 12, no. 12, p. 72, Jan. 18, 1960

MARTIN, Maurice. See DOLL, Henri-Georges 1-60, 2-60

MARTIN, Paul Schultz

- 1-60. Palynology and prehistory--The Southwest an example [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 2103, Dec. 1960

MARTIN, R. E.

- 1-60. Case history of a gravity drainage type reservoir [Alberta] Canadian Mining and Metall. Bull., v. 53, no. 580, p. 607-613 incl. index and structure maps, diagrams, and tables, Aug. 1960, Canadian Inst. Mining and Metallurgy Trans., v. 63, p. 400-406, 1960.

MARTIN, R. Torrence

- 1-60. Water vapor sorption on kaolinite--Entropy of adsorption, in Swineford, Ada, ed., Clays and clay minerals, V. 8 Natl. Conf. Clays and Clay Minerals, 8th, Norman, Okla., Oct. 1959, Proc., p. 102-114 incl. diagrams and table, 1960 (Issued as Internat. Earth Science Ser. Mon. 9 of Pergamon Press, New York)

MARTIN, Rudolf

- 1-60. Principles of paleogeomorphology Canadian Mining and Metall. Bull., v. 53, no. 579, p. 529-538 incl. sketch maps, sections, and diagrams, July 1960, Canadian Inst. Mining and Metallurgy Trans., v. 63, p. 352-361, 1960  
2-60. Principles of paleogeomorphology [abs.] Oil in Canada, v. 12, no. 29, p. 28-29, May 16, 1960.

MARTINEZ, Joseph Didier. See also HOWELL, L. G. 1-60

- 1-60 (and STATHAM, Edwin H., and HOWELL, Lynn Gorman) A review of paleomagnetic studies of some Texas rocks, in Texas Univ. Bur. Econ. Geology, Aspects of the geology of Texas--A symposium Texas Univ. Pub. 6017, p. 15-47, illus., Sept. 1, 1960

MARTINEZ, Prudencio

- 1-60. Method of grinding cesium iodide crystals Art. 232 in U. S. Geol. Survey Prof. Paper 400-B, p. B507-B508 incl. illus., 1960.

MARTINSSON, Anders See also BOUCOT, A. J 4-60

- 1-60. The primitiopsid ostracodes from the Ordovician of Oklahoma and the systematics of the family Primitiopsidae Uppsala Univ. Geol. Inst Bull (Uppsala, Sweden), v 38, pt. 2, p 139-154, illus., 1960

MARVIN, U. B See FRONDEL, Clifford 1-60, 2-60

MASER, Morton

- 1-60. (and RICE, Robert Vernon, and KLUG, Harold Philip) Chrysotile morphology Am Mineralogist, v. 45, nos 5-6, p 680-688 incl. illus., May-June 1960

MASON, Brian Harold

- 1-60 (and SAND, Leonard B ) Clinoptilolite from Patagonia--The relationship between clinoptilolite and heulandite Am Mineralogist, v 45, nos. 3-4, p. 341-350 incl diagrams and tables, Mar -Apr. 1960  
2-60. The origin of meteorites Jour. Geophys. Research, v 65, no. 9, p 2965-2970 incl diagrams, Sept. 1960  
3-60. The origin of chondrules and chondritic meteorites [abs ] Jour Geophys. Research, v. 65, no. 8, p 2510, Aug 1960.  
4-60 Treasures underground New York, N Y., Home Libr Press, 31 p , illus , 1960  
5-60. Trap rock minerals of New Jersey New Jersey Bur Geology and Topography Bull 64, 51 p., illus incl. geol map, 1960.  
6-60. (and WIIK, H. B ) The Selma, Alabama, chondrite Am. Mus. Novitates, no 2010, 7 p incl. tables and illus , Aug 18, 1960  
7-60 (and WIIK, H B.) The Tomhannock Creek, New York, chondrite Mineralog Mag. (London), v 32, no 250, p 528-533 incl table and illus , Sept. 1960  
8-60. Origin of chondrules and chondritic meteorites Nature (London), v 186, no 4720, p. 230-231, Apr. 16, 1960

MASON, Curtis Calvin

- 1-60. Geology and ground-water resources of Dimmit County, Texas Texas Board of Water Engineers Bull 6003, 234 p , illus incl geol map, June 1960.

MASON, Ralph S.

- 1-60. Oregon's mineral industry in 1959 Ore -Bin, v 22, no 1, p 1-8 incl sketch maps and tables, Jan. 1960.  
2-60 State mineral production continues to rise [Oreg ] Ore.-Bin, v. 22, no 7, p 71-73 incl sketch map and tables, July 1960

MASON, Robert A See also JOHNSON, K. E 1-60

- 1-60. (and HAHN, Glenn Walter) Ground-water map of the Coventry Center quadrangle, Rhode Island, showing water-bearing formations and related ground-water data Rhode Island Water Resources Coordinating Board Ground-Water Map GWM 8, scale 1 24,000 (about 1 in to 2,000 ft ), with sections, 1960.

MASON, Ronald J.

- 1-60 Early man and the age of the Champlain Sea Jour. Geology, v. 68, no 4, p 366-376 incl. sketch map, July 1960.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Soil Engineering Division

- 1-60. Research on the physical properties of marine soils, report for the period August 1959-July 1960, ONR Contract Nonr-1841 (29) Massachusetts Inst Technology Soil Eng. Div. Pub. 105, [58] p incl. diagrams and tables, July 1960.

MASTERMAN, P C See HEINRICH, E. W 5-60

MASTERS, John Alan

- 1-60. Pinta Dome helium gas reserves [Arizona] Interstate Oil Compact Comm. Comm. Bull , v. 2, no 2, p. 30-32, illus , Dec 1960

## MASURSKY

MASURSKY, Harold

- 1-60. Welded tuffs in the northern Toiyabe Range, Nevada Art. 129 in U. S. Geol. Survey Prof Paper 400-B, p B281-B283 incl. geol. sketch map and table, 1960.
- 2-60. Welded tuffs in the northern Toiyabe Range, Nevada [abs ] Geol. Soc. America Bull., v. 71, no. 12, pt 2, p. 1922-1923, Dec 1960.

MATELSKI, Roy P. See SHIPP, R. F 1-60

MATHER, Bryant

- 1-60. Petrology of concrete aggregate, in Tanner, W F, ed, Symposium on highway engineering geology, 11th Ann., Feb. 1960, Proc., p. 9-21, Sept. 1960.

MATHEWS, David L.

- 1-60. The clay mineralogy of some Mojave Desert playas [California] Compass, v. 38, no 1, p. 28-38 incl. sketch map, diagram, and tables, Nov. 1960.

MATHEWS, William Henry. See also SHEPARD, F. P. 8-60

- 1-60 Geomorphology, southwestern British Columbia, in Geol. Discussion Club, Guidebook for geological field trips in southwestern British Columbia Vancouver, B C., p 11-14 incl. sketch map, Mar. 1960.
- 2-60. (and MACKAY, John Ross) Deformation of soils by glacier ice and the influence of pore pressures and permafrost [abs.] Royal Soc. Canada Minutes Proc., 3d ser., v. 54, App C, p. 35, 1960.
- 3-60. (and MACKAY, John Ross) Deformation of soils by glacier ice and the influence of pore pressures and permafrost Royal Soc Canada Trans., 3d ser, v. 54, sec. 4, p. 27-36, illus, June 1960

MATHEWSON, Donald Edward

- 1-60. Some notes on Precambrian structures in Arizona Arizona Geol. Soc. Digest, v 3, p 9-11, Mar. 1960.

MATSUMOTO, Tatsuro

- 1-60. On some type ammonites from the Gulf Coast Cretaceous Kyushu Univ. Fac Sci., Sci. Repts Geology (Fukuoka, Japan), v. 5, no. 1, p. 36-49, illus., in Japanese with English abs., 1960
- 2-60. Upper Cretaceous ammonites of California, Pt 3, with notes on Stratigraphy of the Redding area and the Santa Ana Mountains, by T. Matsumoto and W P. Popenoe Kyushu Univ Fac Sci Mem, (Fukuoko, Japan), Ser. D, Geology, spec v. 2, 204 p, illus., Jan 25, 1960

MATTHES, François Émile See also BEATTY, M. E. 1-60

- 1-60 Reconnaissance of the geomorphology and glacial geology of the San Joaquin Basin, Sierra Nevada, California U. S Geol. Survey Prof. Paper 329, 62 p, illus. incl. geol. map, 1960.

MATTHEW, William Diller, 1871-1930

- 1-60 (and MACDONALD, James Reid) Two new species of *Oxydactylus* from the middle Miocene Rosebud formation in western South Dakota Am. Mus Novitates, no. 2003, 7 p incl. illus, Mar 29, 1960

MATTHEWS, John F, Jr

- 1-60. Strand oil field California Oil Fields--Summ. Operations Jan.-June 1960, v. 46, no 1, p. 16-25, illus, 1960.

MATTHEWS, Samuel W.

- 1-60 The night the mountains moved [Montana] Natl. Geog Mag., v. 117, no. 3, p 328-359, illus, Mar 1960

MATTHEWS, William H, 3d

- 1-60. Role of the geology teacher in public education [abs ] Geol. Soc. America Bull., v 71, no 12, pt 2, p 1923, Dec 1960
- 2-60 Texas fossils--An amateur collector's handbook Texas Univ Bur. Econ Geology Guidebook 2, 123 p., illus incl geol map, Nov 1960.

MATTOX, Richard Benjamin. See WADE, Franklin Alton 1-60

MATTSON, Peter Humphrey. See also GLOVER, Lynn, 3d 1-60

1-60. (and GLOVER, Lynn, 3d) Stratigraphic distribution of detrital quartz in pre-Oligocene rocks in south-central Puerto Rico. Art 168 in U. S. Geol. Survey Prof Paper 400-B, p. B357, B367-B368 incl index map and table, 1960.

2-60. Geology of the Mayagüez area, Puerto Rico Geol Soc America Bull, v 71, no. 3, p 319-361 incl index map, sections, and tables, also geol map and illus., Mar. 1960.

3-60. Notes on the stratigraphy and structure of southwestern Puerto Rico Caribbean Geol. Conf., 2d, Mayagüez, Puerto Rico, Jan. 4-9, 1959, Trans., p 99-102 incl. table, with discussion, 1960

MAUGHAN, Edwin Kelly

1-60. (and WILSON, Richard Fairfield) Pennsylvanian and Permian strata in southern Wyoming and northern Colorado, in Rocky Mtn Assoc. Geologists, Guide to the geology of Colorado Denver, p 34-42 incl index map, correlation charts, table, and illus., 1960.

MAURER, William C See RINEHART, John Sargent 2-60

MAWBY, John E.

1-60. A new American occurrence of Heterosorex Gaillard [Oregon] Jour. Paleontology, v. 34, no. 5, p 950-956 incl. table and illus., Sept. 1960

MAWDSLEY, James Buckland

1-60. Iron ore occurrences, northwestern Saskatchewan Saskatchewan Dept. Mineral Resources Rept. 50, 19 p., illus. incl. geol. maps, 1960

MAXEY, George Burke. See also LaMOREAUX, P. E. 4-60

1-60. The geology of water and its importance to our industrial civilization [abs.] Tulsa Geol Soc Digest, v. 28, p. 90-91, 1960.

2-60. (and HACKETT, James Edward) Applications of some geohydrologic concepts in geology [abs.] Geol. Soc America Bull., v 71, no. 12, pt 2, p 1923, Dec. 1960.

MAXWELL, James Christie

1-60. Quantitative geomorphology of the San Dimas Experimental Forest, California. Columbia Univ. Dept. Geology Tech. Rept. 19, 95 p incl. tables, index and sketch maps, and diagrams, 1960.

MAXWELL<sup>a</sup>, John Alfred. See NICKEL, Ernest Henry 1-60

MAXWELL, John Crawford. See also DE, Aniruddha 1-60

1-60. Origin of slaty and fracture cleavage [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt 2, p 1923-1924, Dec 1960.

2-60. Experiments on compaction and cementation of sand, Chap 5 in Griggs, D. T., ed., Rock deformation--A symposium Geol Soc. America Mem. 79, p. 105-132, illus., 1960

MAXWELL, Moreau S.

1-60. An archaeological analysis of eastern Grant Land, Ellesmere Island, Northwest Territories Canada Natl. Mus Bull 170, 109 p incl index and sketch maps, diagrams, and illus , 1960

MAY, Irving

1-60. Preparation of stable gelatin-montmorillonite clay extrusions Art. 72 in U. S. Geol Survey Prof Paper 400-B, p B163-B164, 1960

MAYCOCK, Ian D

1-60. The Ordovician limestones of the Kingston (Ontario) District [abs.] Canadian Mining Jour , v 81, no. 6, p 169, June 1960

## MAYNE

MAYNE, K. I.

- 1-60. Stable isotope geochemistry and mass spectrometric analysis, Chap. 6 in Smales, A. A., and Wager, L. R., ed., *Methods in geochemistry* New York, N Y, Intersci. Publishers, p 148-201, illus, 1960

MAYNES, A. D. See MAIR, J A. 1-60

MAYO, Evans Blakemore. See EVANS, David LeCount 1-60

MAZARI, Marcos. See MARSAL, Raúl J. 2-60

MEAD, Judson See COLVILLE, Alan A. 1-60

MEADE, Robert Francis. See VALENTINE, James William 1-60

MEARS, Brainerd, Jr.

- 1-60. Student training for a summer field course Jour. Geol. Education, v 8, no. 2, p. 44-48, fall 1960.

MEDLIN, William Louis

- 1-60. Comments on "Thermoluminescent properties of calcite" Jour. Chem. Physics, v. 32, no 3, p 943 incl diagram, Mar. 1960

MEENTS, Wayne Franklin

- 1-60. Glacial-drift gas in Illinois. Illinois State Geol Survey Div. Circ. 292, 58 p. incl. diagrams, index and sketch maps, and tables, 1960

MEGAW, Helen D.

- 1-60. Observations on Chayes' discussion of the intermediate plagioclase feldspars Acta Cryst., v. 13, pt 7, p. 564-565 incl. diagrams and illus., July 1960. (Discussion of paper by F. Chayes, v. 11, pt 5, p. 323-324, May 1958 )

MEHL, Maurice Goldsmith

- 1-60. The relationships of the base of the Mississippian system in Missouri Denison Univ. Sci. Lab. Jour., v. 45, art. 5, p 57-107 incl chart and sections, Dec. 1960.

MEIDAV, Tsvi. See also SCHARON, H. L. 1-60

- 1-60. An electrical resistivity survey for ground water [Missouri] Geophysics, v 25, no. 5, p. 1077-1093 incl. sketch maps, diagrams, and tables, Oct. 1960.  
2-60. Nomograms to speed up seismic refraction computations Geophysics, v. 25, no. 5, p. 1035-1053 incl. diagrams, Oct. 1960.

MEIER, Mark Frederick. See also ALLEN, C R 1-60, 3-60

- 1-60. The outbreak of a glacier-dammed lake [abs.] Jour Geophys. Research, v 65, no. 4, p 1315, Apr. 1960.  
2-60. Hydrologic regimen of a mountain glacier [abs.] Jour. Geophys. Research, v. 65, no 8, p. 2511, Aug. 1960  
3-60 Mode of flow of Saskatchewan Glacier, Alberta, Canada U S. Geol. Survey Prof. Paper 351, 70 p, illus, 1960.  
4-60. Glaciers Am Geophys. Union Trans., v 41, no 2, p. 308-310, June 1960.

MEIER, Walter Max

- 1-60. The crystal structure of natrolite Zeitschr. Kristallographie (Frankfurt am Main, Germany), Band 113, Max von Laue Festschr. 2, p 430-444 incl. diagrams and tables, with German abs., Apr 1960.  
2-60. A new way of representing silicate frameworks Zeitschr Kristallographie (Frankfurt am Main, Germany), Band 114, Heft 5-6, p 478-480 incl. diagram and illus., with German abs., Dec 1960.

MEIMAN, James R. See BLACK, Peter E 1-60

MEISLER, Harold See LOCKWOOD, William Noble 1-60



MEITES, Louis See CATHERINO, Henry A. 1-60

MELAMID, Alexander

- 1-60. Evolution, function, and decay of Fire Island, New York [abs ] Geol. Soc America Bull., v. 71, no. 12, pt. 2, p 2104, Dec 1960

MELBYE, Charles E.

- 1-60 Geophysics used in Rocky Mountains to trace uranium channels, locate narrow veins, and determine depth of desert sand and gravel Mining World, v 22, no. 7, p 37-40 incl. illus , June 1960

MELHORN, Wilton Newton See also GATES, G. R. 1-60, WINSLOW, J. D. 3-60

- 1-60 The Parrish and Glasford mastodons Indiana Acad Sci Proc. 1959, v. 69, p 189-192, table, 1960.

MELLERSH, H. E. L.

- 1-60. The story of early man--Human evolution to the end of the Stone Age-- New York, N. Y., Viking Press, 257 p., illus., 1960.

MELLON, George Barry

- 1-60. Authigenic processes in the Lower Cretaceous Blairmore group, Alberta, Canada [abs ] Geol. Soc America Bull., v. 71, no 12, pt. 2, p 1928, Dec. 1960.

MELLON, Melvin Guy. See also WALLACE, G. W 1-60

- 1-60. (and BOLTZ, David Ferdinand) Light absorption spectrometry Anal. Chemistry, v. 32, no 5, p. 194R-210R incl tables, Apr. 1960.

MELTON, Mark Aldridge

- 1-60. Intravalley variation in slope angles related to microclimate and erosional environment Geol. Soc. America Bull , v. 71, no. 2, p. 133-144 incl. diagrams and tables, Feb. 1960.
- 2-60. Concept of state of drainage systems [abs.] Geol Soc America Bull., v. 71, no. 12, pt. 2, p. 1928, Dec 1960.
- 3-60. Origin of the drainage of southeastern Arizona Arizona Geol Soc. Digest, v. 3, p 113-122 incl sketch maps, Mar. 1960

MENARD, Henry William, Jr.

- 1-60 The East Pacific Rise Science, v. 132, no. 3441, p 1737-1746 incl. sketch maps and diagrams, Dec. 9, 1960
- 2-60 Possible pre-Pleistocene deep-sea fans off central California Geol Soc America Bull., v 71, no. 8, p. 1271-1278 incl. diagrams, echograms, Aug. 1960.
- 3-60. Consolidated slabs on the floor of the eastern Pacific Deep-Sea Research, v. 7, no 1, p. 35-41, illus., Aug. 1960
- 4-60. Sea floor relief Am. Geophys. Union Trans., v. 41, no. 2, p 274-275, June 1960.

MENA ROJAS, Enrique

- 1-60. El Jurásico marino de la región de Córdoba Asoc Mexicana Geólogos Petroleros Bol., v 12, nos. 7-8, p 243-252, geol sketch map and sections, July-Aug 1960.

MENDOZA, Herbert A See ANDERSON, Sidney Bakken 1-60, 2-60

MENELEY, W. A.

- 1-60. Theory of microfabric analysis [abs.] Canadian Mining Jour., v 81, no. 8, p. 105, Aug 1960

MENIS, Oscar. See RAINS, T C. 1-60

MENTSER, Morris See also ERGUN, Sabri 1-60

- 1-60. (and ERGUN, Sabri) A correlation between helium density and hydrogen content of coals Fuel (London), v. 39, no. 6, p. 509-510 incl. diagram and table, Nov 1960.

## MENZIES

MENZIES, Robert James. See HUNKINS, Kenneth Leland 1-60

MEREWETHER, E. Allen

- 1-60 (compiler) Geologic map of the igneous and metamorphic rocks of Wyoming, showing location of uranium deposits U S Geol. Survey Misc. Geol. Inv. Map I-310, scale 1 500,000 (about 1 in. to 8 mi.), 1960
- 2-60. (compiler) Geologic map of the igneous and metamorphic rocks of Colorado showing location of uranium deposits U. S. Geol. Survey Misc. Geol. Inv. Map I-309, scale 1 500,000 (about 1 in. to 8 mi.) [1960].
- 3-60. Geologic map of the igneous and metamorphic rocks of Montana showing location of uranium deposits U S. Geol. Survey Misc. Geol. Inv. Map I-311, 2 sheets, scale 1 500,000 (about 1 in. to 8 mi.), 1960.

MERINO y CORONADO, José

- 1-60 El Terremoto de Jáltipan, Ver. del 26 de Agosto de 1959 México Univ. Nac. Inst. Geofísica Anales, v. 6, p. 89-137 incl. diagrams and illus., sketch maps, with English abs., 1960

MERK, George P.

- 1-60. Great Sand Dunes of Colorado, in Rocky Mtn. Assoc. Geologists, Guide to the geology of Colorado Denver, p. 127-129 incl. diagrams and illus., 1960.

MERO, John L.

- 1-60. Uses of the gamma-ray spectrometer in mineral exploration. Geophysics, v. 25, no. 5, p. 1054-1076 incl. diagrams and tables, Oct. 1960.
- 2-60 Deep sea minerals of economic importance [abs.] Mining Eng., v. 12, no. 6, p. 534, June 1960.
- 3-60 Mineral resources on the ocean floor Mining Cong. Jour., v. 46, no. 10, p. 48-53 incl. sketch maps, tables, and illus., Oct. 1960.
- 4-60 Minerals on the ocean floor Sci. Am., v. 203, no. 6, p. 64-72 incl. sketch maps and illus., Dec. 1960.

MERRIAM, Charles Warren. See ROSS, R. J., Jr. 1-60

MERRIAM, Daniel Francis. See also GOEBEL, E. D. 1-60

- 1-60. (and GOEBEL, Edwin DeWayne) Kansas' oil, gas-field discoveries continue to mount Oil and Gas Jour., v. 58, no. 13, p. 250-253 incl. index maps, diagrams, and tables, Mar. 28, 1960.
- 2-60. Drillers keep busy in northern Kansas Oil and Gas Jour., v. 58, no. 42, p. 164-165, 168-170 incl. index and structure contour maps, sections, and table, Oct. 17, 1960
- 3-60. Preliminary regional structural contour map on top of Mississippian rocks in Kansas Kansas State Geol. Survey Oil and Gas Inv. 22, scale about 1 in. to 10 mi., 1960.
- 4-60. (and KELLY, T. E.) Preliminary regional structural contour map on top of "Hunton" (Silurian-Devonian) rocks in Kansas Kansas State Geol. Survey Oil and Gas Inv. 23, scale about 1 in. to 10 mi., 1960.

MERRIAM, Richard Holmes

- 1-60. Portuguese Bend landslide, Palos Verdes Hills, California Jour. Geology, v. 68, no. 2, p. 140-153 incl. geol. and sketch maps, diagrams, and sections, illus., Mar. 1960.

MERRILL, Glen K.

- 1-60. Additional notes on vertical shafts in limestone caves Natl. Speleol. Soc. Bull., v. 22, pt. 2, p. 101-108, illus., July 1960
- 2-60. Additional notes on vertical shafts in limestone caves [abs.] Natl. Speleol. Soc. NSS News, v. 18, no. 7, p. 76, July 1960.

MERRILL, John R.

- 1-60. (and HONDA, Masatake, and ARNOLD, James Richard) Methods for separation and determination of beryllium in sediments and natural waters Anal. Chemistry, v. 32, no. 11, p. 1420-1426 incl. diagrams and tables, Oct. 1960.

## MERRILL, William Meredith

- 1-60. Structures in glacier ice, North Ice Cap, northwest Greenland Internat. Geol. Cong , 21st, Copenhagen, 1960, Rept., pt 21, p. 68-80 incl. sketch map, diagrams, table, and illus , 1960  
 2-60. Grain properties and petrofabrics in glacier ice, North Ice Cap, northwest Greenland [abs ] Geol. Soc. America Bull , v. 71, no. 12, pt 2, p. 1929, Dec. 1960.

## MERRIMAN, Mansfield

- 1-60 Engineering geology-distribution system of the Colorado-Big Thompson Project, in Rocky Mtn Assoc Geologists, Guide to the geology of Colorado Denver, p 257-261 incl. geol. and sketch maps, section, and diagram, 1960

## MERRIN, Seymour

- 1-60. Synthesis of epidote and its apparent P-T stability curve [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1929, Dec. 1960.

## MERRITT, Clifford Addison. See also HAM, W E 2-60

- 1-60. Petrography of the Spavinaw granite Oklahoma Geology Notes, v. 20, no. 9, p 224-228, illus. incl. geol sketch map, Sept 1960

## MERTIE, John Beaver, Jr.

- 1-60 Monazite and related minerals, in Am Inst. Mining, Metall., and Petroleum Engineers, Industrial minerals and rocks, p 623-629, 1960.

## MESSINA, Angelina Rose. See ELLIS, Brooks Fleming 1-60, 2-60, 3-60

## MESSMER, Joseph Herman. See WOODSIDE, William 1-60

## METSGER, Robert W. See SUTTON, George H 1-60, 3-60

## MEYBOOM, P

- 1-60. Geology and groundwater resources of the Milk River sandstone in southern Alberta Research Council Alberta Mem 2, 89 p. incl. geol and other sketch maps, section, diagrams, chart, tables, and illus , index map, 1960.

## MEYER, Gerald

- 1-60. Chemical composition of fresh ground water in West Virginia West Virginia Acad Sci Proc. 1960, v. 32, p 162-166, illus incl. geol sketch map, Dec. 1960.

## MEYER, H. Conrad, d. 1957

- 1-60. Zirconium and hafnium minerals, in Am Inst. Mining, Metall, and Petroleum Engineers, Industrial minerals and rocks, p. 901-908, 1960.

## MEYER, Pierrepont Arthur, Jr See BROWN, John Stafford 2-60

MEYER, Robert Paul See also POOLEY, R. N. 1-60, STEINHART, J. S 1-60  
 1-60. (and STEINHART, John S, and WOOLLARD, George Prior, and BONINI, William Emory) Refraction phase correlation techniques as applied to and preliminary results of crustal studies in eastern Montana [abs.] Jour Geophys. Research, v 65, no. 8, p 2511, Aug 1960.

## MEYER-ABICH, Helmut

- 1-60. El Salvador, in Internat Geol Cong Strat Comm , Lexique stratigraphique international--V 5, Amérique Latine--Fasc 2a, Amérique Centrale Paris, Centre Natl Recherche Sci , p 99-128 incl. section, geol. map, 1960.

## MEYERHOF, Walter E. See SEGRÈ, Emilio Gino 1-60

## MEYERS, Theodore Ralph

- 1-60. (and BRADLEY, Edward) Suburban and rural water supplies in

## MEYERS

southeastern New Hampshire New Hampshire State Plan and Devel. Comm. Mineral Resources Survey, pt.18, 26 p, illus, incl. geol. map, 1960.

MEYROWITZ, Robert. See also CUTTITTA, Frank 1-60, OUTERBRIDGE, W. F. 1-60

1-60. (and CUTTITTA, Frank, and LEVIN, Betsy) N,N-Dimethylformamide, a new diluent for methylene iodide heavy liquid Am Mineralogist, v. 45, nos. 11-12, p. 1278-1280 incl. table, Nov.-Dec 1960.

2-60. (and LINDBERG, Marie Louise Lange) Synthetic bayleyite Art 201 in U. S. Geol. Survey Prof. Paper 400-B, p. B440-B441 incl. diagram and table, 1960.

MICHAEL, Robert Henry

1-60. Hogsback and Tip Top Units, Sublette and Lincoln Counties, Wyoming, in Overthrust belt of southwestern Wyoming and adjacent areas Wyoming Geol. Assoc, 15th Ann. Field Conf., 1960, Guidebook, p. 210-216 incl. structure map, illus, diagram, and table, 1960.

MICHAELS, Alan Sherman See ROSENQVIST, Ivan Thoroff 1-60

MICHENER, P. Z

1-60 Preliminary subsurface investigation of the Chesapeake crossing [Virginia], in Tanner, W. F., ed., Symposium on highway engineering geology, 11th Ann., Feb 1960, Proc., p 35-54, illus, Sept 1960.

MICHIGAN BASIN GEOLOGICAL SOCIETY

1-60. Lower Paleozoic and Pleistocene stratigraphy across central Wisconsin, annual field excursion, May 1960, [guidebook] Ann Arbor, Mich., 34 p., illus. incl. geol. map, 1960

MICHIGAN GEOLOGICAL SURVEY

1-60. Mineralogical guide 3d ed., revised, Lansing, 31 p. incl. index and geol. sketch maps and diagrams, 1960.

MIDDLETON, Gerard V.

1-60. Chemical composition of sandstones Geol Soc America Bull., v. 71, no 7, p. 1011-1026 incl. diagrams and tables, July 1960.

MIDLAND MAP COMPANY

1-60. Permian basin geological province and field map [Texas-New Mex ], showing oil fields, county seats, and all major highways 1960 ed., Midland, Texas, scale about 1 in to 12 mi [1960]

MIESCH, Alfred Thomas

1-60. (and RILEY, Leonard Benjamin) Basic statistical measures in geochemical investigations of Colorado Plateau uranium deposits [abs.] Mining Eng, v 12, no. 12, p 1248, Dec 1960.

2-60. (and SHOEMAKER, Eugene Merle, and NEWMAN, William L., and FINCH, Warren Irvin) Chemical composition as a guide to the size of sandstone-type uranium deposits in the Morrison formation on the Colorado Plateau U. S. Geol Survey Bull 1112-B, p 17-61 incl. index map, diagrams, and tables, 1960

MIHM, R J See KAY, Marshall 3-60

MIKAMI, Harry M See HEILIGMAN, Harold A. 1-60

MILHOUS, Holman Cannon

1-60. Tennessee, key development years just ahead World Oil, v. 150, no. 7, p 92-95 incl. oil and gas and structure maps and sections, June 1960

MILKEY, Robert George

1-60. Infrared spectra of some tectosilicates Am Mineralogist, v. 45, nos 9-10, p. 990-1007 incl diagrams, Sept.-Oct. 1960

MILLARD, Frank Stutzman

- 1-60. Sonic log evaluates Morrow sand in western Oklahoma Petroleum Engineer for Management, v 32, no. 9, p B-29-B-34 incl. diagrams, Aug 1960
- 2-60. Resistivity-velocity log evaluation of the Morrow sand in western Oklahoma Soc. Prof. Well Log Analysts, 1st. Ann. Logging Symposium, Tulsa, Oklahoma, May 16-17, 1960, Trans., 11p. incl logs and diagrams, paged separately, 1960

MILLER, A. J

- 1-60. Interpretation of water saturation and capillary pressure data in the Belshull Lake Field [Alberta] Canadian Mining and Metall. Bull., v 53, no 582, p. 804-810 incl. isopach map, diagrams, and tables, Oct. 1960, Canadian Inst. Mining and Metallurgy Trans, v 63, p 555-561, 1960

MILLER, Allan E See LAVAL, William Norris 1-60

MILLER, Daniel Newton, Jr See also McGOOKEY, D. P. 2-60, WYOMING GEOLOGICAL ASSOCIATION 1-60

- 1-60 Uses of petrographic microscope in petroleum exploration [abs.] Am. Assoc. Petroleum Geologists Bull, v. 44, no 6, p. 959, June 1960
- 2-60. Uses of the petrographic microscope in petroleum exploration Am Assoc. Petroleum Geologists Rocky Mtn. Sec. Geol Record 1960, p 19-26 incl. illus. [1960].

MILLER, Don John, 1919-1961

- 1-60 Giant waves in Lituya Bay, Alaska U. S Geol. Survey Prof. Paper 354-C, p 51-86, illus., 1960.
- 2-60. The Alaska earthquake of July 10, 1958--Giant wave in Lituya Bay Seismol Soc. America Bull, v. 50, no. 2, p. 253-266 incl sketch map and illus., Apr 1960

MILLER, Donald S.

- 1-60 Uranium, lead, and sulfur isotopic data and the origin of the Colorado Plateau uranium ores [abs ] Geol. Soc America Bull., v. 71, no 12, pt 2, p. 1930, Dec. 1960.

MILLER, Dwight O.

- 1-60 (and YOE, John H ) A new spectrometric method for the determination of microgram amounts of manganese [abs ] Virginia Jour Sci., v 11, no. 4, p. 185, Sept. 1960.

MILLER, Floyd Henry, Jr. See McNEAL, Robert Paul 1-60, 2-60

MILLER, Gerald Matthew

- 1-60. The pre-Tertiary structure and stratigraphy of the southern portion of the Wah Wah Mountains, southwest Utah [abs ] Dissert. Abs., v. 20, no 12, p 4634-4635, June 1960.

MILLER, Halsey Wilkinson, Jr See also MOORE, R A 1-60

- 1-60. The paleontological literature of Arizona--A review Arizona Geol Soc. Digest, v. 3, p. 63-70, Mar 1960.

MILLER, J. E. See BRANDT, L W 1-60

MILLER, John Preston, 1923-1961 See WOLMAN, Markley Gordon 1-60

MILLER, L. V. See NEAVEL, Richard C 3-60

MILLER, Leo J.

- 1-60. Massive sulfide deposits in eugeosynclinal belts [abs ] Geol. Soc. America Bull, v 71, no 12, pt. 2, p. 1930, Dec 1960, Econ. Geology, v. 55, no 6, p 1327-1328, Sept.-Oct 1960.

## MILLER

MILLER, Loye Holmes

- 1-60 Notes on the Pleistocene flightless goose, Chendytes Southern California Acad. Sci. Bull., May-Aug. 1960, v. 59, pt 2, p 57-61, illus, Aug. 23, 1960.

MILLER, Lynn M.

- 1-60. (Chairman, and others) Underground waste disposal and control--A report of Task Group 2450 R Am Water Works Assoc. Jour., v 52, no 5, p. 619-622, May 1960.

MILLER, Osborn Maitland

- 1-60. (and SUMMERSON, Charles Henry) Slope-zone maps Geog. Rev., v. 50, no 2, p. 194-202 incl table, also slope-zone map, Apr 1960

MILLER, P. Schuyler. See DIETZ, Robert Sinclair 1-60

MILLER, Reuben F See ROLFE, Bernard Nathan 1-60

MILLER, Robert J. M.

- 1-60. Geology of Mattagami Lake Mines [Quebec]--A preliminary view [abs.] Canadian Mining and Metall. Bull., v 53, no 575, p 194, Mar 1960

MILLER, Robert Lee See OLSON, Everett Claire 2-60

MILLER, T. H. See JEFFORDS, Russell MacGregor 1-60

MILLETT, Marion T.

- 1-60. Advance of the Muldrow Glacier, 1957 [abs.] Geol. Soc. America Bull., v 71, no. 12, pt. 2, p. 2068, Dec. 1960.

MILLICAN, Marcus L.

- 1-60 The Sonic log and the Delaware sand Jour Petroleum Technology, v. 12, no 1, p. 71-75 incl. diagrams, Jan. 1960

MILLIGAN, George Clinton

- 1-60 Geology of the Lynn Lake district, northern Manitoba Manitoba Dept. Mines and Nat. Resources Mines Br. Pub 57-1, 317 p, illus. incl. geol. maps, 1960.

MILLISON, Clark Drury See PURCELL, Tom E 1-60

MILLS, Joseph William

- 1-60 Geologic setting of the nickel occurrences on Jumbo Mountain, Washington Mining Eng., v. 12, no 3, p 272-274 incl geol. sketch map and illus, Mar. 1960  
2-60. Construction and use of an inexpensive controlled photomosaic for geologic mapping Jour. Geol. Education, v 8, no. 2, p. 58-62, fall 1960.

MINARD, James Pierson See OWENS, James Patrick 4-60

MILNE, Ivan Herbert. See SLAUGHTER, Maynard 1-60

MILNE, William George

- 1-60. (and LUCAS, K A.) Seismic activity in British Columbia [abs.] Geol Soc. America Bull., v. 71, no 12, pt. 2, p 2068, Dec. 1960  
2-60. (and WHITE, W. R. H.) A seismic survey in the vicinity of Vancouver Island, British Columbia Dominion Observatory Ottawa Pub, v 24, no 7, p 145-154, illus., 1960

MILTON, Charles

- 1-60. (and CHAO, Edward Ching-Te, and AXELROD, Joseph Meyer, and GRIMALDI, Frank Saverio) Reedmergnerite,  $\text{NaBSi}_3\text{O}_8$ , the boron analogue of albite, from the Green River formation, Utah Am Mineralogist, v 45, nos 1-2, p 188-199 incl. geol sketch map, diagrams, tables, and illus, Jan -Feb 1960

- 2-60 (and FAHEY, Joseph John) Classification and association of the carbonate minerals of the Green River formation Am Jour. Sci., v. 258-A (Bradley Volume), p. 242-246 incl. sketch map, diagrams, and table, 1960
- 3-60. (and CHAO, Edward Ching-Te, and FAHEY, Joseph John, and MROSE, Mary Emma) Silicate mineralogy of the Green River formation of Wyoming, Utah, and Colorado Internat. Geol. Cong., 21st, Copenhagen, 1960, Rept., pt. 21, p. 171-184 incl. index map, tables, and illus., 1960
- 4-60. (and INGRAM, Blanche, and BLADE, Lawrence Vernon) Kimzeyite, a zirconium garnet from Magnet Cove, Arkansas [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1930-1931, Dec 1960
- 5-60 (and FAHEY, Joseph John) Green River mineralogy--a historical account, in Overthrust belt of southwestern Wyoming and adjacent areas Wyoming Geol. Assoc., 15th Ann. Field Conf., 1960, Guidebook, p. 159-162 incl. illus. and table, 1960.
- MILTON, Daniel Jeremy. See also GRISCOM, Andrew 3-60, NEW ENGLAND INTERCOLLEGIATE GEOL. CONF. 1-60
- 1-60 Sphene-flecked diorite from Maine [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1931, Dec 1960
- 2-60. (leader) Geology of the Old Speck Mountain quadrangle [Maine], Trip D in Field trips in west-central Maine New England Intercollegiate Geol. Conf., 52d Ann. Mtg., Oct. 1960, Guidebook, p. 25-32 incl. sketch maps, 1960
- MINARD, James Pierson. See also OWENS, J. P. 2-60, 3-60
- 1-60. (and OWENS, James Patrick) Differential subsidence of the southern part of the New Jersey coastal plain since early Late Cretaceous time Art. 82 in U. S. Geol. Survey Prof. Paper 400-B, p. B184-B186 incl. index map, diagrams, and tables, 1960.
- 2-60 Color aerial photographs facilitate geologic mapping on the Atlantic Coastal Plain of New Jersey Photogramm. Eng., v. 26, no. 1, p. 112-116 incl. index map, sections, and illus., Mar. 1960.
- MINATO, M
- 1-60. Eine permische Koralle von König Oscarsland im nordwestlichen Ellesmereland [Northwest Territories] Stockholm Univ. Stockholm Contr. Geology, v. 6, p. 25-38, illus. and English abs., 1960
- MINA UHINK, Federico
- 1-60. Desarrollo petrolero en México durante 1959 Asoc. Mexicana Geólogos Petroleros Bol., v. 12, nos. 3-4, p. 95-102, sketch maps, diagram, and tables, Mar-Apr 1960.
- MINING WORLD
- 1-60 Boomer mine [Colorado]--Non-pegmatite sources of high grade beryl-lum ore from hydrothermal vein Mining World, v. 22, no. 3, p. 44-45, incl. illus., Mar 1960
- 2-60. Wyoming's trona trend Mining World, v. 22, no. 4, p. 26 incl. sketch map, Apr 1960
- 3-60 New Jersey's new zinc mine [Tennessee] Mining World, v. 22, no. 4, p. 27-29 incl. index map and illus., Apr 1960
- MINK, John F.
- 1-60. Some geochemical aspects of sea water intrusion in an island aquifer [Hawaii] Internat. Assoc. Sci. Hydrology (Gentbrugge, Belgium) Pub. 52, p. 424-439 incl. diagrams, tables, and French abs., 1960
- MINSHALL, Francis Edward
- 1-60 Roy Merrill Barnes (1891-1960) Am. Assoc. Petroleum Geologists Bull., v. 44, no. 9, p. 1581-1582 incl. portrait, Sept. 1960
- MINTON, Paul D. See HERRIN, Eugene Thornton, Jr. 1-60
- MIRSKY, Arthur
- 1-60. Stratigraphy of the nonmarine Upper Jurassic and Lower Cretaceous rocks, southern Big Horn Mountains, Wyoming [abs.] Dissert. Abs., v. 21, no. 4, p. 850-851, Oct 1960

## MISCH

MISCH, Peter H

- 1-60. Large overthrusts in the northwestern Cascades near the 49th parallel (Whatcom and Skagit Counties, Washington, and lower Tomyhoi Creek area, British Columbia) [abs.] Geol. Soc. America Bull., v 71, no. 12, pt 2, p. 2069, Dec. 1960
- 2-60. West Cordilleran metamorphic and granitic evolution [abs.] Geol. Soc. America Bull., v. 71, no 12, pt. 2, p 2069, Dec. 1960
- 3-60. Regional structural reconnaissance in central-northeast Nevada and some adjacent areas--Observations and interpretations, in Geology of east central Nevada: Intermountain Assoc Petroleum Geologists, 11th Ann. Field Conf, 1960 Guidebook, p 17-42 incl index and geol. sketch maps and sections, 1960

MISER, Hugh Dinsmore

- 1-60. (and HENDRICKS, Thomas Andrews) Age of Johns Valley shale, Jackfork sandstone, and Stanley shale [Ouachita Mountains, Arkansas-Oklahoma] Am. Assoc. Petroleum Geologists Bull., v. 44, no 11, p 1829-1832, Nov 1960.

MISIASZEK, Edward Thomas

- 1-60. Engineering properties of Champaign-Urbana [Illinois] subsoils [abs.] Dissert. Abs., v 21, no 6, p 1498-1499, Dec. 1960

MISSISSIPPI GEOLOGICAL SOCIETY

- 1-60. The Cenozoic of southeastern Mississippi and southwestern Alabama, 15th field trip, May 12-14, 1960, guide book Jackson, Miss, 48 p incl. index, geol. and other sketch maps, sections, diagram, and illus., profile, 1960. Includes individual papers which are cited separately.

MITCHELL, John

- 1-60. (and QUINN, John C.) Coal research, Pt. 1 Mining Cong Jour., v. 46, no. 2, p. 86-94 incl. illus., Feb. 1960
- 2-60. (and QUINN, John C.) Coal research, Pt. 2 Mining Cong Jour., v 46, no. 3, p 72-78 incl. illus., Mar 1960.

MITCHELL, Richard Scott. See also McGAVOCK, E. H. 1-60, MANDARINO, J A. 1-60

- 1-60. Small barite nodules from Ovid, Colorado Rocks and Minerals, v. 35, nos 1-2, p 9-11 incl diagram and illus., Jan -Feb 1960
- 2-60. (and McGAVOCK, E. H.) Apatite from the Morefield pegmatite, Amelia County, Virginia Rocks and Minerals, v 35, nos. 11-12, p. 553-555 incl diagram and tables, Nov.-Dec 1960
- 3-60. (and PHARR, Richard F.) Strontium minerals from Wise County, Virginia Virginia Minerals, v. 6, no 4, p 1-4, illus, Oct 1960

MITCHELL, Stanley N.

- 1-60. Use of engineering geology in the Colorado Department of Highways [abs.] Geol Soc America Bull, v. 71, no. 12, pt 2, p. 1931, Dec 1960.
- 2-60. Establishing the use of engineering geology in the Colorado Department of Highways [abs.] California Assoc. Eng. Geologists, 3d Ann. Mtg., Berkeley, Oct 14-16, 1960, p 11 [1960].

MITCHELL-THOMÉ, Raoul C

- 1-60. Lithologic features of the younger Tertiaries of Puerto Rico Caribbean Geol Conf., 2d, Mayaguez, Puerto Rico, Jan 4-9, 1959, Trans, p 138-142 incl. chart and table, 1960

MOBERLY, Ralph Moon, Jr.

- 1-60. Morrison, Cloverly, and Sykes Mountain formations, northern Bighorn Basin, Wyoming and Montana Geol. Soc. America Bull., v 71, no. 8, p 1137-1176 incl sketch maps, charts, diagrams, and table, also lithologic section and illus, Aug. 1960.

MØLLER, Jens Tyge

- 1-60. Glaciers in Upemviki Ø [Greenland], with special reference to the periglacial phenomena, in Denmark--Contributions to problems discussed



in symposia and excursions Internat Geog. Cong., 19th, Norden, 1960, Guidebook, p 185-208 incl. sketch maps and illus., 1960

MOENCH, Robert H See HILPERT, Lowell S. 1-60, SCHLEE, John Stevens 1-60

MOGG, Joe Luther

1-60 (and SCHOFF, Stuart Leeson, and REED, Edwin William) Ground-water resources of Canadian County, Oklahoma Oklahoma Geol Survey Bull 87, 112 p, illus., 1960

MOHRBACHER, J. A. See BOWEN, B. M

MOLLARD, John Douglas. See also BELCHER, D J 1-60

1-60 Airphoto analysis and interpretation--a laboratory manual of selected airphotos showing landforms and soil conditions in western Canada Regina, Saskatchewan, privately printed, unpagged, illus., prepared for 1960 short course, Univ Alberta [1960?].

2-60 Airphoto interpretation helps man conquer Muskeg Oilweek, v. 11, no 23, p. 24-31, illus., July 23, 1960

MOLLER, William P

1-60. Analcite crystals from Point Sal [Calif] Mineralogist, v 28, nos. 11-12, p 196-199 incl sketch map and illus., Nov -Dec 1960

MOLLISON, R. D See FOGARTY, Charles Franklin 1-60

MOLLOY, Martin W

1-60 (and KERR, Paul Francis) X-ray spectrochemical analysis--An application to certain light elements in clay minerals and volcanic glass Am Mineralogist, v 45, nos 9-10, p 911-936 incl diagrams and tables, Sept -Oct 1960

MOMPER, James Arthur. See VERVILLE, George Julius 1-60

MOMYER, Floyd F See ADELMAN, Frank L. 1-60

MONEY, P. L.

1-60. Barnett Lake Area (West Half), in Cheesman, R L., Summary report of geological surveys conducted in the Precambrian area of Saskatchewan, 1960 Regina, Saskatchewan Dept Mineral Resources, Mines Br., Geology Div, p 14-15 [1960]

MONEYMAKER, Berlen Clifford

1-60 Earthquakes felt in Kentucky from 1776 through 1959 [abs] Geol Soc. America Bull, v. 71, no 12, pt 2, p. 2022, Dec 1960

MONNETT, Victor Brown. See SKILLMAN, Margaret W.

MONROE, Watson Hiner

1-60 Sinkholes and towers in the karst area of north-central Puerto Rico Art 164 in U. S. Geol Survey Prof Paper 400-B, p. B356-B360 incl. geol and sketch maps and illus, 1960

MONTAGNE, John M de la. See also BLACKSTONE, D. L., Jr. 1-60

1-60. Stratigraphy and structure of the Pick Ranch area, Carbon County, Wyoming [abs] Geol. Soc. America Bull., v 71, no 12, pt 2, p 2037-2038, Dec 1960.

2-60 Geomorphic problems in the Madison Valley, Madison County, Montana --An introduction and synthesis, in West Yellowstone--Earthquake area Billings Geol.Soc., 11th Ann. Field Conf, Sept 1960, [Guidebook] p 165-169 incl illus, 1960

MONTAGU, Montague Francis Ashley

1-60 Artificial thickening of bone and the Piltdown skull Nature (London), v. 187, no. 4732, p. 174, with discussion by K P. Oakley, July 9, 1960.

## MONTAGUE

MONTAGUE, S. A.

- 1-60. Mica, in *Am. Inst. Mining, Metall., and Petroleum Engineers, Industrial minerals and rocks*, p. 551-566 incl. tables, 1960

MONTANA BUREAU of MINES and GEOLOGY

- 1-60. Biennial report of the Montana Bureau of Mines and Geology, a department of the Montana School of Mines, to the Legislative Assembly for the reporting period July 1, 1958 to June 30, 1960 *Montana Bur. Mines and Geology Spec. Pub.* 19, 15 p. incl. table, mineral map, Nov. 1960.

MONTGOMERY, Arthur

- 1-60 (and SUTHERLAND, Patrick Kennedy) *Trail guide to the upper Pecos New Mexico Bur. Mines and Mineral Resources Scenic Trips Geol. Past*, no. 6, 83 p., illus. incl. geol. map, 1960

MONTGOMERY, Gill

- 1-60 (and DALY, J. J., and MYSLINSKI, Frank J.) *Mining methods and costs at Crystal-Victory and Minerva No. 1 fluorspar mines, Minerva Oil Co., Hardin County, Ill.* U. S. Bur. Mines Inf. Circ. 7956, 45 p. incl. index and geol. sketch map, section, diagrams, tables, and illus., diagram, 1960.

MONTGOMERY, J. H. See THOMPSON, Robert Mitchell 1-60

MOODY, Graham Blair

- 1-60. George Clark Gester (1884-1959) *Am. Assoc. Petroleum Geologists Bull.*, v. 44, no. 3, p. 374-376 incl. portrait, Mar. 1960

MOOK, Charles Craig

- 1-60. *Diplocynodon* remains from the Bridger beds of Wyoming *Am. Mus. Novitates*, no. 2007, 4 p. incl. illus., June 15, 1960

MOOKHERJEE, Asoke

- 1-60. (and SAHU, K. C.) *Microhardness of the plagioclase series* *Am. Mineralogist*, v. 45, nos. 5-6, p. 742-744 incl. diagram and table, May-June 1960

MOONEY, Harold Morton. See SATO, Motoaki 1-60

MOORBATH, S.

- 1-60. Radiochemical methods, Chap. 8 in Smales, A. A., and Wager, L. R., ed., *Methods in geochemistry* New York, N. Y., Intersci. Publishers, p. 247-296, illus., 1960  
2-60. Polarography, Chap. 10 in Smales, A. A., and Wager, L. R., ed., *Methods in geochemistry* New York, N. Y., Intersci. Publishers, p. 358-388, illus., 1960  
3-60. (and WEBSTER, R. K., and MORGAN, J. W.) *Absolute age determination in south-west Greenland--The Julianehaab Granite, the Ilímaussaq Batholith and the Kûngnât Syenite Complex* *Medd. om Grønland*, bind 162, nr. 9, p. 3-14, illus., 1960, reprinted as *Grønlands Geol. Undersøgelse Misc. Paper* 31, 1960, Copenhagen Univ. Mus. *Minéralogie et Géologie Commun. Géol.* 110, 1960.

MOORE, Carl E.

- 1-60 (and ROBINSON, Thomas A.) *The gravimetric determination of cadmium with the sodium salt of 1-phenyl-tetrazoline-5-thione* *Anal. Chim. Acta* (Amsterdam), v. 23, no. 6, p. 533-537 incl. diagram and tables, Dec. 1960.

MOORE, David G. See also SHEPARD, F. P. 5-60

- 1-60. *Acoustic-reflection studies of the continental shelf and slope off southern California* *Geol. Soc. America Bull.*, v. 71, no. 8, p. 1121-1136 incl. sketch map, diagrams, and table, profiles, Aug. 1960

MOORE, Derek See BAAS BECKING, Lourens Gerhard Marinus 1-60

MOORE, Fred Edward

- 1-60 Summary of Cenozoic history, southern Laramie Range, Wyoming and Colorado, in Rocky Mtn. Assoc Geologists, Guide to the geology of Colorado Denver, p 217-222 incl index map, diagrams, and illus., 1960.

MOORE, George William

- 1-60 Recent eustatic sea-level fluctuations recorded by Arctic beach ridges Art 155 in U. S. Geol. Survey Prof Paper 400-B, p B335-B337 incl profile, 1960.  
 2-60. (and COLE, J. Y.) Coastal processes in the vicinity of Cape Thompson, Alaska U. S. Geol. Survey Rept. TEI-753, p 41-55 incl. sketch maps and diagram, Jan 1960.  
 3-60 (editor) Origin of limestone caves--A symposium with discussion Natl Speleol Soc Bull, v 22, pt 1, p 3-84, illus, Jan 1960 Includes individual papers which are cited separately  
 4-60 Geology of Carlsbad Caverns, New Mexico Natl Speleol Soc Guidebook Ser, no 1, p 10-18, illus, 1960

MOORE, Gerald K See HARRIS, Hobart Byron 1-60

MOORE, Howard Earl

- 1-60 The geochemistry of the inert gases in natural gas [abs] Dissert. Abs, v 21, no 3, p 455, Sept 1960

MOORE, James Gregory

- 1-60 Mesozoic age of roof pendants in west-central Nevada Art 131 in U S Geol Survey Prof Paper 400-B, p B285-B289 incl geol sketch map and tables, 1960.  
 2-60 Curvature of normal faults in the Basin and Range province of the western United States Art 188 in U S Geol. Survey Prof Paper 400-B, p B409-B411 incl. diagram and table, 1960

MOORE, John Ezra

- 1-60. Clay mineralogy problems in oil recovery--Part 1 Petroleum Engineer for Management, v 32, no. 2, p B-40-B-41, B-44-B-47 incl diagrams, Feb 1960  
 2-60 Clay mineralogy problems in oil recovery--Part 2, How to combat swelling clays Petroleum Engineer for Management, v. 32, no 3, p. B-78, B-90, B-94-B-96, B-98-B-101 incl diagrams, Mar 1960.  
 3-60 Petrography of northeastern Lake Michigan bottom sediments [abs] Dissert Abs, v 21, no 6, p 1526, Dec 1960

MOORE, John Marshall

- 1-60. (and HART, S R, and BARNETT, C. C, and HURLEY, Patrick Mason) Potassium-argon ages in northern Manitoba Geol Soc America Bull., v 71, no. 2, p 225-229 incl geol sketch maps and table, Feb 1960

MOORE, Raymond Cecil See also JOINT COMM INVERTEBRATE PALEONTOLOGY 1-60

- 1-60. Stratigraphic frontiers in petroleum geology [abs] Am Assoc. Petroleum Geologists Bull., v. 44, no. 1, p 129, Jan 1960  
 2-60. Can AGI survive? GeoTimes, v 4, no 5, p 10-12, Jan -Feb 1960

MOORE, Richard Thomas. See also WILSON, E D 2-60, 3-60

- 1-60 (and WILSON, Eldred Dewey, and O'HAIRE, Robert T) Geologic map of Coconino County, Arizona Tucson, Arizona Bur. Mines, scale 1 375,000 (about 1 in to 6 mi), 1960

MOORE, Robert A.

- 1-60. (and MILLER, Halsey Wilkinson, Jr) A dinosaur-bearing section of Cretaceous rocks in the Empire Mountains, Pima County, Arizona Arizona Geol Soc Digest, v 3, p 57-61 incl illus, Mar. 1960

MOORE, Shirley See ANDERSON, Sonia Ruth 1-60, BARDEEN, James Maxwell 1-60

MOORE

MOORE, Thomas Francis. See DUNLAP, Henry Francis 1-60, 2-60

MOORHOUSE, Walter Wilson

- 1-60 Gunflint iron range in the vicinity of Port Arthur, district of Thunder Bay Ontario Dept. Mines [Ann. Rept.] 1960, v 69, pt 7, p 1-40, illus. incl geol maps in separate folder, 1960.

MORALES, Gustavo

- 1-60 The Pepper shale, in Cretaceous stratigraphy of the Grand and Black Prairies, east-central Texas Baylor Geol Soc, Field Conf., Apr 1960, Guidebook, p 100-104, 1960

MORGAN, J. W. See MOORBATH, S. 3-60

MORGAN, Vincent

- 1-60. Mineral names--right and wrong Gems and Minerals, no. 275, p 46, 75-78, Aug 1960.

MORIMOTO, Nobuo

- 1-60 (and KULLERUD, Gunnar) Crystallographic study of the  $\text{Cu}_9\text{S}_5$ - $\text{Cu}_5\text{FeS}_4$  join [abs.] Jour Geophys. Research, v. 65, no 8, p. 2512, Aug. 1960.  
2-60. (and DONNAY, Gabrielle, and KULLERUD, Gunnar) Peculiarities of sulfide crystal structures [abs.] Geol. Soc. America Bull, v 71, no. 12, pt 2, p. 1931-1932, Dec 1960.  
3-60. (and KULLERUD, Gunnar) Crystal structures of the  $\text{Cu}_9\text{S}_5$ - $\text{Cu}_5\text{FeS}_4$  series [abs.] Acta Cryst., v. 13, pt. 12, p. 1007, Dec. 1960.  
4-60. (and APPLEMAN, Daniel Everett, and EVANS, Howard Tasker, Jr.) The crystal structures of clinoenstatite and pigeonite Zeitschr. Kristallographie (Frankfurt am Main, Germany), Band 114, Heft 1-2, p 120-147 incl diagrams and tables, with German abs., June 1960

MORISAWA, Marie E.

- 1-60 Erosion rates on Hebgen earthquake scarps, Montana [abs.] Geol. Soc America Bull, v. 71, no 12, pt. 2, p 1932, Dec. 1960.

MORITZ, Carl Albert

- 1-60. Summary of the Jurassic stratigraphy of southwestern Montana, in West Yellowstone--Earthquake area Billings Geol. Soc, 11th Ann Field Conf, Sept. 1960, [Guidebook] p. 239-243 incl index and isopach maps, chart, and section, 1960.

MORLEY, L. W. See GREGORY, Alan Frank 3-60, 4-60

MORRILL, Philip

- 1-60. New Hampshire mines and minerals localities 2ded., Hanover, Dartmouth Coll. Mus, 46 p, illus., 1960.  
2-60. (and CHAFFEE, Robert Gibson) Vermont mines and minerals localities--Pt 2, Northern Vermont Hanover, N. H., Dartmouth Coll. Mus., 18 p., illus, 1960.

MORRIS, Arthur

- 1-60. The Settee Lake Area (West Half), in Cheesman, R. L., Summary report of geological surveys conducted in the Precambrian area of Saskatchewan, 1960 Regina, Saskatchewan Dept Mineral Resources, Mines Br, Geology Div., p. 4-5 [1960].

MORRIS, Donald Arthur See also MOULDER, E. A. 1-60

- 1-60. (and JOHNSON, Arnold Ivan) Correlation of Atterberg limits with geology of deep cores from subsidence areas in California Am Soc. Testing Materials Spec. Tech. Pub 254, p. 183-189, illus, with discussion by C. W Jones, June 1960.

MORRIS, H. T. See BUSH, J B 1-60

MORRIS, James Mervyn, Jr.

1-60. Disposal of oil-field brines in the Central Valley of California, in Symposium on technical developments in the handling and utilization of water and industrial waste water Am Soc. Testing Materials Spec Tech. Pub 273, p. 48-57 incl sections and table, with discussion by A. E. Woolen, Dec 1960

MORRIS, John E. See CRIDLAND, Arthur A 2-60

MORRIS, Robert Hamilton See WITKIND, Irving Jerome 2-60

MORRISON, Charles C., Jr.

1-60. Glacier reconnaissance, American Rocky Mountains, 1960 [abs ] Geol Soc. America Bull , v. 71, no. 12, pt. 2, p 2106, Dec 1960

MORRISON, Roger Barron See FRIENDS PLEISTOCENE, Rocky Mtn Sec 1-60

MORTENSEN, James L. See SCHWENDINGER, Richard B. 1-60

MORTON, Roy J See STRUXNESS, E. G 1-60

MOSEN, A W. See SCHMITT, R A 1-60

MOSER, Frank See McCULLOCH, David Sears 1-60

MOSS, John Hall See PENNSYLVANIA EARTH and SPACE SCI COURSE ADVISORY COMM 1-60

MOTTS, Ward Sundt

1-60 (and GAAL, Robert A.) Geology of Pajarito Mountain area, Otero County, New Mexico Am Assoc Petroleum Geologists Bull , v. 44, no 1, p 108-110 incl index maps, Jan 1960.

MOULDER, Edward Arlo

1-60. (and KLUG, M F , and MORRIS, Donald Arthur, and SWENSON, Frank Albert) Geology and ground-water resources of the lower Little Bighorn River valley, Big Horn County, Montana, with special reference to the drainage of waterlogged lands, with a section on Chemical quality of the water by R A. Krieger U S. Geol Survey Water-Supply Paper 1487, 223 p incl diagrams, tables, and illus., also geol maps and diagrams, 1960

2-60 Occurrence of ground water in the Ogallala and several consolidated formations in Colorado--A report to the Ground-Water Codification and Research Studies Committee Colorado Water Conserv Board Ground-Water Ser Circ 5, 8 p , Dec 1960

MOULTON, Edward Quentin See BRANT, Russell Alan 2-60

MOUNT, J. Russell. See REEVES, Corwin C , Jr 1-60

MOUNTJOY, Eric Walter See also CANADA GEOL. SURVEY 19-60

1-60. Regional structure of Rocky Mountains in the Jasper area, Canada [abs ] Geol Soc. America Bull , v 71, no 12, pt 2, p 2070, Dec 1960.

MOWER, Reed W See HOOD, James W 1-60

MOXHAM, Robert L

1-60 Minor element distribution in some metamorphic pyroxenes [Ontario and Quebec] Canadian Mineralogist, v. 6, pt 4, p 522-545, tables, 1960

MOXHAM, Robert Morgan

1-60. Airborne radioactivity surveys in geologic exploration Geophysics, v 25, no. 2, p 408-432 incl. sketch maps, diagrams, and table, Mar 1960.

## MOYER

MOYER, Paul Tyson, Jr.

1-60. Preliminary report on the Guyon area, Mistassini Territory Quebec Dept. Mines Geol. Surveys Br. Prelim. Rept 427, 8 p., geol. map, 1960, also French ed.

MROSE, Mary Emma. See also CLARK, J. R. 3-60, EVANS, H. T., Jr. 1-60, MILTON, Charles 3-60, SCHALLER, W. T. 1-60

1-60. (and APPLEMAN, Daniel Everett) Crystal structure of fairfieldite,  $\text{Ca}_2(\text{Mn,Fe})(\text{PO}_4)_2 \cdot \text{H}_2\text{O}$  [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1932-1933, Dec. 1960.

MUAN, Arnulf. See also HAHN, W. C., Jr. 1-60, MacCHESNEY, J. B. 1-60, 2-60

1-60. (and SÖMIYA, Shigeyuki) Phase equilibria in the system iron oxide- $\text{Cr}_2\text{O}_3$ - $\text{SiO}_2$  in air Am Ceramic Soc. Jour., v. 43, no. 10, p. 531-541 incl diagrams, Oct. 1, 1960.

MUCKLEROY, James Arnold

1-60. (and FREDERICKSON, Arman Frederick) Double calcium determination and the calcilog, by Charles Berger [condensation] Am Assoc. Petroleum Geologists Bull., v. 44, no. 12, p. 1937-1938, Dec. 1960.

MUEHLBERGER, William Rudolph See also BOYER, R. E. 1-60

1-60. Internal structures and mode of uplift of the Grand Saline salt dome, Van Zandt County, Texas, United States of America Internat. Geol. Cong., 21st, Copenhagen, 1960, Rept., pt. 18, p. 28-33 incl. index map and diagram, 1960.

2-60 Structure of the central Chama platform, northern Rio Arriba County, New Mexico [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1933, Dec. 1960.

3-60 Precambrian rocks of the Tusas Mountains, Rio Arriba County, New Mexico, in Rio Chama Country New Mexico Geol. Soc., 11th Field Conf., Oct. 1960, Guidebook, p. 45-47, 1960.

4-60. (and others) Stratigraphy of the Chama quadrangle, northern Rio Arriba County, New Mexico, in Rio Chama Country New Mexico Geol. Soc., 11th Field Conf., Oct. 1960, Guidebook, p. 93-102, table, 1960.

5-60. Structure of the central Chama platform, northern Rio Arriba County, New Mexico, in Rio Chama Country New Mexico Geol. Soc., 11th Field Conf., Oct. 1960, Guidebook, p. 103-109, illus., 1960.

MUELLER, George

1-60. (and RECKE, W., and VERA-MEGE, R.) Interrelations between coloration, absorption spectra and radioactivities of fluorites from diverse localities [abs.]. Acta Cryst., v. 13, pt. 12, p. 1009, Dec. 1960.

MUELLER, Ivan Istvan

1-60 The gradients of gravity and their applications in geodesy [abs.]. Desert Abs., v. 21, no. 4, p. 851, Oct. 1960.

MUELLER, Robert Francis

1-60. Compositional characteristics and equilibrium relations in mineral assemblages of a metamorphosed iron formation [Quebec] Am Jour. Sci., v. 258, no. 7, p. 449-497 incl. index map, diagrams, and tables, Summer 1960.

2-60 Functional relations expressing the equilibrium distribution of iron and magnesium among certain metamorphic minerals [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1933-1934, Dec. 1960

MUESEBECK, Carl Frederick William

1-60. A fossil braconid wasp of the genus *Ecphyllus* (Hymenoptera) [Mexico] Jour. Paleontology, v. 34, no. 3, p. 495-496 incl. illus., May 1960

MUIR-WOOD, Helen Margaret

1-60. (and COOPER, G. Arthur) Morphology, classification and like habits of the Productoidea (Brachiopoda). Geol. Soc. America Mem. 81, 447 p., illus., 1960.

MULLENS, Thomas Ellison

- 1-60. Geology of the Clay Hills area, San Juan County, Utah U S. Geol Survey Bull 1087-H, p 259-336 incl. index maps, geol. map, 1960

MULLER, Daniel A.

- 1-60. Physiography, in Cretaceous stratigraphy of the Grand and Black Prairies, east-central Texas Baylor Geol Soc, Field Conf, Apr 1960, Guidebook, p 55-61 incl index and sketch maps, 1960

MULLER, Ernest Hathaway. See FRIENDS PLEISTOCENE GEOLOGY, Eastern Sec 1-60

MULLIGAN, Robert

- 1-60. Beryllium occurrences in Canada (preliminary account) Canada Geol Survey Paper 60-21, 40 p., table, 1960

MULLINEAUX, Donal Ray

- 1-60. (and CRANDELL, Dwight Raymond) Late Recent age of Mount St Helens volcano, Washington Art 143 in U S. Geol Survey Prof Paper 400-B, p B307-B308, 1960  
2-60. Volcanic debris flows in western Washington Geol. Soc. Oregon Country Geol. News Letter, v 26, no. 5, p. 40, May 1960

MULLINGS, W M

- 1-60. Let's look at luminescence Mineralogist, v 28, nos 2-3, p 9-13, Feb-Mar 1960

MULLIS, Ira B.

- 1-60. Roadbeds on highways and airport runways Am. Soc. Civil Engineers Proc, v 86, paper 2412, Jour Highway Div, no HW 1, pt 1, p 1-27, illus., Mar 1960, discussions by J. Feld and others, paper 2694, no HW 4, pt 1, p 39-49, illus., Dec 1960

MUMPTON, Frederick Albert

- 1-60 (and ROY, Rustum) Low-temperature equilibria among  $ZrO_2$ ,  $ThO_2$ , and  $UO_2$  Am Ceramic Soc Jour., v. 43, no 5, p. 234-240 incl diagrams, May 1, 1960  
2-60. Clinoptilolite redefined Am Mineralogist, v 45, nos. 3-4, p 351-369 incl diagrams, tables, and illus., Mar-Apr 1960

MUNIR, Zuhair A. See WITHERSPOON, Paul A. 1-60

MUNIZ, Sotero, Jr.

- 1-60. The engineering properties of sandstones Compass, v 37, no 3, p 220-233 incl diagrams, Mar. 1960

MUNK, Walter Heinrich

- 1-60 (and MacDONALD, Gordon J. F.) Continentality and gravitational field of the earth Jour. Geophys Research, v 65, no. 7, p 2169-2172 incl. table, July 1960.

MURATA, Kiguma Jack See also BASTRON, Harry 1-60, EATON, J P 1-60

- 1-60 Occurrence of CuCl emission in volcanic flames [Hawaii] Am Jour Sci, v 258, no. 10, p 769-772 incl. table, Dec. 1960  
2-60. A new method of plotting chemical analyses of basaltic rocks Am. Jour Sci., v 258-A (Bradley Volume), p 247-252 incl diagrams, 1960.  
3-60. Diary of a volcano [Hawaii] Natl. Parks Mag, v 34, no 148, p. 12-13 incl chart, Jan 1960

MURDOCH, Joseph

- 1-60. (and CHALMERS, Robert A) Ettringite ("Woodfordite") from Crestmore, California Am Mineralogist, v. 45, nos 11-12, p 1275-1278 incl. tables, Nov-Dec. 1960  
2-60. (and WEBB, Robert Wallace) Supplement to minerals of California for 1955 through 1957 California Div Mines Bull 173, supp, 64 p, with index to minerals of California arranged by Counties, compiled by E. Collins, 1960.

## MURIEDAS PAVÓN

MURIEDAS PAVÓN, Alfonso See BASURTO GARCÍA, Jesús 1-60

MURPHY, Daniel Lawson

1-60. Preliminary report on the Carheil and Le Gentilhomme Lakes area, Saguenay electoral district Quebec Dept. Mines Geol Surveys Br Prelim Rept. 412, 10 p, geol. map, 1960, also French ed.

MURPHY, Michael A. See also POPENOE, W. P 1-60, WINTERER, E. L 1-60 1-60. (and RODDA, Peter Ulisse) Mollusca of the Cretaceous Bald Hills formation of California--Pt 1 Jour. Paleontology, v. 34, no. 5, p. 835-858 incl. geol. sketch map, sections, and chart, illus, Sept 1960

MURPHY, Thomas Daniel

1-60. Silica sand and pebble, in Am. Inst Mining, Metall., and Petroleum Engineers, Industrial minerals and rocks, p 763-772, 1960.

2-60. Distribution of silica resources in eastern United States U. S. Geol. Survey Bull 1072-L, p. 657-665, illus., 1960.

MURPHY, Vincent J.

1-60. (and HOLT, Richard J ) Engineering seismology applications in deep weathered rock areas. Cong. Panam. Mecánica Suelos y Cimentaciones, 1st, México, D. F., Sept. 7-12, 1959, Mem, v 2, p. 889-901 incl. diagrams, illus., and Spanish abs., 1960.

MURPHY, W. I R. See TISOT, P R. 1-60

MURRAY, Floyd E

1-60. An interpretation of the Hilliard thrust fault, Lincoln and Sublette Counties, Wyoming, in Overthrust belt of southwestern Wyoming and adjacent areas Wyoming Geol Assoc., 15th Ann Field Conf., 1960, Guidebook, p. 181-186 incl. sketch maps and sections, 1960.

MURRAY, Grover Elmer

1-60. (and others) Late Cretaceous fossil locality, eastern Parras Basin, Coahuila, México Jour. Paleontology, v 34, no 2, p 368-370 incl. sketch map and section, Mar. 1960

2-60 (and FURNISH, William Madison, Jr., and CARRILLO BRAVO, José) Carboniferous goniatites from Caballeros Canyon, State of Tamaulipas, Mexico Jour Paleontology, v 34, no. 4, p 731-737 incl index maps, geol sketch map, and diagrams, July 1960

3-60. (and others) Stratigraphy of Difunta Group, Parras Basin, States of Coahuila and Nuevo Leon, Mexico Internat. Geol. Cong., 21st, Copenhagen, 1960, Rept., pt. 5, p 82-96 incl. index and tectonic maps, section, and chart, 1960.

4-60. Geologic framework of Gulf Coastal province of United States, in Shepard, F. P., and others, ed., Recent sediments, northwest Gulf of Mexico Tulsa, Okla., Am. Assoc. Petroleum Geologists, p. 5-33, illus, revised 1960, originally published 1960.

MURRAY, Haydn Herbert. See also PINSAK, A. P

1-60. Clay, in Am. Inst Mining, Metall., and Petroleum Engineers, Industrial minerals and rocks, p 259-284 incl diagrams, tables, and illus., 1960

2-60. (and LYONS, Sanford Carlisle) Further correlations of kaolinite crystallinity with chemical and physical properties, in Swineford, Ada, ed., Clays and clay minerals, V 8 Natl. Conf Clays and Clay Minerals, 8th, Norman, Okla., Oct 1959, Proc., p. 11-17 incl. diagrams, also illus, 1960 (Issued as Internat Earth Science Ser Mon 9 of Pergamon Press, New York.)

MURRAY, Raymond Carl

1-60 Origin of porosity in carbonate rocks Jour Sed Petrology, v 30, no 1, p 59-84 incl diagrams and illus, Mar 1960



MURTHY, M Krishna

- 1-60. (and HUMMEL, Floyd Allen) X-ray study of the solid solution of  $\text{TiO}_2$ ,  $\text{Fe}_2\text{O}_3$ , and  $\text{Cr}_2\text{O}_3$  in mullite ( $3\text{Al}_2\text{O}_3 \cdot 2\text{SiO}_2$ ) Am Ceramic Soc. Jour, v 43, no 5, p 267-273 incl. diagrams and tables, May 1, 1960.

MURTHY, Varanasi Rama

- 1-60. Isotopic composition of silver in an iron meteorite Phys Rev Letters, v 5, no. 12, p 539-541, table, Dec. 15, 1960

MUSGRAVE, Albert Wayne

- 1-60. (and WOOLLEY, William C., and GRAY, Helen) Outlining of salt masses by refraction methods Geophysics, v. 25, no 1, p 141-167 incl sketch maps, diagrams, and illus., Feb 1960.

MUTCH, Thomas A

- 1-60 (and GWINN, Vinton E) Westward overturning and thrusting in the Flint Creek Range, Montana [abs] Geol Soc America Bull, v 71, no 12, pt. 2, p 1934, Dec 1960

MYERS, Alfred Tennyson. See also HUFF, L C 1-60

- 1-60 (and HAMILTON, John C, and WILMARTH, Verl Richard) A study of rhenium and molybdenum in uranium ore from the Runge mine, Fall River County, South Dakota, by means of a spectrographic and concentration method Art 20 in U. S Geol. Survey Prof Paper 400-B, p. B39-B41 incl. table, 1960.

- 2-60 (and Hamilton, John C) Rhenium in plant samples from the Colorado Plateau [abs] Geol. Soc America Bull., v 71, no 12, pt 2, p 1934, Dec 1960

MYERS, Arthur John

- 1-60 An area of gypsum karst topography in Oklahoma Oklahoma Geology Notes, v 20, no 1, p 10-14, illus, Jan 1960  
2-60. Alabaster Caverns Oklahoma Geology Notes, v 20, no 6, p 132-137, illus. incl geol. sketch map, June 1960

MYERS, Donald Arthur

- 1-60. Stratigraphic distribution of some Pennsylvanian Fusulinidae from Brown and Coleman Counties, Texas U S. Geol. Survey Prof. Paper 315-C, p 37-53, illus., 1960  
2-60. Stratigraphy of the Cisco group, Wayland quadrangle, Stephens and Eastland Counties, Texas, in A study of the Cisco facies near Breckenridge, Texas Soc Econ. Paleontologists and Mineralogists Permian Basin Chap, Ann Field Trip, Apr. 1960, [Guidebook] p. 47-59, illus, 1960.

MYERS, John B.

- 1-60. Vermiculite, in Am Inst. Mining, Metall, and Petroleum Engineers, Industrial minerals and rocks, p. 889-895, 1960

MYERS, Paul Benton, Jr.

- 1-60 Geology of the Vermont portion of the Averill quadrangle [abs.] Dissert Abs, v 21, no 3, p 595-596, Sept 1960

MYERS, Richmond Elmore

- 1-60 A Pennsylvania state mineral Pennsylvania Acad. Sci. Proc., v. 34, p 140-146, 1960

MYERS, W Bradley

- 1-60. Structural deformation accompanying the earthquake of August 17, 1959, in southwest Montana [abs] Jour Geophys. Research, v. 65, no 8, p 2513, Aug 1960.

MYSLINSKI, Frank J See MONTGOMERY, Gill 1-60

## NACE

NACE, Raymond Lee

- 1-60. Contributions of geology to the problem of radioactive waste disposal, in Disposal of radioactive wastes, V 2 Internat Atomic Energy Agency, Sci. Conf. on Disposal of Radioactive Wastes, Monaco, Nov. 16-21, 1959, Proc., v 2, p 457-480, with English, French, Russian, and Spanish abs , 1960.

NACKOWSKI, Matthew Peter See PARRY, William T 1-60

NAFE, John Elliott. See also BRUNE, J N. 1-60, 2-60

- 1-60. (and BRUNE, James N.) Observations of phase velocity for Rayleigh waves in the period range 100-400 seconds [abs ] Geol Soc. America Bull , v. 71, no 12, pt. 2, p. 2070, Dec. 1960

NAGY, Bartholomew Stephen. See also DUFFY, J R. 1-60, HAMWAY, Paullette 1-60, SCOMILLIO, John 1-60

- 1-60 (and GAGNON, George C.) Geochemical investigations of Athabasca oil sands [Alberta] [abs.] Am. Assoc Petroleum Geologists Bull., v. 44, no 7, p 1253-1254, July 1960.  
2-60 Natural chromatography and the geochemistry of petroleum accumulation [abs ] Geol Soc America Bull , v. 71, no 12, pt 2, p 2107, Dec 1960

NAKAGAWA, Harry M See GRIFFITTS, Wallace Rush 3-60, THOMPSON, Charles E 1-60, WARD, Frederick Norville 1-60

NAKAHARA, Hiroshi. See BEVELANDER, Gerrit 1-60

NAKAI, Nobuyuki See JENSEN, Mead LeRoy 2-60

NAMOWITZ, Samuel N

- 1-60 (and STONE, Donald B ) Earth science--The world we live in 2d ed., Princeton, N J., D Van Nostrand Co , 614 p , illus., 1960, originally published 1953

NANCE, Richard Leon

- 1-60. Caddo oil field, Carter County, Oklahoma Shale Shaker, v 10, no 7, p 2-13 incl. index and sketch maps, sections, table, and discussion by E S. Rouget, Jr., Mar 1960.

NARAIN, Kedar See SMOOT, Thomas William 2-60

NARANS, Harry D., Jr See BERG, Joseph Wilbur, Jr 1-60, 2-60

NASH, W. A See CANADA GEOL SURVEY 45-60

NATIONAL RESEARCH COUNCIL, Committee on Stratigraphy, Permian Subcommittee See Permian Subcommittee of the National Research Council's Committee on Stratigraphy

NAVARE, Alfred Theodore, 1894-1962 See also HURST, Vernon J. 1-60

- 1-60 A mineralogical evaluation of the Cretaceous and Eocene formations of Crawford County, Georgia [abs.] Georgia Acad Sci Bull , v. 18, nos. 1-2, p 11-12, Apr. 1960

NAVARRO de HAYDON, Rosa

- 1-60 The Geology Club of Puerto Rico. Caribbean Geol Conf , 2d, Mayagüez, Puerto Rico, Jan 4-9, 1959, Trans., p. 150-152, 1960

NEALE, Ernest Richard Ward. See also CANADA GEOL SURVEY 45-60

- 1-60 (and KELLEY, Danford Greenfield) Stratigraphy and structure of Mississippian rocks of northern Cape Breton Island [Nova Scotia] Geol Assoc. Canada Proc., v 12, p 79-96, illus incl. geol. map, Dec 1960.

NEAVEL, Richard C.

- 1-60. (and GUENNEL, Gottfried Kurt) Indiana paper coal--Composition and deposition Jour. Sed Petrology, v 30, no 2, p 241-248 incl index and sketch maps, diagram, tables, and illus , June 1960

- 2-60 Reflectivity, chemical properties, and classification of coal constituents [abs] Geol Soc. America Bull, v 71, no 12, pt 2, p. 1935, Dec. 1960
- 3-60 (and MILLER, L V.) Properties of cutinite Fuel (London), v 39, no 3, p 217-222, illus., May 1960

## NEBRASKA UNIVERSITY, Conservation and Survey Division

- 1-60 Groundwater map of Nebraska Nebraska Univ Conserv and Survey Div, scale about 1 in to 16 mi, Nov 1960

## NEFF, Arthur William

- 1-60. Comparisons between the salt anticlines of South Persia and those of the Paradox Basin [Colorado Plateau], in Geology of the Paradox Basin fold and fault belt Four Corners Geol Soc, 3d Field Conf, 1960, [Guidebook] p 56-64, illus, 1960

## NEIL, Sarah T See STEVENS, Rollin Elbert 1-60, 2-60

## NEILL, J. C See WALTON, William Clarence 4-60

## NEILSON, James Maxwell

- 1-60. (and SNELGROVE, A K., and Van PELT, J R) Curricular and professional aspects of geological engineering Econ Geology, v 55, no 5, p. 1048-1059 incl diagram, Aug. 1960
- 2-60. Geomorphology and glacial geology of southwestern Baffin Island, District of Franklin, Northwest Territories, Canada Internat Geol Cong., 21st, Copenhagen, 1960, Rept, pt 21, p 90-104 incl sketch maps and illus, 1960.
- 3-60 The teaching and practice of engineering geology Canadian Mining and Metall Bull, v 53, no 584, p 965-969 incl tables, Dec 1960.

## NELSON, Bruce Warren See also SIEVER, Raymond 2-60

- 1-60 Authigenic muscovite and chlorite in the Maccrady formation [abs] Geol Soc America Bull., v 71, no 12, pt 2, p. 1935, Dec 1960
- 2-60. Recent sediment studies in 1960 Mineral Industries Jour, v. 7, no 4, p 1-4, illus, Dec 1960.
- 3-60 Clay mineralogy of the bottom sediments, Rappahannock River, Virginia, in Swineford, Ada, ed., Clays and clay minerals Natl Conf Clays and Clay Minerals, 7th, Washington, D C., Oct 1958, Proc, p 135-137, illus, 1960 (Issued as Internat Earth Science Ser Mon. 5 of Pergamon Press, New York.)

## NELSON, C M

- 1-60 (and CRAWFORD, J. H., Jr) Optical absorption in irradiated quartz and fused silica, in Symposium on defect structure of quartz and glassy silica Physics and Chemistry Solids, v 13, nos 3-4, p 296-305, illus, June 1960

## NELSON, Clemens Arvid

- 1-60 Stratigraphic range of *Ogygopsis* [abs] Geol Soc. America Bull, v. 71, no 12, pt. 2, p 2070-2071, Dec. 1960.

## NELSON, J L See PEARCE, Dennis Wiffen 1-60

## NELSON, Jerome S.

- 1-60. Serpentine delineation in North Coastal and other areas by mapping associated magnetic anomalies [abs.] California Assoc Eng Geologists, 3d Ann. Mtg., Berkeley, Oct 14-16, 1960, p 11-12 [1960]

## NELSON, Lloyd Alveno. See also McCracken, R. J 1-60, ROSWELL GEOL SOC 1-60

- 1-60. The Pennsylvanian rocks of the Franklin Mountains east of Vinton, Texas, in Northern Franklin Mountains, southern San Andres Mountains, with emphasis on Pennsylvanian stratigraphy Roswell Geol Soc, Field Trip, Nov. 1960, Guidebook, p 131-134 incl. table, 1960

## NELSON

- 2-60. (and KUNZE, George William, and GODFREY, Curtis L.) Chemical and mineralogical properties of San Saba clay [Texas], a grumusol Soil Sci., v. 89, no. 3, p 122-131 incl. sketch map, diagrams, and tables, Mar 1960.

### NELSON, Russell C

- 1-60. World tungsten-molybdenum reserves--A detailed look at present supplies Eng and Mining Jour., v. 161, no. 5, p. 93-97 incl. sketch map, May 1960.

### NELSON, Samuel James

- 1-60. Mississippian lithostrotionid zones of the southern Canadian Rocky Mountains [Alberta-British Columbia] Jour Paleontology, v. 34, no 1, p 107-126 incl. index map and sections, illus, Jan. 1960.

### NELSON, Vincent Edward See HAUSER, Robert Emanuel 1-60

### NELSON, Willis Howard. See LEWIS, Richard Quintin 1-60, POWERS, Howard Adorno 3-60

### NESS, Norman Frederick. See also MacDONALD, G. J F. 1-60

- 1-60. Resistivity interpretation in geophysical prospecting [abs] Massachusetts Inst. Technology Abs Theses 1958-59, p 174-175, 1960.

### NESTÉROFF, Wladimir D. See also HEEZEN, B. C 6-60

- 1-60 (and HEEZEN, Bruce Charles) Les dépôts de courants de turbidité, le flysch et leur signification tectonique Acad. Sci. Comptes Rendus (Paris), tome 250, no 22, p 3690-3692, May 30, 1960

### NETSCHERT, Bruce C See SCHURR, Sam H 1-60

### NETTLETON, Lewis Lomax

- 1-60. (and LaCOSTE, Lucien Jean Batiste, and HARRISON, John C) Tests of an airborne gravity meter Geophysics, v. 25, no 1, p 181-202 incl sketch maps, diagrams, and tables, Feb. 1960.

### NEUERBURG, George Joseph

- 1-60 (and GRANGER, Harry Clifford) A geochemical test of diabase as an ore source for the uranium deposits of the Dripping Spring district, Arizona Neues Jahrb. Mineralogie Abh. (Stuttgart, Germany), Band 94, Festband Ramdohr, 2 Hälfte, p. 759-797 incl diagrams, illus, and German abs., also index map and diagrams, July 1960.

### NEUMAN, Robert Ballin

- 1-60 Pre-Silurian stratigraphy in the Shin Pond and Stacyville quadrangles, Maine. Art. 74 in U S. Geol. Survey Prof. Paper 400-B, p B166-B168 incl. geol map, 1960  
2-60 (and WILSON, Robert Lake) Geology of the Blockhouse quadrangle, Tennessee U. S. Geol. Survey Geol Quad. Map GQ-131, scale 1 24,000 (1 in. to 2,000 ft.), with sections and text, 1960  
3-60. Geology of the Wildwood quadrangle, Tennessee U. S. Geol. Survey Geol. Quad Map GQ-130, scale 1 24,000 (1 in. to 2,000 ft ), with sections and text, 1960.  
4-60. The St. Paul group of Maryland, in Gates, Olcott, ed , Lower Paleozoic carbonate rocks in Maryland and Pennsylvania Johns Hopkins Univ. Studies Geology, no 18, Guidebook 3, p 16-18, 1960  
5-60 Sedimentation in the Ocoee series, Great Smoky Mountains [abs.] Washington Acad. Sci. Jour., v. 50, no. 7, p. 2, Nov. 1960

### NEUSCHEL, Virginia Smith See CLARKE, James Wood 1-60

### NEUSTADT, Walter, Jr.

- 1-60. Geology and the public library GeoTimes, v. 4, no. 7, p 24-25, Apr. 1960

NEW ENGLAND INTERCOLLEGIATE GEOLOGICAL CONFERENCE

- 1-60. (GRISCOM, Andrew, and MILTON, Daniel Jeremy, editors) Field trips in west-central Maine, 52d annual meeting, Rumford, Maine, October 8-9, 1960, guidebook [n.p.] 38 p incl. geol. and other sketch maps and table, 1960. Contains individual papers which are cited separately.

NEW MEXICO GEOLOGICAL SOCIETY

- 1-60 (BEAUMONT, Edward Campbell, and READ, Charles Brian, editors) Guidebook of Rio Chama Country, 11th field conference, October 14-16, 1960 129 p, illus. incl. geol. map, 1960 Includes individual papers which are cited separately.

NEW YORK STATE GEOLOGICAL ASSOCIATION

- 1-60 (by HAWLEY, David, and POTTER, Donald B.) Guidebook for field trips, 32d annual meeting, Hamilton College, Clinton, New York, May 13-14, 1960 [61] p, illus incl geol. map, 1960

NEWCOME, Roy, Jr

- 1-60. Ground-water resources of the Red River Valley alluvium in Louisiana Louisiana Geol Survey Water Resources Pamph 7, 21 p, illus, Apr. 1960

NEWELL, Charles Oliver

- 1-60. Eocene will be Oregon target. Oil and Gas Jour, v. 58, no 24, p 172-174 incl. index map and illus., June 13, 1960

NEWELL, Norman Dennis

- 1-60. Marine planation of tropical limestone islands Science, v 132, no. 3420, p 144-145, July 15, 1960.  
2-60. (and PURDY, Edward G, and IMBRIE, John) Bahamian oolitic sand Jour Geology, v. 68, no 5, p 481-497 incl sketch map, diagrams, and tables, illus., Sept. 1960  
3-60. The origin of oysters Internat Geol. Cong., 21st, Copenhagen, 1960, Rept., pt 22, p 81-86 incl. diagram, 1960  
4-60. Origin of the oysters [abs] Geol Soc America Bull., v 71, no. 12, pt 2, p. 1936, Dec 1960.

NEWKIRK, Herbert William. See also BRENDEN, B. B 1-60

- 1-60. (and BRENDEN, Byron B) A carbon arc image furnace and microscope for studies at high temperatures Am. Ceramic Soc Jour., v. 43, no. 3, p 146-150 incl. diagram, table, and illus, Mar. 1, 1960

NEWMAN, Thomas M. See CRESSMAN, Luther Sheeleigh 1-60

NEWMAN, Walter S.

- 1-60. (and FAIRBRIDGE, Rhodes Whitmore) Glacial lakes in Long Island Sound [abs] Geol Soc America Bull, v. 71, no 12, pt 2, p 1936, Dec. 1960  
2-60. (and FAIRBRIDGE, Rhodes Whitmore) Active subsidence in the New York area [abs] Geol. Soc. America Bull., v. 71, no 12, pt 2, p 2107-2108, Dec 1960.

NEWMAN, William L See MIESCH, Alfred Thomas 2-60

NEWNHAM, Robert Everest

- 1-60. A refinement of the dickite structure and some remarks on polymorphism in kaolin minerals [abs] Acta Cryst, v 13, pt 12, p 1004-1005, Dec 1960

NEWTON, John G

- 1-60. (and SUTCLIFFE, Horace, Jr, and LaMOREAUX, Philip Elmer) Geology and ground-water resources of Marengo County, Alabama [abs.] Alabama Acad Sci. Jour, v. 31, no 6, p 395-396, Oct 1960

NEWTON, Joseph

- 1-60. (and others) Study of two Idaho thorite deposits Idaho Bur Mines and Geology Pamph 122, 58 p., index, geol, and sketch maps, diagrams, and tables, Sept. 1960

## NEWTON

- 2-60. Clay--its composition, properties, and uses Idaho Bur Mines and Geology Inf Circ. 5, 35 p incl tables, diagrams, and illus., Mar. 1960.

### NEWTON, Robert

- 1-60. (and ROUND, George Frederick) Diffusion of helium through sedimentary rocks [abs.] Geol. Soc America Bull, v. 71, no 12, pt 2, p. 1937-1938, Dec 1960

### NEWTON, Vernon C., Jr

- 1-60. Oil and gas exploration in Oregon during 1959 Ore -Bin, v 22, no 1, p. 8-10 incl sketch map, diagrams, and tables, Jan 1960  
2-60. (compiler) Well records on file of oil and gas exploration in Oregon Oregon Dept Geology and Mineral Industries Misc. Paper 8, 9 p, tables, Nov. 1960

### NIBLETT, Edward Ronald

- 1-60 (and SAYN-WITTGENSTEIN, Catherine) Variation of electrical conductivity with depth by the magneto-telluric method Geophysics, v 25, no 5, p 998-1008 incl. diagrams, Oct. 1960.

### NICHOLLS, Geoffrey Dennis

- 1-60 Techniques in sedimentary geochemistry--[Pt.] 2, Determination of the ferrous iron contents of carbonaceous shales Jour. Sed. Petrology, v 30, no. 4, p 603-612 incl section, diagrams, and table, Dec 1960

### NICHOLS, Donald Raymond

- 1-60. Slump structures in Pleistocene lake sediments, Copper River Basin, Alaska Art 162 in U S. Geol Survey Prof Paper 400-B, p B353-B354 incl illus, 1960.  
2-60. (and YEHLE, Lynn Alois) Mud volcanoes in the Copper River basin, Alaska [abs.] Washington Acad. Sci. Jour, v. 50, no. 7, p. 9-10, Nov 1960

### NICHOLS, I L See DEAN, K. C. 1-60

### NICHOLS, Julius LaFayette See HARVEY, Edward Joseph 1-60, 2-60

### NICHOLS, Rachel H

- 1-60. (compiler) Bibliography of vertebrate paleontology and related subjects, 1958-59 Soc. Vertebrate Paleontology Bibliography, no. 14, 85 p, June 1960

### NICHOLSON, John Hirston

- 1-60. Geology of the Texas Panhandle, in Texas Univ. Bur. Econ Geology, Aspects of the geology of Texas--A symposium Texas Univ Pub. 6017, p 51-64, illus. incl geol map, Sept. 1, 1960

### NICKEL, Ernest Henry

- 1-60. (and others) Holmquistite from Barraute, Quebec Canadian Mineralogist, v 6, pt 4, p 504-512, 1960, reprinted in Canada Dept. Mines and Tech Surveys, Mines Br. Tech. Bull. TB-7, unpagged, illus. and tables, Oct. 1960.  
2-60. A zirconium-bearing garnet from Oka, Quebec Canadian Mineralogist, v. 6, pt 4, p 549-550, tables, 1960, reprinted in Canada Dept Mines and Tech Surveys, Mines Br Tech Bull. TB-7, unpagged, Oct 1960.  
3-60 The occurrence of native nickel-iron in the serpentine rock of the Eastern Townships of Quebec Province Canada Dept. Mines and Tech. Surveys Mines Br Research Rept R 57, p. 307-319, illus; Jan 13, 1960

### [NICKELL, Walter P.]

- 1-60. The geological formations, in The cave Cranbrook Inst Sci. News Letter, v. 29, no. 5, p 38-40, illus., Jan. 1960

### NICOL, A. W See ROY, Della Martin 1-60

### NIEF, G. See DANSGAARD, W 1-60

- NIELSEN, James Willard  
1-60. (and FOSTER, Frank Gordon) Unusual etch pits in quartz crystals  
Am. Mineralogist, v. 45, nos. 3-4, p. 299-310 incl diagrams and illus ,  
Mar -Apr 1960.
- NIER, Alfred Otto Carl. See also HOFFMAN, J H 1-60, SIGNER, P 1-60  
1-60. Cosmic-ray effects in meteorites Am. Geophys. Union Trans., v. 41,  
no 2, p. 289-291, June 1960.
- NIETZEL, Oscar A. See PETROW, Henry George 1-60
- NILE, Stephen Waters  
1-60 The Hebgen Lake [Montana] earthquakes, in West Yellowstone--  
Earthquake area Billings Geol. Soc , 11th Ann. Field Conf., Sept 1960,  
[Guidebook] p 24-30 incl. sketch maps, diagrams, and tables, 1960.
- NILES, William W. See STEVENS, Rollin Elbert 4-60
- NININGER, Robert D.  
1-60. (and EVERHART, Donald Lough, and ADLER, Hans H , and KRATCH-  
MAN, Jack) The genesis of uranium deposits Internat. Geol. Cong.,  
21st, Copenhagen, 1960, Rept., pt. 15, p 40-50, 1960
- NISHIDA, Yoshichika  
1-50. A new analysis of the deformation characteristics of soils Cong.  
Panam Mecánica Suelos y Cimentaciones, 1st, México, D. F , Sept. 7-12,  
1959, Mem , v. 1, p 85-95 incl. diagrams, 1960
- NITECKI, Matthew Henry  
1-60. A carbonate vein in limestone [Indiana] Jour Sed Petrology, v. 30,  
no. 4, p 624-625 incl table and illus., Dec. 1960
- NOBLE, Edwin A.  
1-60. Genesis of uranium belts of the Colorado Plateau. Internat. Geol.  
Cong., 21st, Copenhagen, 1960, Rept , pt. 15, p. 26-39 incl. sketch maps,  
sections, and table, 1960  
2-60. Waters of compaction as an ore-forming fluid [abs ] Geol. Soc.  
America Bull., v 71, no. 12, pt 2, p. 2038, Dec. 1960
- NOBLE, James Alexander See also TAYLOR, H. P , Jr. 1-60  
1-60. (and TAYLOR, Hugh Pettingill, Jr.) Correlation of the ultramafic  
complexes of southeastern Alaska with those of other parts of North  
America and the world Internat. Geol. Cong., 21st, Copenhagen, 1960,  
Rept., pt 13, p 188-197 incl sketch map, 1960
- NOBLE, John B.  
1-60. A preliminary report on the geology and ground-water resources of  
the Sequim-Dungeness area, Clallam County, Washington Washington State  
Div Water Resources Water Supply Bull. 11, 43 p incl. tables, also geol.  
map, ground-water map, and sections in pocket, 1960.
- NOBLES, Laurence Hewitt  
1-60. Study of movement across the margin of an ice cap [abs.] Geol. Soc.  
America Bull , v. 71, no 12, pt. 2, p. 1937, Dec. 1960.  
2-60. Glaciological investigations, Nunatarssuaq ice ramp, northwestern  
Greenland U S. Army, Corps of Engineers, Snow Ice and Permafrost Re-  
search Establishment Tech Rept 55, 57 p , illus , May 1960
- NOLAN, Thomas Brennan  
1-60. The place of geology in the development of the mining industry  
Mines Mag , v. 50, no 2, p. 20-22, 27, Feb 1960.
- NOMICOS, George N. See VANONI, Vito August 1-60, 2-60
- NORDYKE, Milo D. See SHELTON, A Vay 1-60

## NORFORD

NORFORD, B. Seeley

1-60 A well-preserved *Dinobolus* from the sandpile group (Middle Silurian) of northern British Columbia *Palaeontology* (London), v. 3, pt. 2, p. 242-244, Aug. 1960

WERFORD [NORFORD], B. Seeley. See RAASCH, Gilbert Oscar 1-60

NORMAN, Arthur Geoffrey. See RICH, Charles Irvin 1-60

NORMAN, Carl Edgar. See WEISS, Malcolm Pickett 1-60, 2-60, 3-60

NORRIS, A. R. See HEYDING, R. D. 1-60

NORRIS, A. W. See DOUGLAS, Robert John Wilson 3-60

NORRIS, Donald Kring See DOUGLAS, Robert John Wilson 1-60, 2-60

NORRIS, Robert Matheson

1-60. Facts or concepts--Which should be emphasized in introductory courses? [abs.] *Geol. Soc. America Bull.*, v. 71, no. 12, pt. 2, p. 1937, Dec. 1960.

2-60. (and WOODHOUSE, Charles Douglas) Minerals from the beach at Santa Barbara [California] *Gems and Minerals*, no. 279, p. 21, 54-55 incl. illus., Dec. 1960

NORTH DAKOTA GEOLOGICAL SOCIETY

1-60. Revised nomenclature for the Williston Basin [abs.] *Am. Assoc. Petroleum Geologists Rocky Mtn. Sec. Geol. Record* 1960, p. 163-164 [1960]

NORTH DAKOTA GEOLOGICAL SURVEY

1-60. Production statistics and engineering data--Oil in North Dakota, 2d half 1959 Grand Forks, 89 p., illus., Mar. 1960

2-60. [Summaries of North Dakota oil wells] *North Dakota Geol. Survey Circ.* 224-241, 1960.

NORTHERN MINER PRESS Limited

1-60. Canadian mines handbook 1960 *Canadian Mines Handb.* 1960, 312 p. incl. sketch maps and tables, July 1960

NORTHROP, John See BROWN, Maurice Vertner 1-60

NORTHUP, Richard C. See HERSHEY, Howard Garland 1-60

NORTON, James Jennings

1-60 Hugo pegmatite, Keystone, South Dakota Art. 32 in *U. S. Geol. Survey Prof. Paper* 400-B, p. B67-B70 incl. section, diagram, and tables, 1960.

2-60. (and REDDEN, Jack Allison) Structure associated with rock creep in the Black Hills, South Dakota *Geol. Soc. America Bull.*, v. 71, no. 7, p. 1109-1111 incl. diagram, illus., July 1960

NORTON, Matthew F.

1-60 Appalachian tectonics *Internat. Geol. Cong.*, 21st, Copenhagen, 1960, Rept., pt. 18, p. 69-80 incl. sketch maps, diagrams, and table, 1960.

NORTON, O. Richard

1-60. Hardware from heaven--The story of meteorites *Pacific Discovery*, v. 13, no. 6, p. 26-28 incl. illus., Nov.-Dec. 1960

NORVITCH, Ralph F.

1-60 Ground water in alluvial channel deposits, Nobles County, Minnesota *Minnesota Dept. Conserv., Div. Waters Bull.* 14, 23 p. incl. cross section and tables, ground-water map, Sept. 1960

NOSOW, Edmund. See also McFARLAN, A. C. 2-60, SUMMERSON, C. H. 1-60

1-60. Fossil Cincinnati trails explained by *Goniobasis* [abs.] *Geol. Soc. America Bull.*, v. 71, no. 12, pt. 2, p. 2022-2023, Dec. 1960



- 2-60 (and McFARLAN, Arthur Crane) [Guidebook] Geology of the central Bluegrass area [Kentucky] Geol Soc America Southeastern Sec Field Trip [no 1], Mar 26, 1960, 54 p incl geol and sketch maps, sections, and illus , 1960 (Published by Kentucky Geological Survey, Lexington)

## NOTTINGHAM, Marsh Whitney

- 1-60 Recent Bell Canyon exploration in the North Delaware basin [New Mexico] [abs] Oil and Gas Jour , v 58, no 40, p 146, Oct 3, 1960  
2-60 Recent Bell Canyon exploration in the North Delaware Basin [New Mexico-Texas], in Natural gas in the Southwest Southwestern Federation Geol Soc Trans , v 1, p 139-153 incl index and sketch maps, diagrams, and illus , 1960.

## NOTZ, K J

- 1-60 (and JAFFÉ, H H ) Correlation of TGA and DTA temperatures in decomposition reactions Am Ceramic Soc Jour , v 43, no 1, p 53-54, Jan 1, 1960

## NOYES, A P , Jr

- 1-60. (and YOUNG, Keith Preston) Geology of Purgatory Creek area, Hays and Comal Counties, Texas Texas Jour Sci , v 12, nos 1-2, p 64-104 incl index and geol sketch maps, sections, and illus , May 1960

NUFFIELD, Edward Wilfrid See PATCHETT, Joseph Edmund 1-60, FROHBURG, Max Hans 1-60

## NUTTLI, Otto William

- 1-60 A note concerning the sense of the first P motion for the Montana earthquake of August 18, 1959 Seismol Soc America Bull , v 50, no 2, p 211-215 incl diagrams, Apr 1960

## OAKES, David Thomas

- 1-60. Solids concentration effects in bentonite drilling fluids, in Swineford, Ada, ed., Clays and clay minerals, V. 8 Natl Conf. Clays and Clay Minerals, 8th, Norman, Okla., Oct. 1959, Proc., p. 252-273 incl. diagrams and tables, 1960. (Issued as Internat. Earth Science Ser. Mon. 9 of Pergamon Press, New York.)

## OAKESHOTT, Gordon Blaisdell

- 1-60 (and TOCHER, Don) Surface faulting in recent earthquakes, Western Cordillera [abs] Geol Soc America Bull , v 71, no 12, pt 2, p. 2038, Dec 1960.  
2-60 Geologic sketch of the Southern Coast Ranges California Div Mines Mineral Inf Service, v 13, no 1, p 1-13, illus , Jan 1960

OAKLEY, Kenneth Page See MONTAGU, Montague Francis Ashley 1-60

## OANA, Shinya

- 1-60 (and DEEVEY, Edward Smith, Jr ) Carbon 13 in lake waters, and its possible bearing on paleolimnology Am Jour Sci , v 258-A (Bradley Volume), p 253-272 incl diagram and tables, 1960

## OBERHANSLEY, Frank R

- 1-60 Crystal Cave in Sequoia National Park [California] Visalia, Calif , Commercial Printing Co , 28 p , illus , revised [1960]

## O'BOYLE, Charles C

- 1-60 Northwestern Colorado, Chap 16 in Mineral resources of Colorado, 1st sequel Denver, Colorado Mineral Resources Board, p 505, 593-623 incl index and geol sketch maps, 1960

OBRADOVICH, J D See EVERNDEN, Jack Foord 1-60

## OBREGÓN de la PARRA, Jorge

- 1-60. El contacto Cretácico-Terciario y el Paleoceno de la cuenca sedimentaria de Tampico-Misantla Internat Geol Cong , 21st, Copenhagen, 1960, Rept , pt 5, p 78-81 incl sketch map and chart, 1960

## O'BRIEN, Christian Arthur Edgar

- 1-60 The structural geology of the Boule and Bosche Ranges in the Canadian Rocky Mountains Geol Soc London Quart Jour , v 116, pt 4, p 409-436, illus , with discussion, Dec. 31, 1960

## O'BRIEN

- 2-60. The structural geology of the Boule and Bosche Ranges in the Canadian Rocky Mountains [summary] Geol. Soc London Proc 1959-60, no 1573, p 1-5, with discussion, Dec 15, 1959 [1960]

O'BRIEN, Joseph K See HANDIN, John Walter 2-60

OCHOTERENA F., Héctor

- 1-60 Variación intraespecífica en Parathyridina mexicana n sp, Terebratulidos del Oxfordiano de México México Univ Nac Inst Geología Paleontología Mexicana, no. 9, 40 p incl index map and diagrams, illus., 1960

O'CONNOR, Howard Grant

- 1-60 Geology and ground-water resources of Douglas County, Kansas Kansas State Geol Survey Bull 148, 200 p, illus incl. geol map, Dec. 1960.

ODA, Uteana See GRIFFITTS, Wallace Rush 2-60

ODÉ, Helmer

- 1-60. Faulting as a velocity discontinuity in plastic deformation, Chap. 11 in Griggs, D T, ed, Rock deformation--A symposium Geol. Soc. America Mem. 79, p 293-321, illus, 1960

ODE, William Harlan

- 1-60. (and GIBSON, F Harold) International system for classifying brown coals and lignites and its application to American coals U S Bur Mines Rept Inv 5695, 20 p incl. diagrams and tables, 1960

ODEKIRK, Jerry R See WHELAN, James Arthur 1-60

ODELL, James W. See SNYDER, Frank G. 1-60

ODELL, Noel Ewart

- 1-60 The building of mountains Am. Alpine Jour, v 12, no. 1, p 87-94, 1960

O'DONNELL, Hugh John See ERGUN, Sabri 1-60

ODGEN, J. Gordon, 3d

- 1-60. Recurrence surfaces and pollen stratigraphy of a postglacial raised bog, Kings County, Nova Scotia Am Jour Sci, v 258, no 5, p 341-353 incl. sketch map, diagram, table, and illus, May 1960.

OGLE, Burdette Adrian

- 1-60 The Eel River Basin [California], in California--A traverse of the Klamath uplift, northern Coast Ranges and Eel River Basin Geol. Soc Sacramento, Ann. Field Trip, June 1960, [Guidebook] p 32-33, columnar section, 1960.

O'HAIRE, Robert T See MOORE, Richard Thomas 1-60, WILSON, Eldred Dewey 2-60, 3-60

OHM, John M See VAUGHN, William Wendall 1-60

OIL and GAS JOURNAL

- 1-60. Higher standards for geologists urged Oil and Gas Jour, v. 58, no 8, p 68-69, Feb 22, 1960  
2-60. "Montage" technique makes for quick decisions in evaluating a drillable prospect Oil and Gas Jour., v 58, no. 17, p 127-135 incl sketch maps, sections, and illus., Apr. 25, 1960  
3-60. Formation correlator of the United States Oil and Gas Jour, v. 58, no 17, 1 sheet, supp. chart incl index map, Apr. 25, 1960  
4-60 Today's active oil fronts Oil and Gas Jour, v 58, no. 17, p. 148-197 [14 pages of ads] incl. index and sketch maps, sections, logs, tables, and illus., Apr. 25, 1960

- 5-60. Pemex plans careful drilling program for Northeast Mexico Oil and Gas Jour., v. 58, no 22, p 134-136 incl. sketch map and chart, May 30, 1960
- 6-60. Mexican drills slated for action along Gulf coastal area Oil and Gas Jour., v. 58, no. 25, p 174-176 incl. sketch map, June 20, 1960
- 7-60. Oil hunters get busy throughout Alaska Oil and Gas Jour., v. 58, no. no 28, p 147-148, 150 incl. index map, columnar section, and illus., July 11, 1960.
- OJA, R. V See also KRANCK, E H 1-60
- 1-60 The porphyry-greenstone area of the Preston East Dome Mines, Limited [Ontario] [abs.] Canadian Mining Jour., v. 81, no 6, p. 169, June 1960.
- OKE, William C. See KAMB, Walter Barclay 1-60
- O'KEEFE, John Aloysius See also HOCHMAN, Jack 1-60
- 1-60. Tektites and the cyrrilid shower [abs.] Geol Soc America Bull., v 71, no 12, pt 2, p 2108-2109, Dec 1960
- 2-60. (and SHUTE, Barbara) Theory of the distribution of tektites [abs.] Geol. Soc America Bull., v. 71, no. 12, pt. 2, p 2109, Dec 1960
- OKLAHOMA GEOLOGICAL SOCIETY See KANS. GEOL. SOC. 1-60
- OKULITCH, Vladimir Joseph
- 1-60 The Lower Cambrian fauna, in Evolution, its science and doctrine Royal Soc Canada "Studia Varia" Ser 4, p. 12-21, 1960
- OLCOTT, Gordon West
- 1-60. Preparation and use of a gelatin mounting medium for repeated oil immersion of minerals Am. Mineralogist, v. 45, nos 9-10, p 1099-1101, Sept -Oct. 1960
- OLDALE, Harry R. See WRIGHT, J D. 1-60
- OLEHY, D A See SCHMITT, R A. 1-60
- OLEKSYSHYN, John
- 1-60 Some new species of Miocene Mollusca from Maryland and Virginia Pennsylvania Acad Sci Proc, v. 34, p. 101-106, illus., 1960
- OLHOVICH, Vladimir A
- 1-60. Determinación de la superficie del contacto de una capa de alta velocidad alrededor de un pozo profundo Asoc Mexicana Geofísicos Explor Bol, v. 1, no 1, p 65-67, illus., Jan -Mar 1960.
- OLIPHANT, E. M. See STAPLIN, Frank Lyons 2-60
- OLIVER, Howard William
- 1-60 Gravity anomalies at Mount Whitney, California Art 146 in U. S. Geol. Survey Prof Paper 400-B, p. B313-B315 incl. diagram and table, 1960
- OLIVER, Jack Ertle See also BRUNE, J. N. 1-60, 2-60, DORMAN, H. J 2-60, POMEROY, P. W 1-60, SUTTON, G. H. 3-60
- 1-60 (and POMEROY, Paul W, and EWING, William Maurice) Long-period seismic waves from nuclear explosions in various environments Science, v. 131, no 3416, p 1804-1805, June 17, 1960
- 2-60 Some observations of long-period seismic waves [abs] Geol. Soc. America Bull., v. 71, no. 12, pt 2, p. 2071, Dec. 1960
- 3-60. (and MAJOR, Maurice W.) Leaking modes and the PL phase Seismol Soc. America Bull., v. 50, no 2, p. 165-180 incl. diagrams and table, Apr. 1960
- OLIVER, Thomas Albert
- 1-60. The Viking-Cadotte relationship [Alberta] Edmonton Geol Soc Quart., v. 4, no 1, p 1-3, 6-8, illus., Mar 1960, reprinted, Alberta Soc Petroleum Geologists Jour., v 8, no 9, p 247-253, illus., Sept 1960

## OLIVER

OLIVER, William Albert, Jr

- 1-60. Coral faunas in the Onondaga limestone of New York Art 77 in U. S. Geol. Survey Prof. Paper 400-B, p. B172-B174 incl. correlation chart, 1960.
- 2-60 Rugose corals from reef limestones in the Lower Devonian of New York Jour. Paleontology, v 34, no 1, p 59-100 incl index map, diagrams, tables, and illus, Jan. 1960
- 3-60. Inter- and intracolony variation in *Acinophyllum* [abs] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p 1937-1938, Dec 1960.
- 4-60 Devonian rugose corals from northern Maine U. S. Geol Survey Bull 1111-A, p. 1-23, illus, 1960
- 5-60 (and QUINN, Alonzo Wallace) Geology of the Narragansett basin, Rhode Island and Massachusetts Washington Acad. Sci Jour., v 50, no. 7, p 6-8, Nov 1960

OLLERENSHAW, N. C.

- 1-60. (and MACQUEEN, R. W.) Ordovician and Silurian of the Lake Timiskaming area [Ontario-Quebec] Geol. Assoc. Canada Proc, v. 12, p. 105-115, illus incl geol map, Dec 1960

OLMSTED, Franklin Howard See THOMASSON, Horace Gordon, Jr. 1-60

OLSEN, Stanley John

- 1-60. Age and faunal relationship of *Tapiravus* remains from Florida Jour. Paleontology, v 34, no. 1, p 164-167 incl table, and illus, Jan. 1960.
- 2-60. Post cranial skeleton, Pt. 2 of The fossil carnivore *Amphicyon longiramus* from the Thomas Farm Miocene Harvard Coll Mus Comp. Zoology Bull., v. 123, no 1, p 1-45, illus, July 1960
- 3-60. Some challenges of free diving prospecting and collecting Natl. Speleol. Soc Bull, v 22, pt 2, p 119-121, illus, July 1960
- 4-60 Additional remains of Florida's Pleistocene vampire Jour Mammalogy, v 41, no 4, p. 458-462 incl illus, Nov 1960

OLSON, Edwin A See also BROECKER, W S. 3-60

- 1-60. Contamination studies in radiocarbon dating [abs] Geol Soc. America Bull., v. 71, no. 12, pt 2, p 1938, Dec 1960

OLSON, Everett Claire

- 1-60. A trilophosaurid reptile from the Kootenai formation (Lower Cretaceous) [Montana] Jour Paleontology, v. 34, no 3, p 551-555 incl. diagrams, table, and illus., May 1960
- 2-60 (and MILLER, Robert Lee) Morphological integration Chicago, Ill, Univ Chicago Press, 317 p., illus, 1958, discussion by W. J. Bock, Evolution, v. 14, no 1, p 130-132, Mar. 1960
- 3-60. Morphology, paleontology, and evolution, in Tax, S, ed., Evolution after Darwin, V 1 Chicago, Ill, Univ. Chicago Press, p 523-545, 1960

OLSON, Jerry Chipman

- 1-60. (and HNRICHS, Edgar Neal) Beryl-bearing pegmatites in the Ruby Mountains and other areas in Nevada and northwestern Arizona U. S. Geol Survey Bull. 1082-D, p 135-200 incl index and sketch maps, diagram, and tables, also geol map and sections and illus, 1960

OLSSON, Richard Keith

- 1-60. Foraminifera of latest Cretaceous and earliest Tertiary age in the New Jersey Coastal Plain Jour Paleontology, v 34, no 1, p. 1-58 incl. sketch map and chart, illus, Jan. 1960.

O'NEIL, Robert L. See BATES, Thomas Fulcher 1-60

ONTARIO DEPARTMENT of MINES

- 1-60. List of publications (revised to April, 1960) Ontario Dept. Mines Bull 25, 9th ed., 71 p, illus incl. geol. map, 1960
- 2-60. Ontario--An expanding mining empire in 1959 Ontario Dept. Mines Rept [Rev] 1959, 139 p. incl sketch maps, diagrams, tables, and illus., 1960

ONTARIO FUEL BOARD

- 1-60. Logs of wells, 1959 Ontario Fuel Board, 6th Ann Rept. 1959, p 22-98, 1960

OPDYKE, Neil D.

- 1-60. (and RUNCORN, Stanley Keith) Wind direction in the western United States in the late Paleozoic Geol Soc America Bull, v. 71, no 7, p. 959-971 incl diagrams and tables, illus., July 1960

OPIK, Ernst Julius

- 1-60. The time scale of our universe, in Smithsonian treasury of science, V 1, True, W. P., ed. New York, N Y, Simon and Schuster, Inc, p. 23-54, slightly revised, 1960, originally published 1954

ORE -BIN

- 1-60. Index to published geologic mapping in Oregon Ore.-Bin, v. 22, no 6, p 53-61 incl. index maps, June 1960  
2-60. Active mines and mills in Oregon in 1960 Ore.-Bin, v. 22, no. 9, p 85-88, Sept 1960.

OREGON DEPARTMENT of GEOLOGY and MINERAL INDUSTRIES

- 1-60 12th biennial report, 1958-1960 Oregon Dept Geology and Mineral Industries Bull. 51, 13 p., illus., 1960  
2-60. Oil and gas map of Oregon Portland, Oreg., 3 sheets, scale 1 380,000 (about 1 in. to 6 mi.), [1960?]

OREGON STATE WATER RESOURCES BOARD

- 1-60. Grande Ronde River Basin Salem, Oreg, 208 p incl. illus, Sept. 1960.

O'REILLY, John

- 1-60. Yellowstone quake [Mont] Nat History, v 69, no. 1, p 24-32 incl. illus, Jan 1960

ORIEL, Steven S

- 1-60. (and CRAIG, Lawrence Carey) Lower Mesozoic rocks in Colorado, in Rocky Mtn. Assoc. Geologists, Guide to the geology of Colorado Denver, p. 43-58 incl sketch maps, correlation chart, and diagram, 1960

ORMSBY, Walter Clayton See also WEYL, W A 1-60

- 1-60. (and SHARTSIS, Jack Morris) Clay mineral content of two domestic kaolins Am. Ceramic Soc. Jour., v. 43, no 6, p 335 incl table, June 1, 1960.  
2-60 (and SHARTSIS, Jack Morris) Surface area and exchange capacity relation in a Florida kaolinite Am Ceramic Soc Jour, v 43, no 1, p 44-47 incl. diagram and tables, Jan. 1, 1960.  
3-60 (and SHARTSIS, Jack Morris, and WOODSIDE, K H.) Exchange behavior of kaolins of variable crystallinity [abs.] Am Ceramic Soc Bull., v. 39, no 4, p. 241, Apr. 1960

ORÓ, John

- 1-60 Possible geochemical synthesis of purines on the primitive earth [abs.] Geol Soc. America Bull, v 71, no. 12, pt 2, p 1939, Dec 1960.

OROS, Margaret O.

- 1-60 Virginia Harriett Kline (1910-1959) Am. Assoc Petroleum Geologists Bull, v 44, no. 1, p 113-114 incl portrait, Jan. 1960

OROWAN, E.

- 1-60. Mechanism of seismic faulting, Chap 12 in Griggs, D. T, ed., Rock deformation--A symposium Geol. Soc. America Mem 79, p 323-345, illus, 1960.

ORR, Allen A See CABBELL, Thomas R. 1-60

# ORR

ORR, Phil Cummings. See also BROECKER, W. S. 3-60

- 1-60. Late Pleistocene marine terraces on Santa Rosa Island, California Geol. Soc. America Bull., v. 71, no. 7, p. 1113-1119 incl. geol. sketch map, diagrams, and table, illus., July 1960.

ORR, R. D.

- 1-60. The Upper Devonian Jasper basin [Alberta], in Rock Lake Edmonton Geol. Soc., 2d Ann. Field Trip, Aug. 1960, Guidebook, p. 19-23, illus., 1960

ORVILLE, Philip M

- 1-60. Petrology of several pegmatites in the Keystone district, Black Hills, South Dakota Geol. Soc. America Bull., v. 71, no. 10, p. 1467-1489 incl. geol. sketch maps, diagrams, and tables, illus., Oct. 1960
- 2-60. Powder X-ray method for determination of (Ab+An) content of microcline [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1939-1940, Dec. 1960

OSBORN, Elburt Franklin See also GLASSER, F. P. 1-60, ROEDER, P. L. 1-60

- 1-60. (and ROEDER, P. L.) Effect of oxygen pressure on crystallization in simplified basalt systems Internat. Geol. Cong., 21st, Copenhagen, 1960, Rept., pt. 13, p. 147-155 incl. diagrams and table, 1960.

OSBORNE, Freleigh Fitz

- 1-60. Géologie de la région des Apalaches dans la Province de Québec--progrès et problèmes [abs.] Assoc. Canadienne-Française Av. Sci. Annales, v. 26, p. 111-112, 1960.
- 2-60. On turbidites Royal Soc. Canada Trans., 3d ser., v. 54, sec. 4, p. 1-9, June 1960
- 3-60 (and CLARK, Thomas Henry) New Glasgow-Saint-Lin area, electoral districts of Montcalm, Terrebonne and L'Assomption Quebec Dept. Mines Geol. Surveys Br. Geol. Rept. 91, 41 p., 1960, also French ed.

OSGOOD, Richard Grosvenor, Jr

- 1-60. (and FISCHER, Alfred George) Structure and preservation of Mastopora pyriformis, an Ordovician dasycladacean alga Jour. Paleontology, v. 34, no. 5, p. 896-902 incl. diagrams, illus., Sept. 1960

OSMOND, John Chambers, Jr.

- 1-60. Tectonic history of the Basin and Range Province in Utah and Nevada Mining Eng., v. 12, no. 3, p. 251-265 incl. sketch maps, sections, and diagrams, Mar. 1960.

OSMOND, John Kenneth. See ADAMS, John Allan Stewart 4-60

OSPOVAT, Alexander Meier

- 1-60. Abraham Gottlob Werner and his influence on mineralogy and geology [abs.] Dissert. Abs., v. 21, no. 3, p. 600-601, Sept. 1960

OSTENSO, Ned A. See WOOLLARD, George Prior 1-60

OSTERWALD, Frank William

- 1-60. (and BRODSKY, Harold) Tentative correlation between coal bumps and orientation of mine workings in the Sunnyside No. 1 mine, Utah Art. 64 in U. S. Geol. Survey Prof. Paper 400-B, p. B144-B146 incl. sketch map and diagrams, 1960.

OSTROM, Meredith Eggers

- 1-60. An interlayer mixture of three clay mineral types from Hector, California Am. Mineralogist, v. 45, nos. 7-8, p. 886-889 incl. diagrams, July-Aug. 1960.

O'SULLIVAN, John Blandford See also CARSON, C. E. 2-60, COULTER, Henry Welty 1-60

- 1-60. (and HUSSEY, Keith Morgan) Noneolian origin for silts of the Arctic Slope, Alaska [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1940, Dec. 1960.

OTTE, Carel, Jr See SLACK, Howard Addison 1-60, 2-60

OTTE, Mary E See THOMSON, Robert D 1-60

OUTERBRIDGE, William F. See also PESELNICK, Louis 1-60

1-60 (and STAATZ, Mortimer Hay, and MEYROWITZ, Robert, and POMMER, Alfred Michael) Weeksite, a new uranium silicate from the Thomas Range, Juab County, Utah *Am Mineralogist*, v 45, nos 1-2, p 39-52 incl. tables and illus, Jan.-Feb 1960

OUTLAW, Donald E See TURNER, Samuel Foster 1-60

OVERSTREET, Elizabeth Fischer. See OVERSTREET, William Courtney 5-60

OVERSTREET, Roy See TABIKH, A A 1-60

OVERSTREET, William Courtney. See also BELL, Henry, 3d 2-60

1-60. Metamorphic grade and the abundance of ThO<sub>2</sub> in monazite Art. 27 in U. S. Geol Survey Prof Paper 400-B, p B55-B57 incl. table, 1960.

2-60. (and BELL, Henry, 3d) Geologic relations inferred from the provisional geologic map of the crystalline rocks of South Carolina Art 87 in U. S. Geol. Survey Prof. Paper 400-B, p. B197-B199 incl. geol. sketch and index map, 1960.

3-60. (and THEOBALD, Paul Kellogg, Jr., and WHITLOW, Jesse William) Thorium and uranium resources in monazite placers of the western Piedmont, North and South Carolina *Am Inst Mining, Metall, and Petroleum Engineers Trans* 1959, v. 214, p 709-714 incl sketch map and tables, 1960

4-60 (and BELL, Henry, 3d) Notes on the Kings Mountain belt in Laurens County, South Carolina. South Carolina State Devel Board Div. Geology Geol. Notes, v. 4, no 4, p. 27-30 illus, July-Aug 1960

5-60. (and OVERSTREET, Elizabeth Fischer, and BELL, Henry, 3d) Pseudomorphs of kyanite near Winnsboro, Fairfield County, South Carolina South Carolina State Devel Board Div. Geology Geol Notes, v 4, no 5, p 35-39, Sept -Oct. 1960

6-60. (and BELL, Henry, 3d) Geochemical and heavy-mineral reconnaissance of the Concord SE quadrangle, Cabarrus County, North Carolina. U. S. Geol. Survey Mineral Inv Field Studies Map MF-235, scale 1 24,000 (1 in. to 2,000 ft.), with text, 1960

OWEN, Vaux, Jr., 1927-1961. See also CALLAHAN, J. T. 1-60

1-60. Geology and ground-water resources of Lee and Sumter Counties, southwest Georgia [abs.] *Georgia Acad. Sci Bull.*, v 18, nos. 1-2, p. 10-11, Apr. 1960

OWENS, Harold William

1-60. Florida-Bahama platform [abs.] *Am. Assoc Petroleum Geologists Bull.*, v. 44, no. 9, p. 1602, Sept 1960

2-60 Florida-Bahama platform [abs.] *Am Assoc Petroleum Geologists Bull.*, v. 44, no. 7, p. 1254, July 1960

3-60 Florida-Bahama platform [abs.] *Gulf Coast Assoc Geol Socs. Trans.*, v. 10, p. 86, 1960

OWENS, James Patrick. See also MINARD, J P. 1-60

1-60. (and ALTSCHULER, Zalman Samuel, and BERMAN, Robert Morris) Millsite in phosphorite from Homeland, Florida *Am. Mineralogist*, v 45, nos. 5-6, p 547-561 incl diagrams, tables, and illus., May-June 1960.

2-60. (and MINARD, James Pierson, and WIESNET, Donald Richard) Concentrations of "ilmenite" in the Miocene and post-Miocene formations near Trenton, New Jersey. Art. 28 in U. S. Geol Survey Prof Paper 400-B, p. B57-B59 incl. index map and tables, 1960

3-60. (and MINARD, James Pierson) Some characteristics of glauconite from the coastal plain formations of New Jersey Art 196 in U. S Geol. Survey Prof. Paper 400-B, p B430-B432 incl tables, 1960

## OWENS

- 4-60 (and MINARD, James Pierson) The geology of the north-central part of the New Jersey coastal plain Johns Hopkins Univ. Studies Geology, no 18, Guidebook 1, 45 p. incl. geol. sketch maps and charts, 1960 (1960 annual convention, American Association of Petroleum Geologists and Society of Economic Paleontologists and Mineralogists.)

## OWER, John R.

- 1-60. The Edmonton formation Alberta Soc. Petroleum Geologists Jour , v 8, no. 11, p 309-323 incl. sections and table, Nov 1960, reprinted from Edmonton Geol. Soc. Quart., v. 2, no 1, p 3-11, Mar 1958

## OZARK MOUNTAIN GEM and MINERAL SOCIETY

- 1-60. (Pyeatt, Bob, and TURNER, Helmer, chairmen) Field trip guide [Missouri, Arkansas, Oklahoma, Wyoming] 1959-60 Springfield, Mo., [75] p., illus., 1960.

## PABST, Adolf. See also DAVIS, G A 1-60

- 1-60 Notes on the correlation of density and composition in mix crystals [abs.] Geol. Soc. America Bull., v. 71, no 12, pt. 2, p 1940-1941, Dec. 1960.  
2-60. (and STINSON, Melvin C.) Brannerite with gold from Plumas County, California [abs.] Geol. Soc. America Bull , v 71, no 12, pt 2, p 2071-2072, Dec 1960.

## PACKARD, Earl Leroy

- 1-60 Hypotypes of Phylloceras onoense Stanton [California] Jour Paleontology, v 34, no. 3, p 421-428 incl. diagrams, illus , May 1960.

## PACKHAM, G H.

- 1-60 (and CROOK, Keith A W ) The principle of diagenetic facies and some of its implications Jour Geology, v 68, no 4, p 392-407 incl diagrams and tables, July 1960

## PADGHAM, W A

- 1-60. The Otter Lake Area (East Half), in Cheesman, R. L , Summary report of geological surveys conducted in the Precambrian area of Saskatchewan, 1960 Regina, Saskatchewan Dept Mineral Resources, Mines Br , Geology Div , p. 6-7 [1960]  
2-60. The geology of the Otter Lake area (west half), Saskatchewan Saskatchewan Dept. Mineral Resources Rept 41, 34 p incl tables and illus , index and geol. maps, 1960

## PAGE, Lincoln Ridler

- 1-60. The source of uranium in ore deposits Internat Geol. Cong , 21st, Copenhagen, 1960, Rept., pt 15, p. 149-164, 1960

## PAGE, Thornton Leigh

- 1-60. The origin of the earth, in Smithsonian treasury of science, V. 1, True, W. P., ed New York, N Y , Simon and Schuster, Inc , p. 55-78, illus., revised 1960, originally published 1948

## PAGE, Virginia M.

- 1-60. How to identify fossil wood--Pt. 2, The structure of wood Gems and Minerals, no 271, p 24-31 incl. illus., Apr 1960  
2-60. How to identify fossil wood--Pt 3, Identification with a hand lens Gems and Minerals, no. 272, p 23-27 incl. illus., May 1960.  
3-60. How to identify fossil wood--Pt 4, Identification with a microscope Gems and Minerals, no. 273, p 29-32 incl. illus , June 1960, additional illus , no. 274, p 23-28, July 1960, and no. 275, p 23-27, Aug. 1960.  
4-60. How to identify fossil wood [Pt 1] Gems and Minerals, no. 270, p. 18-23 incl. illus , Mar. 1960

## PAGES of HISTORY

- 1-60. Diving and digging for gold Sausalito, Calif , 23 p , illus., 1960.



PAIN, S. A.

- 1-60 Three miles of gold--The story of Kirkland Lake [Ontario] Toronto, Ontario, Ryerson Press, 109 p., sketch maps, 1960

PAKISER, Louis Charles, Jr. See also MABEY, D. R. 2-60

- 1-60 Volcanism in eastern California--A proposed eruption mechanism Art 189 in U. S. Geol. Survey Prof. Paper 400-B, p. B411-B414 incl. tectonic and gravity maps and diagrams, 1960  
2-60. Transcurrent faulting and volcanism in Owens Valley, California Geol. Soc. America Bull., v. 71, no. 2, p. 153-159 incl. geol. map and diagram, Feb. 1960.  
3-60. (and PRESS, Frank, and KANE, Martin Francis) Geophysical investigation of Mono Basin, California Geol. Soc. America Bull., v. 71, no. 4, p. 415-447 incl. index map, profiles, sections, and tables, geol. and gravity map, Apr. 1960  
4-60. Gravity in volcanic areas, California and Idaho [abs.] Jour. Geophys. Research, v. 65, no. 8, p. 2515, Aug. 1960

PALACAS, James George

- 1-60 Geochemistry of carbohydrates [abs.] Dissert. Abs., v. 20, no. 10, p. 4079 incl. table, Apr. 1960.  
2-60 (and SWAIN, Frederick Morrill) Presence of carbohydrates and other organic compounds in ancient sedimentary rocks Nature (London), v. 185, no. 4708, p. 234, illus., Jan. 23, 1960.

PALACHE, Charles, 1869-1954

- 1-60. A comparison of the ore deposits of Langban, Sweden, with those of Franklin, New Jersey Notes, Minerals Franklin and Sterling Hill, New Jersey, v. 1, no. 4, p. 67-70, table, July 1960

PALADINO, Albert E., Jr.

- 1-60 Phase equilibria in the ferrite region of the system  $\text{FeO-MgO-Fe}_2\text{O}_3$  Am. Ceramic Soc. Jour., v. 43, no. 4, p. 183-191 incl. diagrams and tables, Apr. 1, 1960.

PALLISTER, Alfred Ernest

- 1-60. Continuous seismic profiler--A new Far North exploration tool Oil and Gas Jour., v. 58, no. 33, p. 132, 135 incl. sketch map and illus., Aug. 15, 1960.  
2-60. Continuous seismic profilings--New methods utilizing a gas explosion sound source [abs.] Canadian Oil and Gas Industries, v. 13, no. 4, p. 108, Apr. 1960.  
3-60. The preparation of seismic depth maps in oil exploration Alberta Soc. Petroleum Geologists Jour., v. 8, no. 9, p. 235-246 incl. sketch maps and diagrams, Sept. 1960.

PALLISTER, Hugh Davidson, 1883-1961. See also BURCHARD, E. F. 1-60

- 1-60. The economic geologist in industry [abs.] Alabama Acad. Sci. Jour., v. 31, no. 6, p. 396, Oct. 1960.

PALMER, Allison Ralph See also ROSS, R. J., Jr. 1-60

- 1-60. Miocene copepods from the Mojave Desert, California Jour. Paleontology, v. 34, no. 3, p. 447-452, illus., May 1960.  
2-60. Identification of the Dunderberg shale of Late Cambrian age in the eastern Great Basin Art 132 in U. S. Geol. Survey Prof. Paper 400-B, p. B289-B290 incl. sections, 1960.  
3-60. Stratigraphic range and significance of the Cambrian agnostid genus Glyptagnostus [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1941, Dec. 1960.  
4-60. Trilobites of the Upper Cambrian Dunderberg shale, Eureka district, Nevada U. S. Geol. Survey Prof. Paper 334-C, p. 53-109, illus., 1960.  
5-60. Some aspects of the early Upper Cambrian stratigraphy of White Pine County, Nevada and vicinity, in Geology of east central Nevada Intermountain Assoc. Petroleum Geologists, 11th Ann. Field Conf., 1960 Guidebook, p. 53-58 incl. index and sketch maps, correlation chart, and fence diagram, 1960.

PALMER

6-60 Early late Cambrian stratigraphy of the United States [abs.] Washington Acad. Sci. Jour., v. 50, no. 7, p. 8-9, Nov 1960

PALMER, Katherine Van Winkle

1-60 Memorial to Burnett Smith (1877-1958) Geol. Soc. America Proc. 1959, p. 151-155, portrait, Oct 1960.

PALMORE, Robert D

1-60 Resistivity measurements as an aid to highway geology [abs] Alabama Acad. Sci. Jour., v. 31, no. 6, p. 399, Oct 1960

PALMQUIST, Wilbur Nathaniel, Jr See also HALL, F. R. 1-60-15-60

1-60. (and HALL, Francis Ramey) Geologic map of Bullitt, Jefferson, and Oldham Counties, Kentucky (county group 22) U. S. Geol. Survey Hydrol. Inv. Atlas HA-22, sheet 1, scale 1:125,000 (about 1 in. to 2 mi.), 1960

2-60 (and HALL, Francis Ramey) Availability of ground water in Bullitt, Jefferson, and Oldham Counties, Kentucky (county group 22) U. S. Geol. Survey Hydrol. Inv. Atlas HA-22, sheet 2, map, scale 1:125,000 (about 1 in. to 2 mi.), 1960

3-60. (and HALL, Francis Ramey) Generalized columnar section and water-bearing character of the rocks in Bullitt, Jefferson, and Oldham Counties, Kentucky (county group 22) U. S. Geol. Survey Hydrol. Inv. Atlas HA-22, sheet 3, 1960.

4-60. (and HALL, Frances Ramey) Geologic map of Boone, Campbell, Grant, Kenton, and Pendleton Counties, Kentucky (county group 15) U. S. Geol. Survey Hydrol. Inv. Atlas HA-15, sheet 1, scale 1:125,000 (about 1 in. to 2 mi.), 1960

5-60. (and HALL, Frances Ramey) Availability of ground water in Boone, Campbell, Grant, Kenton, and Pendleton Counties, Kentucky (county group 15) U. S. Geol. Survey Hydrol. Inv. Atlas HA-15, sheet 2, map, scale 1:125,000 (about 1 in. to 2 mi.), 1960

6-60. (and HALL, Frances Ramey) Generalized columnar section and water-bearing character of the rocks in Boone, Campbell, Grant, Kenton, and Pendleton Counties, Kentucky (county group 15) U. S. Geol. Survey Hydrol. Inv. Atlas HA-15, sheet 3, 1960

7-60. (and HALL, Frances Ramey) Geologic map of Bracken, Harrison, Mason, Nicholas, and Robertson Counties, Kentucky (county group 16) U. S. Geol. Survey Hydrol. Inv. Atlas HA-16, sheet 1, scale 1:125,000 (about 1 in. to 2 mi.), 1960

8-60 (and HALL, Frances Ramey) Availability of ground water in Bracken, Harrison, Mason, Nicholas, and Robertson Counties, Kentucky (county group 16) U. S. Geol. Survey Hydrol. Inv. Atlas HA-16, sheet 2, map, scale 1:125,000 (about 1 in. to 2 mi.), 1960

9-60. (and HALL, Frances Ramey) Generalized columnar section and water-bearing character of the rock in Bracken, Harrison, Mason, Nicholas, and Robertson Counties, Kentucky (county group 16) U. S. Geol. Survey Hydrol. Inv. Atlas HA-16, sheet 3, 1960

10-60 (and HALL, Frances Ramey) Geologic map of Lewis and Rowan Counties, Kentucky (county group 17) U. S. Geol. Survey Hydrol. Inv. Atlas HA-17, sheet 1, scale 1:125,000 (about 1 in. to 2 mi.), 1960

11-60. (and HALL, Frances Ramey) Availability of ground water in Lewis and Rowan Counties, Kentucky (county group 17) U. S. Geol. Survey Hydrol. Inv. Atlas HA-17, sheet 2, map, scale 1:125,000 (about 1 in. to 2 mi.), 1960.

12-60. (and HALL, Frances Ramey) Generalized columnar section and water-bearing character of the rocks in Lewis and Rowan Counties, Kentucky (county group 17) U. S. Geol. Survey Hydrol. Inv. Atlas HA-17, sheet 3, 1960.

13-60. (and HALL, Frances Ramey) Geologic map of Boyle, Garrard, Lincoln, and Mercer Counties, Kentucky (county group 20) U. S. Geol. Survey Hydrol. Inv. Atlas HA-20, sheet 1, scale 1:125,000 (about 1 in. to 2 mi.), 1960.

14-60 (and HALL, Frances Ramey) Availability of ground water in Boyle, Garrard, Lincoln, and Mercer Counties, Kentucky (county group 20) U. S. Geol. Survey Hydrol. Inv. Atlas HA-20, sheet 2, map, scale 1:125,000 (about 1 in. to 2 mi.), 1960.

- 15-60 (and HALL, Frances Ramey) Generalized columnar section and water-bearing character of the rocks in Boyle, Garrard, Lincoln, and Mercer Counties, Kentucky (county group 20) U. S. Geol. Survey Hydrol. Inv. Atlas HA-20, sheet 3, 1960.
- 16-60 (and HALL, Frances Ramey) Geologic map of Bourbon, Fayette, Jessamine, and Scott Counties, Kentucky (county group 25) U. S. Geol. Survey Hydrol. Inv. Atlas HA-25, sheet 1, scale 1:125,000 (about 1 in to 2 mi.), 1960.
- 17-60 (and HALL, Frances Ramey) Availability of ground water in Bourbon, Fayette, Jessamine, and Scott Counties, Kentucky (county group 25) U. S. Geol. Survey Hydrol. Inv. Atlas HA-25, sheet 2, map, scale 1:125,000 (about 1 in to 2 mi.), 1960.
- 18-60 (and HALL, Frances Ramey) Generalized columnar section and water-bearing character of the rocks in Bourbon, Fayette, Jessamine, and Scott Counties, Kentucky (county group 25) U. S. Geol. Survey Hydrol. Inv. Atlas HA-25, sheet 3, 1960.
- PALOWITCH, E. R. See GRAY, T. E. 1-60, 2-60
- PAMPEYAN, Earl Haig See TSCHANZ, C. M. 2-60
- PANEK, Louis A.  
1-60 Measurement of rock pressure with a hydraulic cell [abs.] Mining Eng., v 12, no. 12, p 1247, Dec. 1960
- PANTIN, Henry M.  
1-60. Dye-staining technique for examination of sedimentary microstructures in cores Jour Sed Petrology, v 30, no. 2, p 314-316 incl table and illus., June 1960
- PAPIKE, James J.  
1-60 Chromium muscovite in the Black Hills [abs.] South Dakota Acad. Sci. Proc 1959, v 38, p 57, Jan. 1960
- PARHAM, Walter E.  
1-60 Lower Pennsylvanian clay resources of Knox County, Illinois Illinois State Geol. Survey Div. Circ. 302, 19 p., illus., 1960
- PARK, Roderic  
1-60. (and DUNNING, Herbert Neal) Stable carbon-isotope studies of crude oils and their porphyrin aggregates [abs.] Geol. Soc. America Bull., v 71, no. 12, pt. 2, p 1942, Dec 1960.
- PARK, William H.  
1-60 (and WEDDLE, James Reid) Erratum California Div. Oil and Gas, California Oil Fields--Summ. Operations July-Dec 1959, v 45, no. 2, p 4, 1960, correction to Correlation study of southern San Joaquin Valley, no. 1, p. 33-34, Jan.-June 1959.
- PARKER, Ben Hutchinson, Jr  
1-60 Placers of Summit and Park Counties, Colorado, in Rocky Mtn. Assoc. Geologists, Guide to the geology of Colorado Denver, p 195-200 incl. sketch map, 1960
- PARKER, Edgar  
1-60 Determinaciones de permeabilidad [El Salvador] Energía Geotérmica Informe, no. 1, p 144-147 incl sections [1960].
- PARKER, Frank Leon  
1-60. (and others) Disposal of radioactive wastes in natural salt, in Disposal of radioactive wastes, V 2 Internat. Atomic Energy Agency, Sci. Conf. on Disposal of Radioactive Wastes, Monaco, Nov 16-21, 1959, Proc., v 2, p 365-384 incl index maps, diagrams, tables, and illus., with English, French, Russian, and Spanish abs., 1960  
2-60. (and others) Disposal of radioactive wastes in natural salt, in Geology of the Paradox Basin fold and fault belt Four Corners Geol. Soc. 3d Field Conf., 1960, [Guidebook] p 33-42, illus., 1960

## PARKER

PARKER, John Mason, 3d

- 1-60. Are geologists engineers? [abs.] Elisha Mitchell Sci. Soc. Jour., v. 76, no 2, p 186, Nov. 1960

PARKER, John William. See also BROWN, B. R 1-60, PICARD, M. D. 2-60, 3-60

- 1-60. Big Flat field, Utah, in Geology of the Paradox Basin fold and fault belt Four Corners Geol. Soc., 3d Field Conf , 1960, [Guidebook] p. 127-132, illus , 1960

PARKER, Patrick LeGrand. See also HOERING, T. C. 1-60

- 1-60. The geochemistry of the stable isotopes of chlorine [abs ] Dissert. Abs , v. 20, no 11, p. 4269, May 1960

PARKER, Pierce Dow

- 1-60. Some physical chemical aspects of ore deposition [abs ] Dissert. Abs , v 21, no 6, p. 1526-1527, Dec. 1960.

PARKER, Robert Hallett See also GOLDBERG, E. D. 1-60

- 1-60 Ecology and distributional patterns of marine macro-invertebrates, northern Gulf of Mexico, in Shepard, F. P., and others, ed , Recent sediments, northwest Gulf of Mexico Tulsa, Okla., Am Assoc. Petroleum Geologists, p 302-337, illus , 1960.

PARKER, Verlyn See WILLIAMS, J Stewart 1-60

PARKINSON, L. J., Jr

- 1-60. Cretaceous strata of the Cape Douglas area, Alaska Peninsula, Alaska [abs.] Geol Soc. America Bull , v. 71, no 12, pt. 2, p 2087, Dec. 1960

PARKS, William Scott

- 1-60. Prentiss County geology, with a section on Ground-water resources by B. E Ellison, Jr. and E H Boswell Mississippi State Geol. Survey Bull 87, [154] p., illus. incl. geol map, 1960.

PARMELEE, Gertrude

- 1-60. (compiler) A South Dakota bibliography--Science and applied science South Dakota Libr Assn , p 24 [1960?].

PARRISH, William

- 1-60. A recommended practice for the X-ray counter diffractometry of polycrystalline specimens [abs.] Acta Cryst , v. 13, pt 12, p. 1098-1099, Dec 1960.

- 2-60 Advances in X-ray diffractometry of clay minerals, in Swineford, Ada, ed., Clays and clay minerals Natl. Conf. Clays and Clay Minerals, 7th, Washington, D. C., Oct 1958, Proc., p 230-259 incl. diagrams and tables, 1960 (Issued as Internat. Earth Science Ser Mon 5 of Pergamon Press, New York )

PARROTT, William T See GOOCH, Edwin Octavius 1-60

PARRY, William T.

- 1-60. (and NACKOWSKI, Matthew Peter) Base metals in biotites associated with ore deposits [abs ] Geol. Soc America Bull., v. 71, no 12, pt 2, p 1942-1943, Dec 1960

PARSONS, Gordon W

- 1-60 (and SAMPSON, Ross E ) Conversion from open pit to underground mining at the Munro mine of the Canadian Johns-Mansville Company Ltd., Matheson, Ontario Canadian Mining and Metall. Bull , v 53, no. 578, p 397-405 incl diagrams and illus., June 1960, Canadian Inst Mining and Metallurgy Trans , v 63, p 250-258, 1960

PARSONS, Willard Hall

- 1-60. Origin of Tertiary volcanic breccias, Wyoming Internat. Geol Cong , 21st, Copenhagen, 1960, Rept , pt. 13, p 139-146, 1960.

- 2-60 (and WARD, Richard F ) Undergraduate research training in field geology [abs.] Geol. Soc America Bull., v. 71, no 12, pt 2, p. 1943, Dec 1960.
- 3-60 John Reed Moseley, 1900-1959 Jour Geol. Education, v. 8, no 1, p 40, spring 1960
- PARWEL, A. See GAVELIN, S. 1-60
- PATCHETT, Joseph Edmund See also MAIR, J A. 1-60
- 1-60 (and NUFFIELD, Edward Wilfrid) The synthesis and crystallography of brannerite, [Pt.] 10 of Studies of radioactive compounds Canadian Mineralogist, v. 6, pt. 4, p. 483-490, tables, 1960.
- 2-60. A study of the radioactive minerals of the uraniferous conglomerates, Blind River area [Ontario] [abs ] Canadian Mining Jour., v. 81, no 12, p 109, Dec 1960.
- PATCHICK, Paul F.
- 1-60 A rare-earth pegmatite near Nuevo, Cal Rocks and Minerals, v. 35, nos 7-8, p 323-327 incl sketch and geol. sketch maps and section, July-Aug 1960.
- PATERSON, M S. See GRIGGS, D. T. 6-60
- PATERSON, Norman R. See also MACKAY, D. G 1-60
- 1-60. New methods of elevation control speed reconnaissance gravity surveys in northern areas Canadian Mining and Metall Bull., v. 53, no 580, p 614-622 incl sketch maps, diagrams, and illus., Aug 1960, Canadian Inst Mining and Metallurgy Trans., v 63, p. 407-415, 1960
- PATERSON, S
- 1-60. Glaciological research in western Canada in 1959--Expedition to Athabaska Glacier Canadian Alpine Jour., v 43, p 99-102, May 1960.
- PATNODE, Homer Whitman See TRUMP, Robert P 1-60
- PATTEE, Eldon C
- 1-60 Tungsten resources of Montana--Deposits of the Mount Torrey batholith, Beaverhead County U S Bur Mines Rept Inv 5552, 41 p incl geol and other sketch maps, diagrams, tables, and illus., sketch maps, 1960
- PATTERSON, Arthur Lindo
- 1-60. (and LOVE, Warner Edwards) Error analysis for the Buerger precession camera Am. Mineralogist, v 45, nos 3-4, p 325-333 incl. table, Mar.-Apr 1960
- PATTERSON, Elmer Davisson
- 1-60. Ellipsoidal structures in dark-gray shale in western Pennsylvania [abs.] Geol Soc America Bull, v 71, no 12, pt. 2, p 2023, Dec. 1960.
- PATTERSON, John Robert. See also ZELL, R L. 1-60
- 1-60 (and STOREY, Taras Philip) Caledonian earth movements in western Canada Internat. Geol. Cong , 21st, Copenhagen, 1960, Rept , pt 19, p. 150-157 incl. sections and illus., 1960
- PATTERSON, Reid
- 1-60. An interpretation of recent discoveries in Kentucky's Allen County area Kentucky Geol. Survey, ser. 10, Spec Pub. 3, p 56-62, illus , 1960
- PATTERSON, Sam Hunting
- 1-60 (and HOSTERMAN, John Wallace) Geology of the clay deposits in the Olive Hill district, Kentucky, in Swineford, Ada, ed., Clays and clay minerals Natl. Conf. Clays and Clay Minerals, 7th, Washington, D. C , Oct. 1958, Proc., p. 178-194 incl. index and sketch maps, sections, diagrams, and table, also illus., 1960 (Issued as Internat. Earth Science Ser. Mon. 5 of Pergamon Press, New York.)

PATTERSON

PATTERSON, Samuel Oliver

- 1-60 (and BOSSART, Paul N , Jr.) The use and effectiveness of geophysical prospecting in the Appalachian area (E) [abs ] Am Petroleum Inst. Proc. 1960, v 40, sec. 4, p 20-21, 1960.

PATTON, John B.

- 1-60. Memorial to Charles Frederick Deiss (1903-1959) Geol Soc America Proc. 1959, p. 121-124, portrait, Oct 1960

PATTON, William Wallace, Jr

- 1-60. Geology of the upper Killik-Itkillick region, Alaska [abs ] Dissert. Abs , v. 20, no 8, p 3261-3262, Feb. 1960.

PAUL, H P

- 1-60. (and LYONS, L. A.) Quaternary surfaces along the Madison Valley floor from Ennis Lake to English George Creek, Montana, in West Yellowstone--Earthquake area Billings Geol Soc , 11th Ann. Field Conf., Sept 1960, [Guidebook] p 170-173 incl. profiles and illus , 1960

PAULSON, Oscar Lawrence, Jr

- 1-60. Ostracoda and stratigraphy of Austin and Taylor equivalents of north-east Texas [abs ] Dissert. Abs., v. 20, no. 11, p. 4370, May 1960

PAULY, Hans

- 1-60 Paragenetic relations in the main cryolite ore of Ivigtut, South-Greenland Neues Jahrb Mineralogie Abh (Stuttgart, Germany), Band 94, Festband Ramdohr, 1 Hälfte, p. 121-139 incl tables, also sketch map and illus., with German abs., June 1960, reprinted as Grønlands Geol. Undersøgelse Misc. Paper 23, 1960, Copenhagen Univ. Mus. Minéralogie et Géologie Commun. Geol 106, 1960.

PAUTARD, Frederick G. E.

- 1-60. Calcification in unicellular organisms, in Sognnaes, R. F , ed., Calcification of biological systems--A symposium, Washington, D C , Dec 29, 1958 Am Assoc. Adv. Sci. Pub. 64, p 1-14 incl illus , 1960.

PAVLIDES, Louis

- 1-60 Structurally localized metamorphism of manganese deposits, Aroostook County, Maine Art 211 in U. S. Geol Survey Prof Paper 400-B, B463-B465 incl table, 1960

PAYNE, Max B See SOC. ECON PALEONTOLOGISTS and MINERALOGISTS Pacific Sec 1-60

PAYNE, William Ross

- 1-60 Comanche Peak limestone, in Cretaceous stratigraphy of the Grand and Black Prairies, east-central Texas. Baylor Geol. Soc., Field Conf , Apr. 1960, Guidebook, p. 79-81, 1960

PEACOR, D. R

- 1-60 (leader) Mineralogy of pegmatites of the Newry Hill area, Newry, Maine, Trip E in Field trips in west-central Maine New England Inter-collegiate Geol. Conf., 52d Ann Mtg., Oct 1960, Guidebook, p 33-38, geol. sketch map, 1960.

PEAK, Wilferd W See FUQUA, Wallace Dunham 1-60, 2-60

PEARCE, Denis Wiffen See also SCHWENDIMAN, L. C. 1-60

- 1-60 (and LINDEROTH, C E , and NELSON, J. L , and AMES, Lloyd Leroy, Jr.) A review of radioactive waste disposal to the ground at Hanford [Washington], in Disposal of radioactive wastes, V 2 Internat. Atomic Energy Agency, Sci Conf on Disposal of Radioactive Wastes, Monaco, Nov 16-21, 1959, Proc., v 2, p. 345-363 incl sketch map, sections, diagrams, and tables, with English, French, Russian, and Spanish abs., 1960

PEARCY, G Etzel

- 1-60 Continental shelf--Physical vs. legal definition [abs] Geol Soc America Bull., v 71, no 12, pt 2, p 2109, Dec. 1960

PEARL, Richard Maxwell

- 1-60. Geology--an introduction to principles of physical and historical geology, with examination and answers keyed to standard textbooks New York, N Y, Noble, Coll Outline Ser, no. 13, 260 p, illus, 1960

PEARRE, Nancy C.

- 1-60 (and HEYL, Allen Van) Chromite and other mineral deposits in serpentine rocks of the Piedmont Upland, Maryland, Pennsylvania, and Delaware U. S. Geol. Survey Bull 1082-K, p. 707-833 incl geol. maps, diagram, tables, and sections, 1960

PEARSON, George Raymond

- 1-60 (and SHAW, Denis Martin) Trace elements in kyanite, sillimanite and andalusite Am. Mineralogist, v. 45, nos. 7-8, p. 808-817 incl. tables, July-Aug 1960
- 2-60. Lower Cretaceous coal deposits in the foothills between Sheep Creek and Wildhay River, Alberta, in Rock Lake. Edmonton Geol Soc., 2d Ann. Field Trip, Aug 1960, Guidebook, p. 72-78, geol. map, 1960.
- 3-60. Evaluations of some Alberta coal deposits--Pt. 1, The Wizard Lake district, Pt. 2, The Westlock-Barrhead district, Pt. 3, The Sheep Creek-Wildhay River district Research Council Alberta Prelim. Rept. 60-1, 61 p. incl. index and sketch maps, correlation charts, and tables, geol. map, 1960

PEARSON, Walter J

- 1-60. Developments in potash in Saskatchewan Canadian Mining and Metall Bull, v 53, no. 582, p 759-764 incl. tables, Oct. 1960, Canadian Inst. Mining and Metallurgy Trans, v 63, p. 510-515, 1960
- 2-60. (and PHEMISTER, Thomas Crawford, and THOMSON, James Edgar) Dryden township, District of Sudbury Ontario Dept Mines Prelim Map P.56, geol. map, scale 1 in. to 1/4 mi., with separate legend and text [May 22, 1960]

PEASE, Maurice H, Jr See also BRIGGS, R P 1-60

- 1-60 Structural control of hydrothermal alteration in some volcanic rocks in Puerto Rico Art 165 in U S. Geol. Survey Prof. Paper 400-B, p. B357, B360-B363 incl index, geol., and fault maps, 1960
- 2-60. (and BRIGGS, Reginald Peter) Geology of the Comerio quadrangle, Puerto Rico U. S. Geol. Survey Misc Geol. Inv. Map I-320, scale 1 20,000 (about 1 in. to 1,700 ft), with sections and text, 1960

PEASE, Robert W.

- 1-60 The time continuum of geography in Modoc County, California [abs] Assoc Am Geographers Annals, v 50, no 3, p 339-340, Sept 1960.

PECK, Dallas Lynn

- 1-60. Cenozoic volcanism in the Oregon Cascades Art 144 in U S. Geol. Survey Prof. Paper 400-B, p B308-B310 incl sketch map, diagram, and table, 1960.

PECK, Joseph Howard, Jr. See also LANGENHEIM, R L, Jr 4-60

- 1-60 Paleontology and correlation of the Ohlson Ranch formation California Univ Pubs Geol Sci, v 36, no. 4, p 233-241, illus, 1960.

PECK, Ralph Brazelton See TERZAGHI, Karl 2-60

PECKHAM, Alan Embree

- 1-60. Preliminary investigations of underground waste disposal near Arco, Idaho [abs.] Washington Acad Sci. Jour, v 50, no 7, p 6, Nov 1960.

## PECORA

PECORA, William Thomas. See also BRYANT, B. H. 1-60

1-60 Coesite craters and space geology. *GeoTimes*, v. 5, no. 2, p. 16-19, 32 incl. illus., Sept. 1960.

PEDDER, Alan Edwin Hardy

1-60 New species of brachiopods from the Upper Devonian of Hay River, western Canada [Northwest Territories] *Palaeontology* (London), v. 3, pt. 2, p. 208-216, illus., Aug. 1960.

PEDERSEN, K. See KOCH, B. Eske 1-60

PELLETIER, Bernard Roderick

1-60. The measurement of grain diameters in thin section with the use of a strip gauge. Carleton Univ. Dept. Geology Geol. Paper 60-1, 5 p., illus., 1960.

2-60 Triassic stratigraphy Rocky Mountain foothills, northeastern British Columbia, 94J and 94K. Canada Geol. Survey Paper 60-2, 32 p., illus. incl. geol. map, 1960.

PEMBERTON, Earl

1-60. (editor, and others) The minerals of Boron, California. Montebello, Mineral Research Soc. California, 40 p., illus., 1960

PENNSYLVANIA EARTH and SPACE SCIENCE COURSE ADVISORY COMMITTEE

1-60. A suggested teaching guide for the earth and space science course. Washington, D. C., Natl. Aviation Education Council, 103 p. incl. section, diagrams, and illus., reprinted Nov. 1960, originally published by J. H. Moss and others, 1959.

PENNSYLVANIA GEOLOGISTS

1-60. (WISE, Donald Underkofler, and KAUFFMAN, Marvin Earl, editors) Some tectonic and structural problems of the Appalachian Piedmont along the Susquehanna River, 25th annual field conference, October 22-23, 1960, guidebook. Lancaster, Franklin and Marshall Coll., [103] p. incl. geol. and other sketch maps, and diagrams, illus., 1960. Includes individual papers which are cited separately.

PENNY, John Sloyan. See GROOT, Johan Jacob 1-60

PENTTILLA, William Charles. See BADGLEY, Peter Coles 1-60, 3-60

PEOPLES, Joe Webb. See JONES, William Rich 1-60

PEREZ la SALVIA, Hugo. See WALKER, Fred C. 1-60

PERKINS, Henry Frank. See GIDDENS, Joel 1-60

PERLMUTTER, Nathaniel Matthew

1-60 Sources of ground water in southeastern New York. U. S. Geol. Survey Circ. 417, 9 p. incl. index map and table, 1960

PERLOFF, Alvin

1-60. (and BLOCK, Stanley) Low temperature phase transition of coesmanite. *Am. Mineralogist*, v. 45, nos. 1-2, p. 229, Jan-Feb. 1960

PERMIAN SUBCOMMITTEE of the National Research Council's Committee on Stratigraphy

1-60. (Dunbar, Carl Owen, chm.) Correlation of the Permian formations of North America. *Geol. Soc. America Bull.*, v. 71, no. 12, pt. 1, p. 1763-1805 incl. diagrammatic sections, correlation chart, Dec. 1960

PERRET, William Rikers. See ADAMS, W. M. 2-60, VORTMAN, Luke J. 1-60



PERRILLIAT MONTOYA, Maria del Carmen

- 1-60. Moluscos del Mioceno de la Cuenca Salina del Istmo de Tehuantepec, México México Univ. Nac. Inst Geología Paleontología Mexicana, no 8, 38 p, illus, 1960.

PERRY, Annette Josephine

- 1-60 The past ages of life, in Fisher, James and others, eds., The Doubleday pictorial library of nature--V. 2, Earth, plants, animals Garden City, N. Y, Doubleday and Co., Inc, p. 126-157 incl illus. and diagrams, 1960.

PERRY, Douglas. See DAUGHTRY, Arthur C. 1-60

PERRY, Eugene Sheridan

- 1-60. Oil and gas in Montana--Revision of 1959 Montana Bur Mines and Geology Bull. 15, 86 p., illus. incl geol maps, Feb 1960.

PERRY, J. Kent

- 1-60 A new geochemical method for the determination of molybdenum in soil and rock Econ Geology, v 55, no 6, p. 1232-1243 incl diagrams and tables, Sept.-Oct. 1960.

PERRY, Stanley Calvin, 1904-1936. See CANADA GEOL. SURVEY 13-60

PERRY, Thomas Gregory. See also UTGAARD, John 1-60, 2-60

- 1-60. (and RODRIGUEZ, Joaquin) Lectotype of *Anisotrypa symmetrica* Ulrich [Kentucky] Jour: Paleontology, v. 34, no 2, p 277-279, illus., Mar. 1960.  
2-60. (and HATTIN, Donald Edward) Osgood (Niagaran) bryozoans from the type area [Indiana] Jour. Paleontology, v. 34, no 4, p 695-710, illus, July 1960

PESELNICK, Louis

- 1-60 (and OUTERBRIDGE, William F) Internal friction and rigidity modulus of Solenhofen limestone over a wide frequency range Art 182 in U. S Geol. Survey Prof Paper 400-B, p. B395-B396 incl diagrams, 1960

PESQUERA VELÁZQUEZ, Rubén

- 1-60 (and CARBONELL CORDOBA, Manuel, and others) Geología y exploración de los depósitos de carbón de la región de San Marcial, Estado de Sonora México Consejo Recursos Nat no Renovables Bol. 59, 39 p., illus, 1960.

PESSAGNO, Emile A., Jr.

- 1-60. Preliminary note on the geology of the Ponce-Coamo area, Puerto Rico Caribbean Geol Conf, 2d, Mayagüez, Puerto Rico, Jan. 4-9, 1959, Trans, p. 83-86, with discussion, 1960.  
2-60. Stratigraphy and micropaleontology of the Cretaceous and lower Tertiary of Puerto Rico Micropaleontology, v 6, no. 1, p. 87-110, illus., Jan. 1960.  
3-60 Thin-sectioning and photographing smaller foraminifera Micropaleontology, v. 6, no 4, p 419-423, illus, Oct. 1960  
4-60 Geology of the Ponce-Coamo area, Puerto Rico Indus Lab, Commonwealth Puerto Rico Econ. Devel. Adm, and Dept. Geology, Princeton Univ., 147 p. incl index and sketch maps, diagrams, charts, and illus, 1960.

PESTANA, Harold Richard

- 1-60. Fossils from the Johnson Spring formation, Middle Ordovician, Independence quadrangle, California. Jour Paleontology, v. 34, no. 5, p 862-873 incl. geol sketch map, illus., Sept 1960

PETCH, Howard Earl See HOLUJ, F 1-60

## PETERS

PETERS, Jack Warren

1-60. Geophysical case history of the Horse Creek field, Laramie County, Wyoming Geophysics, v 25, no. 3, p 602-612 incl. sketch maps, sections, and diagram, June 1960.

PETERSEN, N S See BABER, Kenneth D. 1-60

PETERSEN, Richard G

1-60. Detrital-appearing uraninite grains in the Shinarump member of the Chinle formation in northern Arizona Econ Geology, v. 55, no 1, p. 138-149 incl. sketch map, section, table, and illus., Jan.-Feb. 1960.

PETERSON, Dallas Odell

1-60. Regional stratigraphy of the Pennsylvanian system in northeastern Utah, western Wyoming, northwestern Colorado, and southeastern Idaho [abs.] Dissert. Abs , v. 20, no 7, p. 2757, Jan 1960

PETERSON, Donald William

1-60 Geology of the Haunted Canyon quadrangle, Arizona U. S. Geol. Survey Geol. Quad Map GQ-128, scale 1 24,000 (1 in to 2,000 ft ), with sections and text, 1960

PETERSON, Melvin N. A

1-60. Mineralogy and petrology of upper Mississippian carbonate rocks of the Cumberland Plateau in Tennessee [abs.] Geol Soc America Bull., v 71, no. 12, pt 2, p. 1943, Dec. 1960.

PETERSON, Norman V.

1-60. Geology of the Lakeview, Oregon, uranium area [abs ] Mining Eng , v. 12, no. 6, p. 534, June 1960.

PETERSON, Warren L

1-60. (and SCOTT, Glenn Robert) Precambrian rocks and structure of the Platte Canyon and Kassler quadrangles, Colorado, in Rocky Mtn. Assoc. Geologists, Guide to the geology of Colorado Denver, p. 181-183, 1960

## PETROLEUM INFORMATION

1-60. Rocky Mountain oil and gas operations for 1959, 30th annual resume Denver, Colo , [159] p. incl. illus and maps, 1960.

2-60. Map of the Rocky Mountain region 1960 ed., revised, Denver, Colo , scale 1 in. to 16 mi. [1960].

PETROW, Henry George

1-60 (and NIETZEL, Oscar A , and DeSESA, Michael A.) Radiochemical determination of radium in uranium milling process samples Anal. Chemistry, v 32, no. 8, p. 926-927 incl. tables, July 1960

PETRUK, William

1-60. The Clearwater copper-zinc deposit, New Brunswick, and its setting, with a special study of mineral zoning around such deposits [abs.] Canadian Mining Jour., v. 81, no. 1, p 94, Jan. 1960

PETSCH, Bruno Carl

1-60 Ground magnetometer survey of South Dakota--A progress report [abs.] South Dakota Acad. Sci Proc. 1959, v. 38, p 32, Jan. 1960

PETTERSSON, Hans

1-60 The accretion of cosmic matter to the Earth Endeavour (London), v 19, no 75, p. 142-146 incl. diagram and illus., July 1960

2-60. Cosmic spherules and meteoritic dust Sci. Am , v. 202, no. 2, p 123-126, 128, 130, 132 incl. diagrams and illus , Mar 1960

PETTJOHN, Francis John. See also BOSWELL, P. G H 1-60

1-60. Some contributions of sedimentology to tectonic analysis Internat Geol. Cong., 21st, Copenhagen, 1960, Rept., pt 18, p. 446-454 incl. diagrams and tables, 1960

PETTY, John Kirkpatrick

- 1-60. Interpretation of air-drilled samples Petroleum Engineer for Management, v 32, no 1, p B-88, B-90, B-94-B-95, B-98 incl diagram and illus, Jan 1960.

PETTYJOHN, Wayne A

- 1-60. The Dakota controversy South Dakota Acad Sci Proc. 1959, v 38, p 34-38, illus., Jan 1960  
2-60 The stratigraphy of the Newcastle Sandstone in South Dakota [abs.] South Dakota Acad Sci. Proc. 1960, v 39, p 173-174, Nov. 1, 1960

PÉWÉ, Troy Lewis

- 1-60. (and BURBANK, Lawrence) Multiple glaciation in the Yukon-Tanana Upland, Alaska--A photogeologic interpretation [abs ] Geol Soc America Bull, v 71, no 12, pt 2, p 2088, Dec 1960  
2-60. (and WEBER, Florence Robinson) Reconnaissance engineering geology for highway location in Alaska [abs ] Geol. Soc. America Bull, v. 71, no 12, pt. 2, p 2088, Dec 1960.

PEYTON, Garland

- 1-60. Georgia, record exploratory activity reported World Oil, v 150, no 7, p 106-108 incl. sketch map, June 1960

PFISTER, A J See STEWART, Lincoln Adair 1-60

PHARR, Richard F. See MITCHELL, Richard Scott 3-60

PHELPS, Girard W

- 1-60. Practical grain size analysis of clays--[Pt ] 3, Log probability data plotting Am Ceramic Soc Bull., v 39, no 5, p 267-269 incl diagrams and tables, May 1960

PEMISTER, Thomas Crawford See also PEARSON, W J. 2-60

- 1-60. The nature of the contact between the Grenville and Temiskaming sub-provinces in the Sudbury district of Ontario, Canada Internat. Geol Cong., 21st, Copenhagen, 1960, Rept, pt. 14, p 108-119 incl. sketch maps, 1960  
2-60. (and GRANT, James A ) Neelon township, District of Sudbury Ontario Dept Mines Prelim. Map P 55, geol map, scale 1 in to 1/4 mi., with separate legend and text [May 22, 1960].  
3-60. (and MacGREGOR, Ian D ) Broder township, District of Sudbury Ontario Dept. Mines Prelim Map P.57, geol map, scale 1 in. to 1/4 mi, with separate legend and text [May 22, 1960]  
4-60. (and GRANT, James A.) Dill township, District of Sudbury Ontario Dept Mines Prelim. Map P.58, geol map, scale 1 in. to 1/4 mi., with separate legend and text [May 22, 1960].

PHIFER, Robert L.

- 1-60. Andrews County, Texas--V 1, A-F Petroleum Rev. 1960, 198 p, illus, 1960, V. 2, G-W, 350 p, illus, 1960

PHILBRICK, Shailer Shaw

- 1-60. Cyclic sediments and engineering geology Internat Geol Cong., 21st, Copenhagen, 1960, Rept, pt. 20, p. 49-63 incl. sections and chart, 1960

PHILLIPS, Julien F. See GARRETT, Donald Everett 1-60

PHILLIPS, Victor Arthur

- 1-60. (and CANNON, Peter) Macroscopic swelling of vermiculite crystals in water Nature (London), v. 187, no. 4734, p. 312-314, illus., July 23, 1960.

PHILPOTT, Thomas Hughes

- 1-60 Lower Cretaceous trend of South Arkansas, North Louisiana, Mississippi, and Alabama [abs ] Am Assoc. Petroleum Geologists Bull., v. 44, no 9, p. 1603, Sept. 1960.

PHILPOTT

- 2-60. Recent developments in Lower Cretaceous trend of Mississippi [abs.] Am Assoc Petroleum Geologists Bull., v. 44, no 7, p 1254, July 1960.  
3-60. Lower Cretaceous trend of south Arkansas, north Louisiana, Mississippi and Alabama [abs.] Gulf Coast Assoc. Geol. Soc. Trans., v. 10, p. 276-277 incl. sketch maps and section, 1960

PHINNEY, William Charles

- 1-60. Phase equilibrium in the metamorphic rocks of St. Paul Island, Nova Scotia [abs.] Jour. Geophys. Research, v. 65, no. 8, p 2516, Aug. 1960.

PHIPPS, Rollin E.

- 1-60 A case history of the Bronte (Ellenburger) and Rawlings fields, Coke County, Texas Geophysics, v. 25, no. 6, p. 1167-1183 incl. sketch maps, diagrams, and chart, Dec. 1960

PHLEGER, Fred B. See also SHEPARD, F. P. 3-60

- 1-60. Sedimentary patterns of microfaunas in northern Gulf of Mexico, in Shepard, F. P., and others, ed., Recent sediments, northwest Gulf of Mexico Tulsa, Okla., Am. Assoc. Petroleum Geologists, p. 267-301, illus., 1960.  
2-60 Recent sedimentology, northwest Gulf of Mexico--retrospect and prospect, in Shepard, F. P., and others, ed., Recent sediments, northwest Gulf of Mexico Tulsa, Okla., Am. Assoc. Petroleum Geologists, p. 365-367, 1960.  
3-60. Ecology and distribution of Recent Foraminifera Baltimore, Md., Johns Hopkins Press, 297 p., illus., 1960.  
4-60. Foraminiferal populations in Laguna Madre, Texas Tohoku Univ. Sci. Repts., 2d ser., Geology, Spec. V., no. 4, p. 83-91, illus., May 1960.

PHOENIX, David Allen

- 1-60. (and STACY, John R.) Techniques of geologic illustration [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1944, Dec 1960

PICARD, Meredith Dane

- 1-60. Lithologic zone boundaries in Pennsylvanian Paradox member, Paradox basin [Colorado Plateau] Am Assoc. Petroleum Geologists Bull., v. 44, no 9, p 1574-1578 incl sections, Sept. 1960.  
2-60. (and others) Pennsylvanian gas in Four Corners region [abs.] Am. Assoc. Petroleum Geologists Bull., v. 44, no. 6, p 960, June 1960.  
3-60. (and others) Pennsylvanian gas in the Four Corners region [abs.] Am. Assoc. Petroleum Geologists Rocky Mtn. Sec. Geol. Record 1960, p 162 [1960].  
4-60. On the origin of oil, Eagle Springs field, Nye County, Nevada, in Geology of east central Nevada Intermountain Assoc. Petroleum Geologists, 11th Ann. Field Conf., 1960 Guidebook, p. 237-244 incl index map, section, and tables, 1960.  
5-60 Carbon dioxide, nitrogen and helium in Mississippian of Four Corners region [Colorado Plateau], preliminary statement, in Geology of the Paradox Basin fold and fault belt Four Corners Geol. Soc., 3d Field Conf., 1960 [Guidebook] p 138-140, illus., 1960

PICKARD, George Lawson

- 1-60. (and GIOVANDO, L. F.) Some observations of turbidity in British Columbia inlets Limnology and Oceanography, v. 5, no. 2, p 162-170, illus., Apr. 1960.

PICKELL, James J.

- 1-60. (and HEACOCK, John G., Jr.) Density logging Geophysics, v. 25, no 4, p. 891-904 incl. diagrams and table, Aug. 1960

PICKETT, George Richard

- 1-60. The use of acoustic logs in the evaluation of sandstone reservoirs Geophysics, v. 25, no 1, p. 250-274 incl. diagrams and table, Feb 1960.

PIERCE, Arthur Preble

- 1-60 Studies of helium and associated natural gases Art 37 in U. S Geol Survey Prof. Paper 400-B, p B77-B79 incl diagrams, 1960.

PIERCE, Richard LeRoy

- 1-60 Converting coordinates for microscope-stage scales Micropaleontology, v. 5, no 3, p. 377-378, table, July 1959, discussion by A. Traverse, v. 6, no. 4, p 424, Oct. 1960.

PIERCE, Richard Lacy

- 1-60 (and GARRITY, Martin J.) Waterflood performance, Upper Terminal zone, Fault Block VB, Wilmington Oil Field [Calif ] Mines Mag., v. 50, no. 11, p 37-43 incl. sketch maps, section, and diagrams, Nov. 1960

PIERCE, William Gamewell

- 1-60. The "break-away" point of the Heart Mountain detachment fault in northwestern Wyoming Art. 106 in U. S. Geol Survey Prof Paper 400-B, p. B236-B237 incl. sections, 1960  
2-60. Reef Creek detachment fault in northwestern Wyoming [abs.] Geol. Soc America Bull , v 71, no 12, pt. 2, p. 1944, Dec 1960

PIERCE, William Dwight

- 1-60 Fossil arthropods of California--No 23, Silicified insects in Miocene nodules from the Calico Mountains Southern California Acad Sci. Bull , Jan -Apr 1960, v. 59, pt 1, p. 40-49, illus , May 18, 1960.  
2-60 Silicified Turbellaria from Calico Mountain nodules. Southern California Acad. Sci Bull Sept -Dec 1960, v 59, pt 3, p 138-143, illus , Dec. 31, 1960.

PIERSON, Lloyd

- 1-60 Arches National Monument [Utah], in Geology of the Paradox Basin fold and fault belt Four Corners Geol Soc., 3d Field Conf , 1960, [Guide-book] p 17-21, illus., 1960.

PILKEY, Orrin H.

- 1-60. (and HOWER, John, Jr ) The effect of environment on the concentration of skeletal magnesium and strontium in Dendroaster Jour Geology, v 68, no 2, p 203-216 incl diagrams and tables, Mar. 1960

PILLMORE, Charles Lee. See IZETT, Glenn Arthur 1-60, WITKIND, Irving Jerome 2-60

PINCUS, Howard Jonah

- 1-60. Geological interpretation of major Ohio gravity anomalies [abs.] Jour Geophys. Research, v 65, no 8, p 2517, Aug. 1960  
2-60. Secrets of the sea--Oceanography for young scientists Columbus, Ohio, Am Education Pubs., 31 p incl sketch maps, diagrams, and illus., 1960.  
3-60. Engineering geology of the Ohio shore line of Lake Erie, Sheets A-E Ohio Div Shore Erosion Tech Rept 7, 1960  
4-60 A report on the status of Lake Erie geological research in Ohio Michigan Univ Great Lakes Research Div. Pub. 4, p. 95-107, illus , 1960.

PINE, Clyde Anthony

- 1-60 Subsurface structure of Lake Arthur field, Jefferson Davis Parish, Louisiana [abs ] Am Assoc. Petroleum Geologists Bull., v 44, no. 9, p 1602-1603, Sept. 1960  
2-60. Stratigraphy and structure of Lake Arthur Field, Jefferson Davis Parish, Louisiana Gulf Coast Assoc. Geol Socs Trans., v. 10, p. 242-257 incl index, structure, and tectonic maps, sections, and table, 1960.

PINKLEY, George Roger

- 1-60. Southwest Texas exploration centers on Edwards trend--Pt 1, The deep Edwards trend [Texas]--Pt. 2 Oil and Gas Jour., v. 58, no. 47, p. 262, 265-266 incl. structure contour map, Nov. 21, 1960, no. 48, p 112, 115, 117-118 incl index map, Nov. 28, 1960

## PINKLEY

- 2-60 Edwards gas trend of South Texas, in Natural gas in the Southwest Southwestern Federation Geol. Socs. Trans., v. 1, p. 63-79 incl. sketch maps, 1960

### PINSACK, Arthur Peter

- 1-60. (and MURRAY, Haydn Herbert) Regional clay mineral patterns in the Gulf of Mexico, in Swineford, Ada, ed., Clays and clay minerals Natl. Conf. Clays and Clay Minerals, 7th, Washington, D. C., Oct. 1958, Proc., p. 162-177 incl. sketch map, diagram, and table, 1960. (Issued as Internat. Earth Science Ser. Mon. 5 of Pergamon Press, New York.)

### PINSON, William Hamet, Jr. See FAIRBAIRN, Harold Williams 1-60, 3-60, HART, Stanley R. 1-60, HERZOG, Leonard Frederick, Jr. 2-60, HURLEY, Patrick Mason 1-60

### PIRKLE, Earl Conly

- 1-60. Kaolinitic sediments in peninsular Florida and origin of the kaolin. Econ. Geology, v. 55, no. 7, p. 1382-1405 incl. index map, geol. cross section, tables, and illus., Nov. 1960.  
2-60. Characteristics of kaolinitic sediments in peninsular Florida and immediate origin of the kaolin, in Late Cenozoic stratigraphy and sedimentation of central Florida Southeastern Geol. Soc., 9th Field Trip, May 1960, Guidebook, p. 36-37, 1960.

### PIRSON, Sylvain Joseph

- 1-60 How to make geochemical exploration succeed World Oil, v. 150, no. 5, p. 93-96 incl. diagram, Apr. 1960

### PISTORIUS, Carl W.F.T.

- 1-60 A note on so-called "pressure independent" minerals Am. Mineralogist, v. 45, nos. 9-10, p. 1097-1098, Sept.-Oct. 1960.  
2-60 Lattice constants and probable space group of anhydrous cupric sulfate (artificial chalcocyanite). Am. Mineralogist, v. 45, nos. 5-6, p. 744-746 incl. table, May-June 1960  
3-60. (and KENNEDY, George Clayton) Stability relations of grossularite and hydrogrossularite at high temperatures and pressures Am. Jour. Sci., v. 258, no. 4, p. 247-257 incl. diagrams and tables, Apr. 1960.  
4-60. (and SHARP, Willard Edwin) Properties of water--Pt. 6, Entropy and Gibbs free energy of water in the range 10-1000°C and 1-250,000 bars Am. Jour. Sci., v. 258, no. 10, p. 757-768 incl. tables, Dec. 1960.

### PITCHER, Max Grow

- 1-60 Fusulinids of the Cache Creek group, Stikine River area, Cassiar District, British Columbia, Canada Brigham Young Univ. Research Studies Geology Ser., v. 7, no. 7, 64 p., illus., May 1960.

### PITRAT, Charles William. See BUDDING, Antonius Jacob 1-60

### PITT, William Daniel

- 1-60. It may be necessary for Oklahoma drillers to dig deeper for Ouachita reserves Oil and Gas Jour., v. 58, no. 46, p. 214-217 incl. index map and illus., Nov. 14, 1960.  
2-60 What lies beneath the Lukfata sandstone? Oklahoma Geology Notes, v. 20, no. 11, p. 290-291, illus., Nov. 1960.

### PITTMAN, E. D. See PROTZMAN, Don L. 1-60

### PLATT, Lucian B.

- 1-60. Structure and stratigraphy of the Cossayuna area, New York [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1944-1945, Dec. 1960.

### PLESSET, Milton S. See also LATTER, A. L. 1-60

- 1-60. (and LATTER, Albert L.) Transient effects in the distribution of carbon-14 in nature Natl. Acad. Sci. Proc., v. 46, no. 2, p. 232-241 incl. diagrams and tables, Feb. 1960.

PLOCH, Richard A. See KESLING, Robert Vernon 2-60

PLOUFF, Donald F. See also KELLER, G V 3-60

1-60. Geophysical studies on IGY drifting station Bravo 1958-59 [abs.] Oil-week, v. 10, no 49, p. 19-20, Jan. 23, 1960

PLUMMER, Norman Vincen

1-60. (and BAULEKE, Maynard Paul, and HLADIK, William B.) Dakota formation refractory clays and silts in Kansas Kansas State Geol Survey Bull. 142, pt 1, p. 1-52, illus, Mar. 1, 1960

PLUNKETT, J D

1-60. Quantitative X-ray spectrographic determination of  $\text{Fe}_2\text{O}_3$  in silica [abs] Am Ceramic Soc Bull, v. 39, no. 4, p 221, Apr. 1960

POBORSKI, Stanislaw J.

1-60 Unconformities [abs.] Geol. Soc. America Bull., v 71, no. 12, pt 2, p 2087, Dec. 1960.

POCOCK, Stanley A J See CRICKMAY, C H. 3-60, STAPLIN, Frank Lyons

1-60, 2-60, ZIEGLER, Walter Heinrich 2-60

POETSCH, Ernst See RIECKEN, Frank Frederick 1-60

POINDEXTER, Edward Haviland

1-60. A note on the strain-dependence of refractive index in crystals: Am. Mineralogist, v 45, nos 11-12, p. 1297-1300, Nov -Dec 1960.

POLAND, Joseph Fairfield

1-60. Land subsidence due to withdrawal of fluids, Pt. 2 [abs] Geol. Soc America Bull., v 71, no. 12, pt 2, p 1945, Dec 1960

2-60 Land subsidence in the San Joaquin Valley, California, and its effect on estimates of ground-water resources Internat. Assoc Sci Hydrology (Gentbrugge, Belgium) Pub 52, p. 324-335 incl. sketch maps, diagrams and French abs., 1960

POLANSKY, Theodore Stephen

1-60. (and DONALD, Harold Jack, and KINNEY, Corliss Robert) Structure of high-rank coals deduced from helium densities Nature (London), v 186, no. 4727, p. 792-793, illus, June 4, 1960

POLDERVAART, Arie. See also TAUBENECK, W H 1-60

1-60. (and TAUBENECK, William Harris) Layered intrusions Internat. Geol. Cong., 21st, Copenhagen, 1960, Rept, pt 13, p 239-246, 1960.

POLLACK, Henry N.

1-60 Interglacial Fall Creek west of Beebe Lake, Ithaca, New York Compass, v 37, no 2, p. 66-72 incl sketch maps and diagram, Jan. 1960.

POLLACK, Jerome Marvin. See HARRINGTON, John Wilbur 1-60

POLLACK, Sidney Solomon See GRANQUIST, William Thomas

POLLOCK, Donald William Thomas

1-60. Preliminary report on Lesage-Rivard area, electoral district of Labelle Quebec Dept Nat Resources Geol. Surveys Br Prelim. Rept. 441, 11 p, geol map, 1960, also French ed.

POLLOCK, Gerald D.

1-60. Age determination of granitic rocks from Manitoba and northwestern Ontario by the lead-alpha method [abs] Canadian Mining Jour, v. 81, no 11, p. 114, Nov 1960

POLLOCK, Herbert Chermiside. See GOW, James Donald 1-60

## POLLOCK

POLLOCK, James Percy

- 1-60. (and SCHILLINGER, A. W., and BUR, T.) A geochemical anomaly associated with a glacially transported boulder train, Mt. Bohemia, Keweenaw County, Michigan Internat Geol Cong., 21st, Copenhagen, 1960, Rept., pt 2, p. 20-27 incl. geol. sketch maps, 1960.

POLLOCK, Samuel J.

- 1-60. Ground-water map of the North Scituate quadrangle, Rhode Island, showing water-bearing formations and related ground-water data Rhode Island Water Resources Coordinating Board Ground-Water Map GWM 12, scale 1:24,000 (1 in. to 2,000 ft.), with sections, 1960

POMEROY, John S. See LATHRAM, Ernest Hartwell 2-60

POMEROY, Paul W. See also OLIVER, J. E. 1-60

- 1-60. (and OLIVER, Jack Ertle) Seismic waves from high-altitude nuclear explosions Jour Geophys. Research, v. 65, no. 10, p 3445-3457 incl. diagrams and tables, Oct 1960.

POMMER, Alfred Michael. See also CARROLL, Dorothy 1-60, 2-60, OUTER-BRIDGE, W. F 1-60

- 1-60. Sodium-sensitive glass electrodes in clay titrations Art. 229 in U S. Geol. Survey Prof Paper 400-B, p B502-B504 incl diagram and table, 1960.

PONCE, Tomás

- 1-60 Los cráteres lunares no son de origen volcánico--A propósito de la afirmación del Ruso Dr. N. A. Kozirev San Salvador, Ministerio de Cultura, 68 p., 1960.

POND, Gordon G

- 1-60. Rescuing the fossil remains of an imperial mammoth [New Mexico] Desert Mag., v. 23, no. 5, p. 12-13 incl. sketch map and illus., May 1960.

PONDER, Herman

- 1-60. The geology, mineralogy, and genesis of selected fireclays from Latah County, Idaho [abs] Dissert. Abs., v 20, no 7, p 2757-2758, Jan 1960.  
2-60. (and KELLER, Walter David) Geology, mineralogy, and genesis of selected fireclays from Latah County, Idaho, in Swineford, Ada, ed, Clays and clay minerals, V. 8 Natl Conf Clays and Clay Minerals, 8th, Norman, Okla., Oct 1959, Proc., p 44-62 incl. geol. sketch map, section, diagrams, tables, also illus., 1960 (Issued as Internat Earth Science Ser Mon. 9 of Pergamon Press New York)

POOLE, David M See Van ANDEL, Tjeerd Hendrik 1-60

POOLE, Forrest Graham See HOUSER, Frederick Northrop 1-60, 3-60

POOLE, Joseph L. See BRODING, Robert Andrew 1-60

POOLE, William Hope. See also CANADA GEOL SURVEY 40-60

- 1-60. Hayesville and McNamee map-areas, York, Northumberland, and Carleton counties, New Brunswick Canada Geol. Survey Paper 60-15, 10 p, illus incl geol maps, 1960

POOLEY, Robert Neville

- 1-60. (and MEYER, Robert Paul, and WOOLLARD, George Prior) Yamacraw Ridge, pre-Cretaceous structure beneath South Carolina-Georgia Coastal Plain [abs] Am Assoc. Petroleum Geologists Bull., v 44, no 7, p 1254-1255, July 1960.

POPE, John Keyler See also CASTER, K E 1-60

- 1-60. Sokolophocoleus, new name for the Machaeridian genus, Lophocoleus Ruedemann Jour Paleontology, v 34, no 5, p 1054, Sept 1960, discussion of paper by Ruedemann, R., New York State Mus Bull 327, p 45-71, illus., Apr. 1942



- POPENOE, Willis Parkison See also MATSUMOTO, Tatsuro 2-60  
 1-60 (and IMLAY, Ralph Willard, and MURPHY, Michael A ) Correlation of the Cretaceous formations of the Pacific Coast (United States and north-western Mexico) Geol Soc. America Bull , v 71, no. 10, p 1491-1540 incl. index maps, correlation chart, Oct 1960  
 2-60 Endemic Pacific Coast Cretaceous faunal sequences [abs ] Geol Soc. America Bull , v. 71, no 12, pt 2, p. 1945, Dec 1960  
 3-60. (and SAUL, Louella Rankin) Enigmatic Cretaceous pelecypod genus Meekia [abs ] Geol Soc America Bull , v 71, no 12, pt 2, p 2072, Dec. 1960.
- PORTER, James L  
 1-60 Relating seismic time to geological datum [abs ] Am. Assoc Petroleum Geologists Bull., v 44, no 1, p 129-130, Jan 1960
- PORTER, Stephen Cummings  
 1-60. The surficial geology of the Wallingford quadrangle, with map Connecticut State Geol and Nat History Survey Quad Rept. 10, 42 p , illus incl. geol. map, 1960
- POSNER, Aaron Sidney  
 1-60. The nature of the inorganic phase in calcified tissues, in Sognaes, R F , ed., Calcification of biological systems--A symposium, Dec. 29, 1958, Washington, D. C. Am Assoc Adv Sci Pub 64, p 373-394 incl diagrams and tables, 1960, discussion with title, Carbonate in apatites, by D McConnell, and reply by A. S. Posner, Science, v 134, no. 3473, p 213-215, July 21, 1961
- POST, Austin S  
 1-60. The exceptional advances of the Muldrow, Black Rapids, and Susitna glaciers [Alaska] Jour Geophys Research, v. 65, no. 11, p 3703-3712 incl sketch maps, diagrams, and table, Nov 1960.  
 2-60 Sudden advance of the Muldrow glacier [Alaska] [abs ] Jour Geophys. Research, v 65, no 8, p 2518, Aug 1960
- POST, Edwin Vanhorn See GOTT, Garland Bayard 1-60
- POTHIER, O E  
 1-60 Western phosphate mining Mining Cong Jour , v 46, no 7, p. 49-52 incl illus , July 1960.
- POTTER, Donald B See ESPENSHADE, Gilbert Howry 1-60, NEW YORK STATE GEOL ASSOC 1-60
- POTTER, Loren David  
 1-60 (and ROWLEY, Joanne) Pollen rain and vegetation, San Augustin Plains, New Mexico Bot. Gaz , v. 122, no 1, p 1-25, illus , Sept. 1960
- POTTER, Paul Edwin See also ATHERTON, Elwood 1-60, SIEVER, Raymond 2-60  
 1-60 Pennsylvanian clastic sedimentation in the Illinois Basin [abs ] Geol Soc. America Bull , v 71, no 12, pt 2, p 1946, Dec. 1960
- POTTER, R A  
 1-60. (and HARRIS, Lawrence Alvin) The system CaO-BeO [abs ] Am. Ceramic Soc Bull , v 39, no 4, p 185, 187, Apr 1960
- POUGH, Fredrick Harvey  
 1-60. A field guide to rocks and minerals 3d ed , Boston, Mass , Houghton Mifflin Co , 349 p , 1960, originally published 1953
- POULIN, Ambrose O. See LEIGHTY, Robert D 1-60
- POWELL, William Jenner. See LaMOREAUX, Philip Elmer 3-60

## POWER

POWER, Walter Robert, Jr

- 1-60. Backset beds in the Coso formation, Inyo County, California [abs ]  
Geol. Soc America Bull , v. 71, no. 12, pt 2, p. 2023, Dec 1960.

POWERS, Howard Adorno See also LEWIS, R. Q 1-60, YOUNG, E J 1-60

- 1-60. Alkalic lava flow, with fluidity of basalt, in the Snake River Plain,  
Idaho Art 136 in U. S. Geol Survey Prof Paper 400-B, p B297 incl.  
table, 1960.

- 2-60 A distinctive chemical characteristic of Snake River basalts of Idaho  
Art. 137 in U. S Geol Survey Prof Paper 400-B, p B298 incl diagram,  
1960.

- 3-60. (and COATS, Robert Roy, and NELSON, Willis Howard) Geology  
and submarine physiography of Amchitka Island, Alaska U. S. Geol.  
Survey Bull 1028-P, p 521-554, illus. incl. geol. map, 1960.

PRATHER, R. W

- 1-60. Geology of gas occurrences in Paleozoic rocks of the Alberta plains,  
a Summary [abs ] Oil in Canada, v 12, no 29, p. 29-30, May 16, 1960

PRATT, Wallace Everette

- 1-60. Alexander Deussen (1882-1959) Am Assoc Petroleum Geologists  
Bull., v. 44, no 3, p 371-374 incl portrait, Mar. 1960.

PRAY, Lloyd Charles

- 1-60. Compaction in calcilutites [abs ] Geol. Soc America Bull , v 71,  
no 12, pt 2, p 1946, Dec 1960

PRECAMBRIAN

- 1-60 Lithium--useful metal has half of water's weight Precambrian, v 33,  
no. 8, p 37-39 incl. sketch maps, diagrams, and illus, Aug. 1960

- 2-60 Mapping Canada's bedrock Precambrian, v 33, no 9, p 8-15 incl.  
table and illus , Sept. 1960

PRENDERGAST, J. B

- 1-60. The use of the gravity meter as an exploration and development tool in  
iron ore prospecting [abs.] Canadian Mining and Metall. Bull , v. 53,  
no 575, p 194, Mar 1960

PRENTISS, David. See DORMAN, Henry James 1-60

PRESCOTT, Glenn Carleton, Jr

- 1-60. The geology of Maine and its relation to water supplies Maine Water  
Utilities Assoc. Jour , v. 36, no 5, p. 18-35, illus., Sept. 1960

PRESS, Frank See also GRIGGS, D T. 2-60, HEALY, J H 1-60, PAKISER,  
L C., Jr. 3-60, WHITE, J E 4-60

- 1-60. Crustal structure in the California-Nevada region Jour Geophys. Re-  
search, v 65, no 3, p. 1039-1051 incl. sketch map, diagrams, and tables,  
Mar 1960.

- 2-60 (and TAKEUCHI, Hitoshi) Note on the variational and homogeneous  
layer approximations for the computation of Rayleigh-wave dispersion  
Seismol. Soc America Bull., v 50, no. 1, p 81-85 incl diagram and  
tables, Jan 1960

- 3-60 Seismic wave propagation Am. Geophys Union Trans., v 41, no 2,  
p 150-151, June 1960

PRESSMAN, Albert Eli

- 1-60. Photogeology speeds up groundwork for oil hunters Oil and Gas  
Jour., v 58, no 37, p 162-166, 168 incl maps and section, Sept 12,  
1960

PREST, Victor Kent

- 1-60 Geology of the soils of Canada [abs ] Royal Soc Canada Minutes  
Proc., 3d ser , v. 54, App C, p. 37, 1960

PRESTON, Roger G. See ADAMS, W. M. 2-60

PREWITT, Charles Thompson

1-60 (and BUERGER, Martin Julian) Crystal structure of cahnite,  $\text{Ca}_2\text{-BASO}_4(\text{OH})_4$  [abs.] Geol Soc. America Bull , v 71, no 12, pt 2, p 1946-1947, Dec 1960

2-60. (and BUERGER, Martin Julian) The crystal structure of cahnite,  $\text{Ca}_2\text{BASO}_4(\text{OH})_4$  [abs ] Acta Cryst., v 13, pt 12, p 1007, Dec. 1960

PRICE, Charles E

1-60. Artificial recharge of a well tapping basalt aquifers, Walla Walla area, Washington Washington State Div Water Resources Supply Bull 7, 50 p , illus , 1960

PRICE, Paul Holland

1-60. Alan Hartman McClain (1899-1960) Am Assoc Petroleum Geologists Bull , v 44, no 9, p. 1582-1583 incl portrait, Sept 1960

PRICE, Raymond Alex

1-60. Lewis thrust sheet in the southeastern Cordillera of Canada [abs ] Geol. Soc America Bull., v. 71, no. 12, pt 2, p 1947, Dec 1960.

PRICE, William Evans, Jr

1-60 Relation of geologic source, depth of well, and topographic location to yield of wells in the Eastern Coal Field, Kentucky [abs ] Geol. Soc. America Bull , v 71, no 12, pt 2, p 1947-1948, Dec 1960

PRIDDY, Richard Randall

1-60 Madison County geology Mississippi State Geol Survey Bull 88, 123 p., illus incl geol. maps, 1960.

2-60 (and SMITH, Baxter L.) Recent sedimentation on Horn Island, Mississippi, in Cenozoic field trips Gulf Coast Assoc Geol. Soc., 10th Ann. Mtg , Oct. 19-22, 1960, Guidebook, p 5-8, illus., 1960.

PRIEN, Charles Henry

1-60 Oil shale, Chap 10 in Mineral resources of Colorado, 1st sequel Denver, Colorado Mineral Resources Board, p 443-461 incl sketch map and table, also geol. map, 1960.

PRIMAK, William Leo

1-60. A review of the gross structural effects of energetic atomic particles on vitreous and crystalline silica, in Symposium on defect structure of quartz and glassy silica Physics and Chemistry Solids, v. 13, nos. 3-4, p 279-286, June 1960.

PRITCHARD, Roy Lee See HOLLENSHEAD, Charles Thomas 1-60

PROBANDT, William Taylor

1-60 Reconnaissance investigation--Paradox Basin salt structures and Moab Valley, Utah Compass, v 37, no. 4, p. 250-268 incl sketch maps, diagram, and illus , May 1960

PROCTER, Richard Malcolm

1-60. Quantitative clay mineralogy of the Vanguard and Blairmore formations, Southwestern Saskatchewan [abs.] Dissert Abs., v 20, no. 12, p 4635, June 1960

PROCTOR, Paul Dean

1-60 Fringe-zone alteration in carbonate rocks, North Tintic mining district, Utah [abs ] Geol Soc. America Bull , v. 71, no 12, pt. 2, p 1948, Dec 1960, Econ Geology, v 55, no 6, p. 1341, Sept -Oct 1960.

PRODUCERS MONTHLY

1-60 Caterpillar perfects seismic analysis method to determine rippability velocity tables now complete Producers Monthly, v 24, no 4, p 26-27 incl. diagrams, Feb 1960

PROSTKA, Harold J See EUGSTER, Hans P 2-60

## PROTZMAN

PROTZMAN, Don L.

- 1-60. (and CARVER, J. A., and PITTMAN, E. D.) Oligocene marine-nonmarine relations, coastal Ventura basin, California [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p 1948-1949, Dec. 1960.

PROUTY, Chilton Eaton

- 1-60. Results of a geology curriculum and standards study, United States and Canadian schools [abs.] Geol. Soc. America Bull., v. 71, no 12, pt. 2, p. 1949, Dec 1960

PRUFER, Olaf H.

- 1-60 Survey of Ohio fluted points, No. 3 Cleveland, Ohio, Cleveland Mus. Nat History, p 1-13 incl. sketch map and illus , Nov. 1960

PRUSOK, Rudi A.

- 1-60. (and EGE, John R.) A simple stereophotographic field method of rock outcrop description for the geologist Photogramm. Eng., v 26, no. 1, p 98-100 incl illus , Mar. 1960.

PRUSS, Donald E.

- 1-60. (and FREEMAN, Gerald W ) Quantitative geophysics applied to metallic-mineral-property (e g iron-ore) evaluation [abs.] Geol Soc. America Bull., v. 71, no. 12, pt. 2, p 1949, Dec 1960, Econ. Geology, v 55, no 6, p. 1335, Sept.-Oct. 1960

PRYOR, Wayne Arthur

- 1-60. Cretaceous sedimentation in Upper Mississippi Embayment Am. Assoc. Petroleum Geologists Bull., v 44, no. 9, p 1473-1504 incl index and sketch maps, sections, diagrams, and tables, Sept 1960, correction, no 12, p. 1939, Dec. 1960.

- 2-60 Sand trends and paleoslope in Mississippi embayment and Illinois basin [abs.] Am Assoc. Petroleum Geologists Bull., v. 44, no 7, p 1255, July 1960.

PRYOR, William Thurman. See BELCHER, Donald Jenks 1-60

PRYSIAZNIUK, R. Y. See HEYDING, R. D. 1-60

PUFFETT, Willard Penry. See WEIR, Gordon Whitney 1-60, 5-60

PUGH, Derek C.

- 1-60. The subsurface Gething and Bluesky formations of northeastern British Columbia Canada Geol. Survey Paper 60-1, 20 p., illus , 1960.

PUGH, Emerson

- 1-60 Glaciers--The rockhound's benefactors Earth Sci., v 13, no. 5, p. 175-177, 188 incl. illus., Oct. 1960

PULSE, Richard R

- 1-60 (and SWEET, Walter Clarence) The American Upper Ordovician standard, [Pt.] 3, Conodonts from the Fairview and McMillan formations of Ohio, Kentucky and Indiana Jour. Paleontology, v 34, no 2, p 237-264 incl index map, diagrams, table, and illus , Mar 1960.

PURCELL, Tom E.

- 1-60. The Mesaverde formation of the north and central Powder River basin, Wyoming Shale Shaker, v. 11, no. 4, p. 2-22 incl index and sketch maps, sections, correlation chart, and discussion by Clark Millison, Dec. 1960.

PURDOM, William Berlin

- 1-60. Geology of La Minera Occidental Bosch, S A., and the Coto Francisco, Pinar del Rio, Cuba [abs.] Dissert. Abs , v. 21, no 4, p 851-852, Oct 1960.

PURDUE UNIVERSITY, Joint Highway Research Project

- 1-60 Engineering soils map, Kosciusko County, Indiana Lafayette, Ind., scale about 1 in. to 1 mi., with profiles, 1960.

PURDY, Edward George. See also NEWELL, N D. 2-60

- 1-60. Recent calcium carbonate facies of the Great Bahama Bank [abs ] Dissert Abs., v. 21, no. 4, p 852, Oct 1960.

PURI, Harbans Singh. See also SOUTHEASTERN GEOL SOC. 1-60

- 1-60. (and VERNON, Robert Orion) Notes on the surficial geology of central peninsular Florida, in Late Cenozoic stratigraphy and sedimentation of central Florida Southeastern Geol Soc , 9th Field Trip, May 1960, Guide-book, p. 1-31 incl index map, section and chart, diagram, 1960
- 2-60 Recent Ostracoda from the west coast of Florida Gulf Coast Assoc. Geol. Socs Trans , v. 10, p 107-149 incl index map, table, and illus., 1960

PUSEY, Richard D

- 1-60 Effect of fault-block structures on sedimentary history of Coastal Plain in North Carolina [abs ] Am. Assoc Petroleum Geologists Bull , v. 44, no 7, p 1255, July 1960.
- 2-60 Geology and ground water in the Goldsboro area, North Carolina North Carolina Dept Water Resources Ground-Water Bull 2, 77 p incl. geol and index maps, cross section, diagrams, tables, and illus., 1960.

PUTNAM, George W

- 1-60. (and BURNHAM, Clifford Wayne) Distribution of minor elements in some igneous rocks of central and northwestern Arizona [abs ] Geol. Soc America Bull , v 71, no 12, pt 2, p. 1950, Dec 1960.

PUTNAM, John Alpheus

- 1-60. In memoriam--[Lester Charles Uren, 1888-1960] Jour Petroleum Technology, v 12, no 10, p 62, Oct 1960

PUTNAM, William Clement, 1908-1963

- 1-60. Faulting and Pleistocene glaciation in the east-central Sierra Nevada of California, U S A Internat Geol Cong , 21st, Copenhagen, 1960, Rept , pt 21, p 270-274 incl. geol sketch map, section, and chart, 1960.
- 2-60 Relation of the McGee glacial stage to the late Cenozoic history of the Sierra Nevada [abs.] Geol. Soc. America Bull., v. 71, no 12, pt 2, p 1950-1951, Dec. 1960
- 3-60. Origin of Rock Creek and Owens River Gorges, Mono County, California California Univ Pubs Geol Sci , v. 34, no 5, p 221-279, illus incl. geol map, Mar. 7, 1960.
- 4-60. (and others) Natural coastal environments of the world Los Angeles, Calif., 140 p., illus , 1960 (Prepared by U S Office Naval Research and Univ. California )

PYE, Edgar George

- 1-60. Geology of the Manitouwadge area. Ontario Dept. Mines Ann. Rept. 1957, v. 66, pt 8, 114 p., illus incl geol maps, 1960
- 2-60 (and others) Big Duck Lake area, District of Thunder Bay Ontario Dept Mines Prelim Map P 87, geol map, scale 1 in. to 1/4 mi., 1960

PYE, Willard Dickison See also THOMAS, G C. 1-60

- 1-60. Techniques of porosity, permeability and insoluble residue analysis of carbonates and their economic significance--As based on a study of the Ordovician and Silurian section of the Williston Basin Arizona Geol Soc. Digest, v. 3, p 103-107, Mar 1960
- 2-60. Preliminary petrographic study of some Cretaceous coals in Arizona Arizona Geol Soc Digest, v 3, p 109-110, Mar 1960

PYEATT, Bob See OZARK MOUNTAIN GEM and MINERAL SOC. 1-60

PYKE, Murray William

- 1-60 The Attitit Lake Area, (West Half), in Cheesman, R L , Summary re-

## PYKE

port of geological surveys conducted in the Precambrian area of Saskatchewan, 1960 Regina, Saskatchewan Dept. Mineral Resources, Mines Br., Geology Div., p 2-3 [1960].

## PYLE, Howard Carter

1-60. A philosophy for exploration Shale Shaker, v 11, no. 1, p. 9-12, Sept. 1960.

## QUEBEC DEPARTMENT of MINES

1-60. Annotated list of publications of the Department of Mines of the Province of Quebec, 1883-1960 Quebec, Quebec Dept. Mines, 116 p, 1960

## QUIGLEY, Walter Donald

1-60. Bar-X, San Arroyo, Westwater Creek, gas fields, Colorado [abs.] Am Assoc. Petroleum Geologists Rocky Mtn Sec. Geol. Record 1960, p. 161 [1960]

2-60. Bar-X, San Arroyo, Westwater Creek gas fields, Colorado [abs.] Am. Assoc Petroleum Geologists Bull., v 44, no. 6, p 960, June 1960.

## QUINLAN, James Francis, Jr.

1-60. Monocrystalline speleothems Earth Sci, v. 13, no. 5, p. 189, Oct. 1960

## QUINN, Alonzo Wallace. See OLIVER, William Albert, Jr 5-60

## QUINN, Harold Arthur See CANADA GEOL. SURVEY 20-60, 43-60

## QUINN, James Harrison

1-60. Correlation of Pennsylvanian strata on the basis of northwestern Arkansas goniatites [abs.] Geol. Soc America Bull., v. 71, no. 12, pt. 2, p. 1951, Dec 1960.

## QUINN, John C. See MITCHELL, John 1-60, 2-60

## QUIRKE, Terence T., Jr

1-60. (and GOLDICH, Samuel S., and KRUEGER, Harold W.) Composition and age of the Temiscamie iron-formation, Mistassini Territory, Quebec, Canada. Econ. Geology, v. 55, no. 2, p 311-326 incl. index and geol. sketch maps and tables, Mar -Apr. 1960

2-60. Geology of the Lake Albanel iron range, Mistassini Territory, Quebec [abs.] Canadian Mining and Metall. Bull, v 53, no 575, p 194, Mar. 1960.

## QURESHY, Mohammed Naseeb

1-60. Thickness of the earth's crust as related to tectonism, vulcanism, and mineralization in Colorado [abs.] Geol Soc. America Bull., v 71, no. 12, pt 2, p. 1951, Dec. 1960.

2-60. Airy-Heiskanen anomaly map of Colorado, in Rocky Mtn. Assoc. Geologists, Guide to the geology of Colorado Denver, p. 8-9 incl. anomaly map, 1960.

## RAASCH, Gilbert Oscar

1-60. (and WERFORD [Norford], B. Seeley, and WILSON, Derek William Raymond) The Silurian Aulacopleura socialis fauna in the Yukon Territory [abs.] Oil in Canada, v. 12, no. 16, p. 34, Feb 15, 1960.

## RABBEN, Ellis L. See CHENEY, Theodore Albert 1-60

## RABBITT, John Charles. See HEINRICH, Eberhardt William 7-60

## RADER, E K.

1-60. (and GRIFFIN, V. S.) A petrographic study of some dikes in a quarry in Bluegrass Valley, Highland County, Virginia [abs.] Virginia Jour. Sci., v. 11, no. 4, p 213, Sept. 1960

- RADER, Lewis Franklin, Jr.  
1-60 (and SWADLEY, W. C , and LIPP, Henry H., and HUFFMAN, Claude, Jr ) Determination of zinc in basalts and other rocks Art 216 in U S. Geol. Survey Prof. Paper 400-B, p. B477-B480 incl diagram and tables, 1960.
- RADFORTH, Norman William  
1-60. (and TERASMAE, Jaan) A palynological study relating to the Pleistocene Toronto formation [Ontario] Canadian Jour Botany, v. 38, no. 4, p. 571-580 incl table, July 1960.  
2-60. Organic terrain [abs.] Royal Soc. Canada Minutes Proc., 3d ser., v. 54, App. C, p. 39-40, 1960  
3-60. On some fossil plants from the Minto Coalfield, New Brunswick Senckenbergiana Lethaea (Frankfurt am Main, Germany), Band 41, Nr 1-6, p. 101-119, illus , Aug. 29, 1960.
- RADOSLOVICH, E. W  
1-60. The structure of muscovite,  $KAl_2(Si_3Al)O_{10}(OH)_2$  Acta Cryst., v. 13, pt 11, p. 919-932 incl. diagrams and tables, Nov. 1960.
- RADZIKOWSKI, Henry A.  
1-60. Rock and earth in the highway program, in Tanner, W. F , ed , Symposium on highway engineering geology, 11th Ann., Feb. 1960, Proc , p. 109-119, Sept 1960
- RAGAN, Wendell J.  
1-60. Brachiopoda and Mollusca from the Burgner formation in southwest Missouri [abs.]. Dissert. Abs., v. 20, no 7, p. 2758, Jan 1960.
- RAHM, David A.  
1-60. An integrated final examination for laboratories in introductory geology Jour. Geol. Education, v. 8, no 2, p. 49-53, fall 1960.
- RAINS, T C.  
1-60. (and HOUSE, Henry Pierce, and MENIS, Oscar) Flamespectra of Sc, Y and rare-earth elements Anal. Chim Acta (Amsterdam), v. 22, no 4, p 315-327 incl. diagrams and tables, Apr. 1960.
- RAINWATER, Edward Harriman  
1-60. Paleocene of the Gulf Coastal Plain of the United States of America- Internat Geol. Cong , 21st, Copenhagen, 1960, Rept , pt 5, p. 97-116 incl sketch maps, sections, and chart, 1960  
2-60 Stratigraphy and its role in the future exploration for oil and gas in the Gulf Coast Gulf Coast Assoc. Geol Socs. Trans., v. 10, p 33-75 incl. sketch maps, sections, charts, tables, and illus., sections, 1960
- RAITT, Russell Watson  
1-60. Marine seismic studies. Am. Geophys. Union Trans., v. 41, no. 2, p. 269-271, June 1960.
- RAKESTRAW, N W See BIEN, George Sung-Nien 1-60
- RALL, Raymond Wallace  
1-60. Cisco series of the Eastern shelf and Midland basin [Texas], in A study of the Cisco facies near Breckenridge, Texas Soc. Econ. Paleontologists and Mineralogists Permian Basin Chap , Ann Field Trip, Apr. 1960, [Guide-book] p. 64-66, 1960.
- RAMBERG, Hans  
1-60. Relationships between length of arc and thickness of pygmatically folded veins Am. Jour. Sci., v. 258, no. 1, p 36-46 incl diagrams and illus., Jan. 1960.  
2-60. Energy transfer from differentiation in a differential pressure system under non-equilibrium conditions--A discussion of "partial quantities"

## RAMBERG

Jour. Geology, v. 68, no. 1, p. 110-113, Jan 1960, reply by author, K. O. Bennington, p. 114, Jan 1960. (Discussion of paper by K. O. Bennington, v. 67, no. 2, p. 171-197, Mar. 1959)

## RAMP, Lenin

- 1-60. Gold placer mining in southwestern Oregon Ore.-Bin, v. 22, no. 8, p. 75-79 incl. sketch map, diagram, and tables, Aug. 1960
- 2-60. The Quartz Mountain silica deposit, Oregon Ore.-Bin, v. 22, no. 11, p. 109-114 incl. geol. sketch map and diagram, Nov. 1960.

## RAMSDELL, Lewis R

- 1-60. Mineralogy of salt, Chap. 2 of Sodium chloride--The production and properties of salt and brine, Kaufmann, D. W., ed. New York, N. Y., Reinhold Publishing Corp., p. 13-21, illus., 1960

## RANDALL, Allan D

- 1-60. (and BIERSENK, William H., and HAHN, Glenn Walter) Ground-water map of the Voluntown quadrangle, Connecticut-Rhode Island, showing water-bearing formations and related ground-water data Rhode Island Water Resources Coordinating Board Ground-Water Map GWM 13, scale 1:24,000 (1 in. to 2,000 ft.), with sections, 1960.

## RANDALL, Arthur Guy

- 1-60. Catalog of formation names for Overthrust Belt and vicinity, western Wyoming, in Overthrust belt of southwestern Wyoming and adjacent areas. Wyoming Geol. Assoc., 15th Ann. Field Conf., 1960, Guidebook, p. 169-177 incl. diagrams, 1960.

## RANDOLPH, James Raymond See REMSON, Irwin 1-60

## RANKIN, Douglas W

- 1-60. Paleogeographic implications of deposits of hot ash flows [Maine] Internat. Geol. Cong., 21st, Copenhagen, 1960, Rept., pt. 12, p. 19-34 incl. index and geol. sketch maps and tables, 1960

## RAPP, George Robert, Jr

- 1-60. Name clinozoisite should be dropped [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 2039, Dec. 1960.
- 2-60. Geochemistry and mineralogy of the zoisite-epidote group [abs.] Dissert. Abs., v. 21, no. 1, p. 203-204, July 1960.

## RAPSON, June E. See McGUGAN, Alan 3-60

## RASCOE, Bailey, Jr

- 1-60. Pennsylvanian and Permian regional stratigraphy of western Mid-Continent [abs.] Am. Assoc. Petroleum Geologists Bull., v. 44, no. 1, p. 130, Jan. 1960.

## RASE, Daniel Edward. See BAUSCHMANN, Walter W. 1-60, DULIN, F. H. 1-60

## RASMUSSEN, N. C. See CANTWELL, Thomas 2-60

## RASMUSSEN, William Charles

- 1-60. (and WILKENS, Richard A., and BEALL, Robert MacDonald, and others) Water resources of Sussex County, Delaware, with a section on salt-water encroachment at Lewes Delaware Geol. Survey Bull. 8, 228 p., incl. index and sketch maps, diagrams, and tables, Dec. 1960

## RATCLIFFE, E. H.

- 1-60. The thermal conductivities of ocean sediments Jour. Geophys. Research, v. 65, no. 5, p. 1535-1541 incl. diagrams, table, and illus., May 1960.

## RATCLIFFE, John H. See also LUNDBERG, H. T. F. 1-60

- 1-60. The Boston township iron range [Ontario] [abs.] Canadian Mining and Metall. Bull., v. 53, no. 575, p. 194, Mar. 1960



RATTE, James Clifford See STEVEN, Thomas August 1-60, 2-60

RATTIGAN, J. H.

- 1-60. Residual characteristics of crystallates genetically associated with ore deposits Econ. Geology, v. 55, no. 6, p. 1272-1284, Sept.-Oct. 1960.

RAU, John Llewellyn

- 1-60. Stratigraphy of the Three Forks shale in southwestern Montana [abs.]. Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1952, Dec. 1960

RAUP, David Malcolm

- 1-60. Ontogenetic variation in the crystallography of echinoid calcite Jour. Paleontology, v. 34, no. 5, p. 1041-1050 incl. diagrams and table, Sept. 1960.
- 2-60. Calcite crystallography and the study of echinoid phylogeny [abs.]. Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1952, Dec. 1960

RAW, Frank

- 1-60. Outline of a theory of origin of the vertebrate. Jour. Paleontology, v. 34, no. 3, p. 497-539 incl. diagrams, table, and illus., May 1960.

RAWSON, D. E.

- 1-60. Drilling into molten lava in the Kilauea Iki volcanic crater, Hawaii Nature (London), v. 188, no. 4754, p. 930-931, illus., Dec. 10, 1960.

RAY, Clayton E.

- 1-60. *Trichecodon huxleyi* (mammalia--Odobenidae) in the Pleistocene of southeastern United States Harvard Coll. Mus. Comp. Zoology Bull., v. 122, no. 3, p. 129-145, illus., Mar. 1960

RAY, Louis Lamy

- 1-60. Significance of loess deposits along the Ohio River valley Art. 92 in U. S. Geol. Survey Prof. Paper 400-B, p. B211, 1960.
- 2-60. Relation of the profile of weathering to mechanical analyses of loess [abs.]. Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1953, Dec. 1960

RAY, Richard Godfrey

- 1-60. (and FISCHER, William August) Quantitative photography--A geologic research tool Photogramm. Eng., v. 26, no. 1, p. 143-150 incl. diagrams and illus., Mar. 1960.
- 2-60. Aerial photographs in geologic interpretation and mapping U.S. Geol. Survey Prof. Paper 373, 230 p., illus., 1960

RAY, Satyabrata. See DODD, Charles Gardner 1-60, HAM, William Eugene 6-60

READ, Charles Brian. See also BALTZ, Elmer Harold, Jr. 1-60, NEW MEX. GEOL. SOC. 1-60

- 1-60. (and MAMAY, Sergius Harry) Upper Paleozoic floral zones of the United States Art. 176 in U. S. Geol. Survey Prof. Paper 400-B, p. B381-B383 incl. tables, 1960.

READ, Peter Burland

- 1-60. Geology of the Fraser Valley from Hope to Emory Creek, British Columbia [abs.]. Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 2072, Dec. 1960
- 2-60. The geology of the Fraser Valley between Hope and Emory Creek, British Columbia [abs.]. Canadian Mining Jour., v. 81, no. 11, p. 114, Nov. 1960.

READ, William Franklin

- 1-60. The Saxeville meteorite Wisconsin Acad. Sci. Arts, and Letters Trans. 1960, v. 49, p. 191-198, illus., Dec. 29, 1960.

READE, Ernest H., Jr.

- 1-60. The geology of a portion of Newton and Walton Counties, Georgia [abs.]. Georgia Mineral Newsletter, v. 13, no. 2, p. 107, summer 1960

## READE

READE, Harold Leslie, Jr. See KNOWLES, Doyle Blewer 1-60

REAGAN, Marion Allen, Jr

- 1-60. (and FOUST, Roscoe Thornton, Jr ) Discovery and development of Person field, Karnes County, Texas [abs.] Am Assoc Petroleum Geologists Bull , v. 44, no 9, p 1603, Sept. 1960, Houston Geol. Soc. Bull., v 2, no 10, unpagcd, illus , June 1960

REAVELY, George Harold

- 1-60. The Sylvania Sandstone in southwestern Ontario [abs.] Canadian Mining and Metall Bull., v. 53, no. 575, p. 194, Mar. 1960

RECKE, W. See MUELLER, George 1-60

RECTOR, Michael Robert

- 1-60 Walnut Grove gas field shows how management thinking changes in California Oil and Gas Jour., v 58, no. 52, p. 197, 199-200 incl. sketch and index maps and section, Dec. 26, 1960

REDDEN, Jack Allison. See also NORTON, J J 2-60

- 1-60. Rocks, minerals, and ores of the Piney River-Roseland district, Virginia Mineral Industries Jour , v 7, no 2, p 6-7, June 1960

REED, Charles A. See also TURNBULL, W D. 2-60

- 1-60. Polyphyletic or monophyletic ancestry of mammals, or--what is a class? Evolution, v. 14, no. 3, p 314-332, Sept 1960

REED, Edwin William. See MOGG, Joe Luther 1-60

REED, Eugene Clifton

- 1-60 (and DREESZEN, Vincent Harold) Evidence of glacial till of Illinoian age in northeast Nebraska [abs.] Nebraska Acad Sci Proc , 70th Ann. Mtg , p. 16 [1960].

REED, George W., Jr See ANDERS, Edward 2-60, TILTON, George Robert 3-60

REED, Jack W. See VORTMAN, Luke J 1-60

REED, John Calvin, Jr See also CAROLINA GEOL SOC 1-60

- 1-60. (and BRYANT, Bruce Hazelton) A major topographic lineament in western North Carolina and its possible structural significance Art. 86 in U S. Geol. Survey Prof. Paper 400-B, p.B195-B197 incl geol. map, 1960.  
2-60. (and BRYANT, Bruce Hazelton) Lower Cambrian and late Pre-cambrian rocks in the Grandfather Mountain window, North Carolina Washington Acad. Sci Jour., v. 50, no. 7, p. 3-5, Nov 1960

REED, Juliet C

- 1-60 Heavy minerals of the Englishtown (Cretaceous) formation of New Jersey Pennsylvania Acad. Sci. Proc , v 34, p. 147-154, illus., 1960.

REED, Katherine Milmine

- 1-60. Insectivores of the Middle Miocene Split Rock local fauna, Wyoming Breviora, no. 116, 15 p., illus , Jan. 6, 1960

REED, William Maxwell

- 1-60. (Brandwein, P. F., editor) The earth for Sam Revised, ed., New York, N. Y , Harcourt, Brace and Co , 236 p , illus., 1960, originally published 1930.

REEDER, Harold Oliver

- 1-60. (and others) Ground-water levels in New Mexico, 1956 New Mexico State Engineer Tech. Rept. 19, 251 p incl. index and sketch maps, diagrams, and tables, 1960.

REEDER, William Glase

- 1-60. Two new rodent genera from the Oligocene White River formation (family Heteromyidae) Fieldiana Geology, v. 10, no. 35, p. 511-524, illus., July 22, 1960
- 2-60 A new rodent genus (family Heteromyidae) from the Tick Canyon formation of California Southern California Acad. Sci. Bull. Sept.-Dec. 1960, v. 59, pt. 3, p. 121-132, illus., Dec. 31, 1960

REEKIE, Isabel M.

- 1-60. Big Rock [Alberta] Canadian Audubon, v. 22, no. 2, p. 53 incl. illus., Mar.-Apr. 1960.

REESE, Robert M. See DIBELER, Vernon H. 1-60

REESIDE, John B., Jr., 1889-1958 See also FISHER, D. J. 4-60

- 1-60 (and COBBAN, William A.) Studies of the Mowry shale (Cretaceous) and contemporary formations in the United States and Canada U. S. Geol. Survey Prof. Paper 355, 126 p. incl. sketch maps, sections, diagrams, tables, and illus., also sections, correlation chart, and illus., 1960.

REEVES, Corwin C., Jr.

- 1-60 (and MOUNT, J. Russell) Possibility of hydrocarbon accumulations along northern flank of Marietta syncline, Love County, Oklahoma Am. Assoc. Petroleum Geologists Bull., v. 4, no. 1, p. 72-82 incl. index maps, sections, and tables, Jan. 1960
- 2-60 A closer look at Love County [Oklahoma]--[Pt. 1], Oklahoma's Love County invites new exploration--Pt. 2 Oil and Gas Jour., v. 58, no. 1, p. 116, 118, 120-121 incl. sketch map, sections, and stratigraphic chart, Jan. 4, 1960, no. 2, p. 124, 126, 129-130 incl. isopach map, sections, and table, Jan. 11, 1960.
- 3-60 How oil came to be Compass, v. 37, no. 3, p. 213-219, Mar. 1960

REGIS, Andrew J. See SAND, Leonard B. 1-60

REGNIER, Jerome P. M.

- 1-60 Cenozoic geology in the vicinity of Carlin, Nevada Geol. Soc. America Bull., v. 71, no. 8, p. 1189-1210 incl. diagrams, sections, and table, also geol. map and cross sections and illus., Aug. 1960

REICHERT, Stanley Orville

- 1-60. Case-history studies of how geology and hydrology influence nuclear-reactor site locations in Florida [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 2023-2024, Dec. 1960
- 2-60. Florida minerals for construction Florida Devel. Comm. Indus. Div. Business Research Rept. 120, 22 p. incl. geol. map, tables, and chart, Aug. 1960
- 3-60 Case history studies of how geology and hydrology influence nuclear reactor site locations in Florida Southeastern Geology, v. 2, no. 1, p. 23-41, illus. incl. geol. sketch maps, Aug. 1960.

REICHERT, William H.

- 1-60 Bibliography and index of the geology and mineral resources of Washington, 1937-56 Washington State Div. Mines and Geology Bull. 46, 721 p., 1960.

REID, A. M.

- 1-60 Preliminary report on the geology of Mount Megantic, Compton and Frontenac electoral districts Quebec Dept. Mines Mineral Deposits Br. Prelim. Rept. 433, 6 p., geol. map, 1960, also French ed.

REID, B. W. See WENGER, Welton J. 1-60

REID, Eugene Fisher

- 1-60. Why explore in California's Sacramento Valley? Oil and Gas Jour., v. 58, no. 51, p. 74-77 incl. sketch maps, sections, and diagrams, Dec. 19, 1960.

## REID

REID, Rolland R.

- 1-60. Geology and heavy-mineral content of placer deposits in the Elk City region, Idaho [abs.]. Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1953-1954, Dec. 1960, Econ. Geology, v. 55, no. 6, p. 1325, Sept.-Oct. 1960.
- 2-60. Crystalline rocks of the northern Tobacco Root Mountains, Madison County, Montana [abs.]. Dissert. Abs., v. 20, no. 10, p. 4079-4080, Apr. 1960.
- 3-60. Placer deposits of the Elk City region Idaho Bur. Mines and Geology Pamph. 121, 26 p., illus. incl. geol. map, July 1960.

REILLY, P. T.

- 1-60. Aerial discoveries in the Grand Canyon [Arizona] Plateau, v. 32, no. 3, p. 68-72, illus., Jan. 1960.

REISER, Ralph

- 1-60. (and TASCH, Paul) Investigation of the viability of osmophile bacteria of great geological age Kansas Acad. Sci. Trans., v. 63, no. 1, p. 31-34, spring 1960.

REITAN, Paul H.

- 1-60. The earth's volume change and its significance for orogenesis Jour. Geology, v. 68, no. 6, p. 678-680 incl. table, Nov. 1960.

REMICK, Jerome Hosmer

- 1-60. Exploration of the Harricana-Turgeon area, western Quebec [abs.]. Canadian Mining Jour., v. 81, no. 4, p. 95, Apr. 1960.

REMINGTON, D. B. See CHARLESWORTH, Henry Alexander Kaye 2-60

REMINGTON, Edward Wade See BALSLEY, James Robinson, Jr. 2-60

REMSON, Irwin

- 1-60. (and RANDOLPH, James Raymond, and BARKSDALE, Henry Compton) The zone of aeration and ground-water recharge in sandy sediments at Seabrook, New Jersey Soil Sci., v. 89, no. 3, p. 145-156 incl. diagrams and tables, Mar. 1960.

RENTON, John J.

- 1-60. Crystal growth as a factor in the weathering of sandstone [abs.]. West Virginia Acad. Sci. Proc. 1959, v. 31, p. 54-55, Dec. 1960.

RETTGER, Robert Ernest

- 1-60. Herbert John Weeks (1897-1960) Am. Assoc. Petroleum Geologists Bull., v. 44, no. 11, p. 1835-1837 incl. portrait, Nov. 1960.

RETTIG, Shirley Louise. See MAGIN, George B., Jr. 1-60

REVELLE, Roger Randall Dougan. See COWEN, Robert C. 1-60

REVES, William Dickenson

- 1-60. An X-ray study of two Florida land pebble phosphate samples, in Late Cenozoic stratigraphy and sedimentation of central Florida South-eastern Geol. Soc., 9th Field Trip, May 1960, Guidebook, p. 50-63 incl. tables, 1960.

REX, Robert Walter

- 1-60. (and CHOWN, R. G.) Planchet press and accessories for mounting X-ray powder diffraction samples Am. Mineralogist, v. 45, nos. 11-12, p. 1280-1282 incl. illus., Nov.-Dec. 1960.
- 2-60. Electron paramagnetic resonance studies of the organic geochemistry of stable free radicals [abs.]. Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1954, Dec. 1960.

REXIN, Elmer E.

- 1-60. A well water seismometer [Wisconsin] Earth Sci., v. 13, no. 1, p. 15-18, 29 incl. illus., Feb. 1960.

## REXROAD, Carl Buckner

- 1-60. (and CLARKE, Charles Edward) Conodonts from the Glen Dean Formation of Kentucky and equivalent formations of Virginia and West Virginia Jour. Paleontology, v 34, no 6, p 1202-1206 incl. index map and table, illus., Nov. 1960.

## REYNOLDS, C. H.

- 1-60. (and KRAVIG, Clarence N., and BAILEY, Jack H.) Panel discussion of underground mining in poorly consolidated formations Mines Mag., v. 50, no 7, p. 25-29 incl. illus., July 1960.

## REYNOLDS, John Hamilton

- 1-60. I-Xe dating of meteorites Jour Geophys Research, v 65, no. 11, p 3843-3846 incl. diagram and tables, Nov 1960.  
 2-60 Determination of the age of the elements Phys Rev Letters, v. 4, no 1, p. 8-10, illus., Jan. 1, 1960.  
 3-60. The age of the elements in the solar system Sci Am., v. 203, no. 5, p 171-174, 176, 178, 180, 182 incl. diagrams and illus., Nov 1960.

REYNOLDS, Robert Coltart, Jr. See FREDERICKSON, Arman Frederick 2-60, 3-60

## REYNOLDS, Stephen Edward

- 1-60. 24th biennial report of the State Engineer of New Mexico New Mexico State Engineer, 24th Bienn. Rept. 1958-60, 190 p., illus., [1960].

## REYNOLDS, Tom D.

- 1-60. (and GLOYNA, Earnest Frederick) Reactor fuel waste disposal project--Permeability of rock salt and creep of underground salt cavities--Final report U. S. Atomic Energy Comm. Rept. TID-12383, 121 p incl. tables, diagrams, and illus., Dec. 30, 1960

REZAK, Richard See LOGAN, B. W. 1-60

## RHOADS, Donald C.

- 1-60. Hydrodynamics of the shell and orientation as possible criterion to the ecology of Nudirostra rockymontanum (Marcou) Compass, v 37, no. 3, p. 193-197 incl. illus., Mar. 1960.

RHODEHAMEL, Edward Charles. See CARLSTON, Charles William 1-60RHODES, Howard S. See THOMAS, G. E. 3-60RHODES, Mary Louise See ADAMS, John Emery 1-60

## RIBBE, Paul H.

- 1-60 An X-ray and optical investigation of the peristerite plagioclases Am. Mineralogist, v. 45, nos. 5-6, p 626-644 incl. diagrams, tables, and illus., May-June 1960.  
 2-60. (and VanCOTT, Harrison C.) Unmixing in peristerite plagioclases observed by X-ray and microscopic techniques [abs.] Canadian Mining and Metall. Bull., v. 53, no. 575, p 200, Mar. 1960.

RICE, Harington Molesworth Anthony See CANADA GEOL. SURVEY 1-60, 41-60RICE, Robert Vernon See MASER, Morton 1-60

## RICE, Salem J

- 1-60. Tourmalinized Franciscan sediments at Mt. Tamalpais, Marin County, California [abs.] Geol Soc America Bull., v. 71, no. 12, pt. 2, p 2073, Dec 1960.

## RICE, William M.

- 1-60. The origin and mining of rock salt deposits in Canada [abs.] Canadian Mining and Metall. Bull., v. 53, no. 575, p. 195, Mar 1960

## **RICH**

**RICH, A. D**

1-60. Bleaching clay, in Am. Inst Mining, Metall, and Petroleum Engineers, Industrial minerals and rocks, p. 93-101 incl. diagrams and tables, 1960.

**RICH, Charles Irvin**

1-60. (and THOMAS, Gerald Waylett) The clay fraction of soils, [Chap 1] in V. 12 of Advances in agronomy, Norman, A D, ed New York, N Y, Academic Press, p. 1-39, 1960.

**RICH, Ernest I** See BROWN, Robert David, Jr 1-60

**RICH, Mark**

1-60. Chaetetes in the BirdSpring formation near Lee Canyon, Clark County, Nevada Jour Paleontology, v 34, no. 4, p. 761-762, July 1960

2-60. Stratigraphic section and fusulinids of the Bird Spring formation near Lee Canyon, Clark County, Nevada [abs.] Geol Soc. America Bull, v 71, no 12, pt. 2, p. 2039, Dec. 1960.

**RICHARD, B. H.**

1-60. Conjugate quartz veins in the Lynchburg gneiss near Fancy Gap, Carroll County, Virginia Southeastern Geology, v 2, no. 2, p 127-132, illus., Nov 1960.

**RICHARD, Kenyon E**

1-60. (and COURTRIGHT, James H) Some Cretaceous-Tertiary relationships in southeastern Arizona and New Mexico Arizona Geol Soc. Digest, v. 3, p 1-7 incl index map and correlation chart, Mar 1960.

**RICHARDS, Adrian Frank**

1-60. Rates of marine erosion of tephra and lava at Isla San Benedicto, Mexico Internat. Geol Cong, 21st, Copenhagen, 1960, Rept, pt. 10, p 59-64 incl. sketch maps and illus, 1960.

**RICHARDS, Horace Gardiner**

1-60 Correlation of Pleistocene shore lines of North America with those of Europe Internat. Geol Cong, 21st, Copenhagen, 1960, Rept, pt 4, p 58-61, 1960

2-60 The dating of the "Subway Tree" of Philadelphia Pennsylvania Acad. Sci Proc, v. 34, p. 107-108, 1960

3-60. (and HOPKINS, Arthur H.) Oligocene fossils from the Old Bolton Phosphate Mine near Charleston, South Carolina South Carolina State Devel. Board Div. Geology Geol. Notes, v 4, no 3, p 19-24, illus., May-June 1960

**RICHARDS, J. Howard**

1-60 Land types in the Precambrian Shield area of southern Ontario Canada Dept Mines and Tech Surveys Geog. Br Geog Bull. 13, p. 54-72, illus, 1959 [1960].

**RICHARDS, Leverett G.**

1-60. Ice age coming?--The story of glaciers, bergs, and ice caps New York, N Y, John Day Co, 128 p, illus., 1960

**RICHARDS, Norval Richard**

1-60 Soils of Southern Ontario [abs.] Royal Soc Canada Minutes Proc., 3d ser, v. 54, App C, p. 40, 1960

**RICHARDS, Terence Charles**

1-60. Wide angle reflections and their application to finding limestone structures in the foothills of Western Canada Geophysics, v 25, no. 2, p. 385-407 incl. geol. sketch map, section, diagrams, and table, Apr 1960

**RICHARDSON, Everett Vern.** See SIMONS, Daryl Baldwin 1-60, VANONI, Vito August 1-60, 2-60

**RICHARDSON, K A.** See ADAMS, J.A.S. 1-60, 2-60

**RICHMOND, Gerald Martin**

- 1-60. Correlation of alpine and continental glacial deposits of Glacier National Park and adjacent High Plains, Montana. Art. 98 in U. S. Geol. Survey Prof. Paper 400-B, p. B223-B224, 1960
- 2-60. (and HAMILTON, Warren Bell) The late Quaternary age of obsidian-rhyolite flows in the western part of Yellowstone National Park, Wyoming. Art. 99 in U. S. Geol. Survey Prof. Paper 400-B, p. B224-B225 incl. sketch map and sections, 1960.
- 3-60. Glaciation of the east slope of Rocky Mountain National Park, Colorado. Geol. Soc. America Bull., v. 71, no. 9, p. 1371-1381 incl. geol. sketch map and table, Sept. 1960.
- 4-60. (and BRADLEY, William Crane) Pleistocene geology of the eastern slope of Rocky Mountain National Park, Colorado Front Range, in Rocky Mtn. Assoc. Geologists, Guide to the geology of Colorado. Denver, p. 200, 1960.

**RICHMOND, James Frank**

- 1-60. Geology of the San Bernardino Mountains north of Big Bear Lake, California. California Div. Mines Spec. Rept. 65, 68 p. incl. maps, illus., and tables, with a tabulated list of mines and mineral deposits by C. H. Gray, Jr., separate geol. map and sections, 1960

**RICHMOND, Jean. See HERRIN, Eugene Thornton, Jr. 2-60**

**RICHTER, Charles Francis. See also CARDER, D. S. 1-60, FIGUEROA ABARCA, J. C. 1-60**

- 1-60. Beno Gutenberg [1889-1960]. Zisin (Tokyo), 2d ser., v. 13, no. 2, p. 1-3, portrait, July 1960.
- 2-60. (and GARDNER, John K.) The Walnut, California, earthquakes of July-August, 1959. Seismol. Soc. America Bull., v. 50, no. 2, p. 181-185 incl. tables, Apr. 1960.
- 3-60. Earthquakes in Owens Valley, California, January-February, 1959. Seismol. Soc. America Bull., v. 50, no. 2, p. 187-196 incl. index map and tables, Apr. 1960.

**RICHTER, Donald Herman. See DAVIS, Willard E. 1-60, EATON, Jerry Paul 2-60**

**RICHTER, Raymond C. See FUQUA, Wallace Dunham 3-60**

**RICKETTS, C. E.**

- 1-60. Heavy minerals in Black Hills alluvial deposits. South Dakota Acad. Sci. Proc. 1960, v. 39, p. 41-47, tables, Nov. 1, 1960

**RICKMAN, Edmund Gerald**

- 1-60. Summary of activity and production in the mineral industry for 1959 [Jamaica]. Geonotes, v. 3, pt. 1 (Jamaica Geol. Survey Pub. 60), p. 31-34, Apr. 1960.

**RIDDELL, John Evans. See also HAWKES, H. E., Jr. 2-60**

- 1-60. Geochemical prospecting methods employed in Canada's glaciated Precambrian terrains. Mining Eng., v. 12, no. 11, p. 1170-1172 incl. tables, Nov. 1960
- 2-60. A survey of geochemical exploration in Eastern Canada, in Internat. Geol. Cong., Mexico, Symposium de exploración geológica, Tomo 3 México, D. G., p. 597-606, 1960.
- 3-60. Geochemical techniques--A review. Canadian Mining and Metall. Bull., v. 53, no. 582, p. 765-768, Oct. 1960, Canadian Inst. Mining and Metallurgy Trans., v. 63, p. 516-519, 1960

**RIDGE, John Drew**

- 1-60. Behavior of sulfur under magmatic and hydrothermal conditions and its effect on S<sup>32</sup>/S<sup>34</sup> ratios [abs.]. Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1954-1955, Dec. 1960, Econ. Geology, v. 55, no. 6, p. 1330, Sept.-Oct. 1960.

## RIDGEWAY

RIDGEWAY, D C.

- 1-60. Geology of the Blaney quadrangle, S C [abs ] South Carolina State Devel Board Div Geology Geol. Notes, v. 4, no 3, p. 25-26, May-June 1960.

RIECKEN, Frank Frederick

- 1-60 (and POETSCH, Ernst) Genesis and classification considerations of some prairie-formed soil profiles from local alluvium in Adair County, Iowa Iowa Acad. Sci. Proc. 1960, v. 67, p. 268-276 incl. diagrams, Dec. 27, 1960.

RIGBY, J Keith. See also McGUGAN, Alan 3-60

- 1-60. Evidence for possible eustatic fluctuation in Permian sea level [abs.] Geol. Soc. America Bull., v 71, no. 12, pt. 2, p. 2073, Dec. 1960.  
2-60. Geology of the Buck Mountain-Bald Mountain area, southern Ruby Mountains, White Pine County, Nevada, in Geology of east central Nevada Intermountain Assoc. Petroleum Geologists, 11th Ann Field Conf , 1960 Guidebook, p 173-180 incl. index and geol. sketch maps and sections, 1960.

RIGGS, Calvin Harold

- 1-60 (and HUFF, R. V , and WARD, Dederick C ) Potentialities of the Lansing-Kansas City formation, Hall-Gurney Field, Russell County, Kansas Producers Monthly, v 24, no 7, p 18-19, 22-25 incl sketch maps and diagrams, May 1960.

RIGGS, E. A

- 1-60. Major basins and structural features of United States Maplewood, N. J., Geog Press, scale about 1 in. to 75 mi., 1960.

RIGGS, Francis Behn, Jr See KISTNER, Gustav A. 1-60

RIGGS, Robert Jennings, Jr

- 1-60 Killing three birds with one stone. World Petroleum, v 31, no. 3, p 44-45, 92 incl. sketch maps and diagrams, Mar 1960

RIGSBY, George Pierce

- 1-60. Crystal orientation in glacier and in experimentally deformed ice Jour. Glaciology (Cambridge, England), v 3, no. 27, p 589-606, illus., and French and German abs., Mar 1960

RILEY, George C.

- 1-60. Petrology of the gneisses of Cumberland Sound, Baffin Island, North-west Territories Canada Geol Survey Bull. 61, 68p , illus incl. geol map, 1960.

RILEY, Leonard Benjamin See GUDE, Arthur James, 3d 1-60, MIESCH, Alfred Thomas 1-60

RIMMER, W. G

- 1-60. Seismic applications of the velocity log Alberta Soc Petroleum Geologists Jour , v 8, no. 10, p 295-302 incl. diagrams, Oct 1960.

RINEHART, John Sargent. See also AUBERGER, Michel 1-60, 2-60

- 1-60. How to predict the effect of spalling when caused by large blasts Eng. and Mining Jour , v. 161, no. 8, p 98-101 incl. diagrams, Aug. 1960  
2-60 (and MAURER, William C.) Fractures and craters produced in sandstone by high velocity projectiles [abs ] Mining Eng , v 12, no. 10, p 1056, Oct 1960.  
3-60. Wave propagation in rocks [abs.] Geol Soc America Bull., v. 71, no 12, pt. 2, p. 1955, Dec. 1960.  
4-60 Rock mechanics Mining Cong Jour , v 46, no 8, p. 50-52 incl diagrams, Aug 1960

RISSER, Hubert E See also FINGER, G. C. 1-60

- 1-60 Kansas building stone Kansas State Geol Survey Bull 142, pt. 2, p 53-122, illus. incl. geol. map, Sept. 1, 1960.



RISTOW, Walter W

- 1-60. (and LeGEAR, Clara E., compilers) A guide to historical cartography--A selected, annotated list of references on the history of maps and map making 2d ed., revised, Washington, D. C , [U. S.] Libr Cong., Map Div , Reference Dept., [22] p., 1960.

RITCHEY, R. A. See DRESSEL, Waldemar M. 1-60

RITCHIE, Kenneth M.

- 1-60 Mineral wool--rock, slag, and glass wool, in Am. Inst. Mining, Metall , and Petroleum Engineers, Industrial minerals and rocks, p 595-604 incl tables, 1960.

RITCHIE, W. D.

- 1-60 The Kneehills tuff Alberta Soc. Petroleum Geologists Jour., v. 8, no. 11, p. 339-341, Nov. 1960.

RITTENHOUSE, Gordon

- 1-60. Problems and principles of sandstone body classification [abs.] Am. Assoc Petroleum Geologists Bull., v. 44, no. 7, p. 1256, July 1960.

RITZIUS, DeVaun Ervin

- 1-60. Southeast area of Honor Rancho oil field California Oil Fields--Summ. Operations July-Dec. 1959, v. 45, no 2, p. 5-12, illus , 1960.

RITZMA, Howard Russell

- 1-60. Reply [Geologic atlas of Utah, Daggett County] Am. Assoc. Petroleum Geologists Bull., v. 44, no. 8, p. 1441-1445 incl. geol. sketch map, Aug. 1960. (Reply to W. R. Hansen's review of his paper, Utah Geol Mineralog. Survey Bull 66, 111 p., Sept. 1959.)  
2-60. Precambrian rocks of the eastern Uinta Mountains, Utah-Colorado--A new concept [abs.] Geol. Soc America Bull., v. 71, no. 12, pt 2, p. 2039-2040, Dec. 1960.

ROACH, Carl Houston

- 1-60. Thermoluminescence and porosity of host rocks at the Eagle mine, Gilman, Colo Art. 50 in U. S. Geol. Survey Prof. Paper 400-B, p. B107-B111 incl sections and diagrams, 1960.

ROBB, W. A See STANFIELD, Kenneth Edison 1-60

ROBBINS, Carl Richard. See also LEVIN, E. M. 1-60

- 1-60. (and LEVIN, Ernest Maurice) The  $AB_4O_9$  germanates of strontium, lead and barium [abs.] Am. Ceramic Soc. Bull., v. 39, no. 4, p. 185, Apr. 1960

ROBECK, Raymond Clifton

- 1-60. Wingate through Summerville formations in the area of salt anticlines, Utah-Colorado, in Geology of the Paradox Basin fold and fault belt Four Corners Geol. Soc., 3d Field Conf., 1960, [Guidebook] p. 107-108, table, 1960.  
2-60. Subsurface structure map, Lisbon Valley anticline, Utah, Map 1 Grand Junction, Colo., privately printed, scale about 1 in. to 3/4 mi., with separate section, Dec. 1960  
3-60. Surface structure map, Lisbon Valley anticline, Utah, Map 2 Grand Junction, Colo., privately printed, scale about 1 in to 3/4 mi , Dec 1960.  
4-60. Photogeologic map of the Lisbon Valley anticline and surrounding area, San Juan County, Utah [Map 3] Grand Junction, Colo., privately printed, scale about 1 in. to 3/4 mi. [1960].  
5-60. Geologic and structure map, Lisbon Valley, Utah-Colorado, and vicinity, showing oil and gas wells in relation to uranium deposits. Grand Junction, Colo., privately printed, scale about 1 in. to 3 mi. [1960].  
6-60 Structure map of Harley anticline, Grand County, Utah [Grand Junction, Colo.] privately printed, scale about 1 in. to 1,000 ft., 1960.

ROBERSON, Charles Elmer See STEVENS, Rollin Elbert 2-60

## ROBERSON

ROBERSON, Herman Ellis See JONAS, Edward Charles 1-60

ROBERTS, Albert Eugene. See JOHNSON, Ross B 2-60

ROBERTS, Archie Carl. See EWING, John Isaac 1-60

ROBERTS, Carl Harold

1-60. Oriskany found in Pennsylvania syncline Oil and Gas Jour., v 58, no. 16, p 174, 178 incl sketch map, Apr 18, 1960

ROBERTS, David C.

1-60 The Cleveland shale and its fossils [Ohio] Cleveland Mus. Nat History Mus News, v. 2, no 7, p. 83-93, illus, July 1960

ROBERTS, Ralph Jackson

1-60. Alinement of mining districts in north-central Nevada Art. 9 in U S. Geol Survey Prof. Paper 400-B, p B17-B19 incl. geol map, 1960.  
2-60. Paleozoic structure in the Great Basin [abs.] Geol Soc America Bull, v. 71, no 12, pt. 2, p. 1955, Dec. 1960.

ROBERTS, Richard L. See GELPHMAN, Norman Ray 1-60

ROBERTS, W H., 3d

1-60 Fluid environment of petroleum [abs.] Geol Soc. America Bull., v 71, no 12, pt. 2, p 1956, Dec 1960

ROBERTSON, D S

1-60. (and STEENLAND, N. C.) On the Blind River uranium ores and their origin Econ Geology, v. 55, no. 4, p 659-694 incl geol. sketch and isopach maps and sections, diagrams, tables, and illus, June-July 1960

2-60 Diamond-drill-hole deviation in the Blind River area, Ontario, Canada [abs.] Geol. Soc America Bull, v. 71, no. 12, pt. 2, p 1956, Dec. 1960, with title, Diamond drill hole deviation in the Blind River area, Econ. Geology, v. 55, no 6, p. 1341-1342, Sept -Oct 1960

ROBERTSON, Eugene Corley. See also HATHAWAY, J C 1-60

1-60 Creep of Solenhofen limestone under moderate hydrostatic pressure, Chap 8 in Griggs, D T., ed., Rock deformation--A symposium Geol. Soc America Mem 79, p. 227-244, illus., 1960

ROBERTSON, J. A See ABRAHAM, Earl Michael 1-60-6-60

ROBERTSON, Robert See KNIGHT, James Brookes 2-60

ROBINSON, Charles Sherwood

1-60 (and ROSHOLT, John Nicholas, Jr) Apparent age and migration of uranium in deposits in sandstone based on radiochemical analyses [abs] Geol. Soc America Bull., v 71, no. 12, pt. 2, p 1957, Dec 1960, Econ. Geology, v 55, no. 6, p 1332, Sept -Oct 1960.

2-60 Origin of Devils Tower, Wyoming [abs.]. Geol. Soc. America Bull, v. 71, no 12, pt 2, p. 2040, Dec. 1960

ROBINSON, Edward

1-60. (and VERSEY, Howard Raymond, and WILLIAMS, John Bernard Edgar) The Jamaica earthquake of March 1, 1957 Caribbean Geol. Conf., 2d, Mayagüez, Puerto Rico, Jan. 4-9, 1959, Trans., p. 50-57 incl. index and sketch maps, diagram, and table, 1960, reprinted as Jamaica Geol Survey Pub. 65, 1960

2-60. Observations on the elevated and modern reef formations of the St Ann coast [Jamaica] Geonotes, v 3, pt 1, (Jamaica Geol Survey Pub 60) p. 18-22, illus incl. geol sketch map, Apr. 1960

ROBINSON, Gerald B, Jr See BULLOCK, Kenneth C. 1-60

ROBINSON, Gershon Duvall

- 1-60. Middle Tertiary unconformity in southwestern Montana Art. 101 in U. S. Geol. Survey Prof Paper 400-B, p B227-B228 incl index map, 1960.

ROBINSON, Gilbert Chase

- 1-60. (and JOHNSON, Henry Stanley, Jr.) Brick clays of Medway Plantation, Berkeley County, S. C. South Carolina State Devel. Board Div. Geology Geol Notes, v. 4, no 2, p 8-18, illus., Mar -Apr. 1960

ROBINSON, H See SCHOFIELD, Wilfred Borden 1-60

ROBINSON, J. W.

- 1-60. Determination of sodium by atomic absorption spectroscopy Anal. Chim. Acta (Amsterdam), v. 23, no. 5, p 458-461 incl. diagrams, Nov. 1960.

ROBINSON, Peter

- 1-60 Fossil mammals of the Huerfano formation (Eocene) of Colorado [abs.] Geol Soc. America Bull, v. 71, no. 12, pt. 2, p 1957-1958, Dec. 1960  
2-60. Sinopa from the Cuchara formation of Colorado Postilla, no 44, 4 p., incl illus, Feb 15, 1960

ROBINSON, Stephen Clive See also LOWDON, J. A 1-60

- 1-60. Economic uranium deposits in granitic dykes, Bancroft district, Ontario Canadian Mineralogist, v 6, pt. 4, p. 513-521, illus. incl geol. sketch map, 1960.

ROBINSON, Thomas A. See MOORE, Carl E. 1-60

ROBINSON, Thomas William. See HUNT, Charles Butler 1-60, TURNER, Samuel Foster 1-60

ROBISON, Richard A.

- 1-60. Some Dresbachian and Franconian trilobites of western Utah Brigham Young Univ Research Studies Geology Ser., v 7, no. 3, 59 p, illus., Apr 1960  
2-60. Lower and Middle Cambrian stratigraphy of the eastern Great Basin, in Geology of east central Nevada Intermountain Assoc. Petroleum Geologists, 11th Ann Field Conf., 1960 Guidebook, p 43-52 incl. sketch maps, sections, correlation chart, and table, 1960

ROBITAILLE, Benoit

- 1-60. Présentation d'une carte géomorphologique de la région de Mould Bay, Ile du Prince Patrick, Territoires du Nord-Ouest Canadian Geographer, no 15, p 39-43, illus., 1960  
2-60 Géomorphologie de Sud-Est de l' île Cornwallis, Territoires de Nord-Ouest Cahiers Géographie Québec, 4<sup>e</sup> année, no 8, p. 359-365 incl. sketch map, Apr -Sept 1960.

ROBSON, Geoffrey Robert

- 1-60. Seismic stations in Jamaica Geonotes, v. 2, pt. 4 (Jamaica Geol. Survey Pub 59), p 134, 1959 [Jan. 1960]  
2-60. (and BARR, K G.) Unidentified earth tremors in Dominica, West Indies Nature (London), v 188, no 4747, p 306, illus., Oct 22, 1960

ROBY, Robert Neil

- 1-60. (and others) Mines and mineral deposits (except fuels), Jefferson County, Montana Montana Bur. Mines and Geology Bull 16, 122 p, illus. incl geol maps, June 1960.

ROCH, Eduoard

- 1-60. Discussion on the origin of bauxite associated with limestone Geonotes, v. 3, pt 2 (Jamaica Geol. Survey Pub 62), p 70-71, July 1960

## ROCKY MOUNTAIN ASSOCIATION of GEOLOGISTS

### ROCKY MOUNTAIN ASSOCIATION of GEOLOGISTS

1-60. (WEIMER, Robert Jay, and HAUN, John Daniel, editors) Guide to the geology of Colorado Denver, Colorado, Geol. Soc. America, Rocky Mtn Assoc Geologists, and Colorado Sci Soc, 303 p. incl index, geol, and other sketch maps, sections, correlation charts, diagrams, tables, and illus, tectonic maps, 1960 (Prepared for 1960 annual meeting of the Geological Society of America and 1961 meeting of the American Association of Petroleum Geologists.)

2-60 (DONNELL, John Roswell, and CLEMENT, Belva D., editors) Geological road logs of Colorado Denver, 90 p incl. sections and illus., 1960. Includes a paper by T. G. McLaughlin, which is cited separately

RODDA, Peter Ulisse See MURPHY, Michael A 1-60

RODDICK, James Archibald. See CANADA GEOL. SURVEY 38-60—40-60, GREEN, Lewis Howard 1-60, 3-60

RODGER, Walton A.

1-60. Radioactive waste disposal Argonne National Lab., Lemont, Ill., Rept. ANL-6233, 169 p., illus, Sept 1960

RODGERS, John See FLINT, Richard Foster 1-60

RODGERS, P. A

1-60 Gravity map of the Hartsel area, South Park, Colorado, in Rocky Mtn. Assoc Geologists, Guide to the geology of Colorado Denver, p 184-185 incl. anomaly map, 1960.

RODGERS, Robert William

1-60 Walnut formation, in Cretaceous stratigraphy of the Grand and Black Prairies, east-central Texas Baylor Geol. Soc, Field Conf, Apr 1960, Guidebook, p. 75-78, 1960

2-60. Terraces in McLennan County, in Cretaceous stratigraphy of the Grand and Black Prairies, east-central Texas Baylor Geol Soc, Field Conf, Apr. 1960, Guidebook, p. 125-127, 1960.

RODIS, Harry George

1-60. (and SCHNEIDER, Robert) Occurrence of ground waters of low hardness and of high chloride content in Lyon County, Minnesota U. S. Geol. Survey Circ 423, 2 p., illus, 1960

RODRIGUEZ, Joaquin See also HOROWITZ, A S 1-60, PERRY, T. G. 1-60  
1-60. Invertebrate fauna of the Golconda formation (middle Chester) of Indiana, western Kentucky, and southern Illinois [abs] Dissert Abs, v 21, no 3, p 596, Sept. 1960

ROE, Anne. See SIMPSON, George Gaylord 5-60

ROEDDER, Edwin Woods

1-60. Fluid inclusions as samples of the ore-forming fluids Internat Geol. Cong., 21st, Copenhagen, 1960, Rept., pt 16, p. 218-229 incl diagrams and illus., 1960.

2-60 Primary fluid inclusions in sphalerite crystals from the OH vein, Creede, Colorado [abs] Geol. Soc. America Bull, v 71, no. 12, pt 2, p 1958, Dec 1960, with title, Studies of primary fluid inclusions in sphalerite crystals from the OH vein, Creede, Colorado, Econ. Geology, v. 55, no. 6, p 1337, Sept.-Oct 1960.

ROEDER, P. L. See also OSBORN, E F 1-60

1-60 (and OSBORN, Elburt Franklin) Phase relations in the  $Mg_2SiO_4$ - $CaAl_2Si_2O_8$ - $FeO$ - $Fe_2O_3$ - $SiO_2$  system and their bearing on crystallization of basaltic magma [abs.] Geol Soc. America Bull., v. 71, no. 12, pt 2, p. 1958-1959, Dec. 1960.

ROEHLER, Henry William. See MCGREW, Paul Orman 1-60

ROGERS, George W

- 1-60. Alaska in transition--The southeast region Baltimore, Md., Johns Hopkins Press, 384 p incl. diagrams and tables, also illus., 1960 (Published for Resources for the Future, Inc )

ROGERS, John James William. See also ADAMS, J. A. S. 3-60

- 1-60. Measurement of refractive indices in thin section Am. Mineralogist, v 45, nos 5-6, p. 741, May-June 1960.  
2-60. (and LONGSHORE, John D.) Differentiation of a lamprophyre sill, northern La Plata Mountains, Colorado Am. Mineralogist, v. 45, nos. 7-8, p 774-782 incl. diagrams and illus., July-Aug 1960.  
3-60 Geologic interpretation of frequency distributions. Internat. Geol. Cong , 21st, Copenhagen, 1960, Rept., pt. 21, p 275-280, 1960.

ROHRER, Willis Lee

- 1-60. (and KONIZESKI, Richard L.) On the occurrence of Edmontosaurus in the Hell Creek formation of Montana Jour Paleontology, v. 34, no 3, p 464-466 incl index map, section, and table, illus., May 1960, correction, v. 35, no 1, p 230, Jan. 1961.

ROLFE, Bernard Nathan

- 1-60 (and MILLER, R. F., and McQUEEN, I. S.) Dispersion characteristics of montmorillonite, kaolinite, and illite clays in waters of varying quality, and their control with phosphate dispersants U. S Geol Survey Prof. Paper 334-G, p 229-273, illus., 1960.  
2-60. Clays and secondary recovery, in Symposium on geology and secondary recovery. Tulsa Geol. Soc. Digest, v 28, p 59-70 incl illus., 1960.

ROLIFF, William Albert

- 1-60. Oil and gas prospects of Maritimes region of eastern Canada [abs ] Am. Assoc Petroleum Geologists Bull , v. 44, no. 7, p. 1256, July 1960.

ROLLER, John C See BYERLY, P. Edward 1-60, DIMENT, William Horace 1-60, 2-60

ROLLO, J. R. See also CARDWELL, G T. 1-60

- 1-60 Ground water in Louisiana Louisiana Geol. Survey Water Resources Bull 1, 84 p., illus incl. geol map, Aug. 1960

ROMAN, Irwin

- 1-60. Apparent resistivity of a single uniform overburden U. S. Geol. Survey Prof Paper 365, 99 p., illus., 1960

ROMER, Alfred Sherwood

- 1-60. The vertebrate fauna of the New Mexico Permian, in Rio Chama Country New Mexico Geol Soc., 11th Field Conf , Oct. 1960, Guidebook, p. 48-54, illus., 1960

RONDOT, Jehan

- 1-60. Preliminary report on Carignan-Hackett area, Laviolette and Portneuf electoral districts Quebec Dept. Mines Geol. Surveys Br. Prelim. Rept. 417, 11 p., geol. map, 1960, also French ed.

RONES, Morris

- 1-60. Recognition and interpretation of some carbonate rock types in the Ordovician of central Pennsylvania, in Gates, Olcott, ed., Lower Paleozoic carbonate rocks in Maryland and Pennsylvania. Johns Hopkins Univ. Studies Geology, no. 18, Guidebook 3, p 28-41 incl. section, 1960

ROOTS, Ernst Frederick

- 1-60. The Canadian Polar Continental Shelf Project [abs ] Oilweek, v. 10, no 49, p. 27-29, Jan. 23, 1960.

RORABAUGH, Matthew Irvin

- 1-60 Problems of waste disposal and ground water quality Am. Water Works Assoc Jour., v 52, no. 8, p 979-982, Aug. 1960

## RORABAUGH

- 2-60 Use of water levels in estimating aquifer constants in a finite aquifer Internat Assoc. Sci. Hydrology (Gentbrugge, Belgium) Pub 52, p 314-323 incl. diagrams and French abs , 1960.

## ROSALSKY, Maurice B.

- 1-60 The physiography of Cape Canaveral, Florida Rocks and Minerals, v 35, nos 3-4, p. 99-102 incl. sketch maps, Mar -Apr. 1960

## ROSCOE, S M.

- 1-60. Huronian uraniferous conglomerates Econ Geology, v. 55, no. 2, p. 410-414, Mar.-Apr. 1960, reply to discussion by C F. Davidson, v. 54, p. 1316-1320, 1959

## ROSE, Charles K.

- 1-60 (and SHANNON, Spencer S., Jr ) Cebolla Creek titaniferous iron deposits, Gunnison County, Colo U. S Bur Mines Rept. Inv. 5679, 30 p. incl index and geol. sketch maps, 1960.

## ROSE, Edward Roderick

- 1-60. Rare earths of the Grenville sub-province, Ontario and Quebec Canada Geol Survey Paper 59-10, 41 p., tables, 1960  
2-60. Iron and titanium in the Morin anorthosite, Quebec Canada Geol Survey Paper 60-11, 12 p., illus., 1960.

## ROSE, Harry Joseph, Jr

- 1-60. (and STERN, Thomas Whital) Spectrochemical determination of lead in zircon for lead-alpha age measurements Am. Mineralogist, v. 45, p 1243-1256 incl. diagrams and tables, Nov -Dec. 1960  
2-60. (and STERN, Thomas Whital) Spectrochemical determination of lead in zircon for lead- $\alpha$  age measurements [abs.] Jour. Geophys. Research, v. 65, no. 8, p. 2520, Aug 1960

## ROSE, William Dake, Jr.

- 1-60. Structure map of Greenville quadrangle Lexington, Kentucky Geol Survey, ser 10, scale 1 24,000 (1 in to 2,000 ft ), with well log, 1960

## ROSEBOOM, Eugene Holloway, Jr.

- 1-60. High-temperature X-ray studies in the system Cu-S [abs ] Geol Soc. America Bull., v. 71, no. 12, pt. 2, p 1959, Dec 1960

## ROSENBERG, Philip E. See also WARSHAW, C M. 3-60

- 1-60. Subsolidus studies in the system  $\text{CaCO}_3\text{-MgCO}_3\text{-FeCO}_3$  and their relation to the quaternary system  $\text{CaCO}_3\text{-MgCO}_3\text{-FeCO}_3\text{-MnCO}_3$  [abs ] Geol Soc America Bull , v 71, no 12, pt. 2, p 1959, Dec. 1960.

## ROSENBLUETH, Emilio

- 1-60. The earthquake of 28 July 1957 in Mexico City World Conf Earthquake Eng , 2d, Tokyo and Kyoto, Japan, July 11-18, 1960, Proc , v. 1, p 359-379 incl. sketch maps, diagrams, illus , and discussion, Tokyo, Sci. Council Japan, 1960.

## ROSENFELD, John Lang. See also EATON, G P. 1-60

- 1-60. Rotated garnets and the diastrophic-metamorphic sequence in south-eastern Vermont [abs ] Geol. Soc. America Bull , v 71, no. 12, pt 2, p. 1960, Dec 1960.  
2-60 (and CHASE, Armand B.) Pressure and temperature of crystallization from elastic effects around solid inclusions in minerals?[abs.] Geol Soc. America Bull., v 71, no. 12, pt 2, p. 1960-1961, Dec. 1960.

## ROSENQVIST, Ivan Thoroff

- 1-60. Physico-chemical properties of soils--soil-water systems Am Soc. Civil Engineers Proc., v. 85, paper 2000, Jour Soil Mechanics and Found. Div no. SM 2, pt. 1, p. 31-53, illus , Apr. 1959, discussion by A S. Michaels, paper 2010, p 91-102, Apr 1959, reply by author, v 86, paper 2391, no SM 1, pt 1, p 75-77, 1960

## ROSENZWEIG, Abraham

- 1-60 Optical and twin orientation of spurrite [abs ] Geol. Soc America Bull , v 71, no 12, pt. 2, p 2073-2074, Dec 1960

## ROSHOLT, John Nicholas, Jr. See also ROBINSON, C. S. 1-60

- 1-60 (and DOOLEY, John Raymond, Jr.) Automatic measurements and computations for radiochemical analyses Anal. Chemistry, v 32, no. 9, p 1093-1098 incl. diagrams, tables, and illus , Aug 1960.  
 2-60. A study of uranium migration in sandstone-type ore deposits Art. 21, in U. S Geol Survey Prof. Paper 400-B, p. B41-B42, 1960  
 3-60 Radiochemical determination of apparent age of uranium migration in sandstone-type ore deposits [abs ] Geol. Soc. America Bull., v 71, no. 12, pt. 2, p. 1961, Dec. 1960, Econ Geology, v. 55, no 6, p 1342, Sept -Oct 1960.

## ROSS, Alex R

- 1-60. (and ST JOHN, Jack W ) Geology of the northern Wyoming Range, Wyoming, in Overthrust belt of southwestern Wyoming and adjacent areas Wyoming Geol. Assoc , 15th Ann Field Conf , 1960, Guidebook, p 44-56 incl geol , tectonic, and index maps, sections, table, and illus., 1960.

## ROSS, Charles Alexander

- 1-60. Population study of charophyte species, Morris formation, Colorado Jour. Paleontology, v. 34, no 4, p. 717-726 incl sections and diagrams, illus., July 1960.  
 2-60. Fusulinid distribution in the Leonard formation, Permian, Glass Mountains, Texas [abs ] Geol. Soc. America Bull., v 71, no 12, pt 2, p. 1961, Dec. 1960.  
 3-60. Fusulinids from the Hess member of the Leonard formation, Leonard Series (Permian), Glass Mountains, Texas Cushman Found Foram. Research Contr , v 11, pt 4, p 117-133, illus., Oct 1960

## ROSS, Clarence Samuel. See also SMITH, R. L. 2-60

- 1-60. Review of the relationships in the montmorillonite group of clay minerals, in Swineford, Ada, ed , Clays and clay minerals Natl. Conf. Clays and Clay Minerals, 7th, Washington, D. C., Oct 1958, Proc , p. 225-229 incl. tables, 1960 (Issued as Internat Earth Science Ser Mon 5 of Pergamon Press, New York.)

## ROSS, Clyde Polhemus

- 1-60 Diverse interfingering Carboniferous strata in the Mackay quadrangle, Idaho Art. 104 in U. S. Geol Survey Prof. Paper 400-B, p B232-B233, 1960.  
 2-60. Geomorphology of the southern part of central Idaho [abs.] Geol Soc. America Bull , v. 71, no 12, pt. 2, p 1962, Dec 1960  
 3-60. Geology of Glacier National Park and the Flathead region, northwestern Montana U. S. Geol. Survey Prof Paper 296, 125 p incl. sketch maps, sections, charts, diagram, tables, and illus , also geol and topog maps and block diagrams, 1959 [1960].

## ROSS, D I See HORTON, James Henry 1-60

## ROSS, Daphne Riska See SMITH, William Lee 1-60

## ROSS, June R P Phillips

- 1-60 Larger cryptostome Bryozoa of the Ordovician and Silurian, Anticosti Island [Quebec] Canada--Pt 1 Jour. Paleontology, v. 34, no 6, p 1057-1076 incl. geol map, diagram, and tables, illus., Nov 1960, Pt 2, v. 35, no 2, p 331-344 incl tables, illus , Mar. 1961  
 2-60. Type species of *Ptilodictya*--*Ptilodictya lanceolata* (Goldfuss) Jour Paleontology, v. 34, no 3, p 440-446 incl diagram, table, and illus , May 1960.  
 3-60. Re-evaluation of the type species of *Arthropora* Ulrich [Ohio] Jour Paleontology, v. 34, no 5, p 859-861, illus , Sept 1960

## ROSS, Malcolm See FAHEY, J. J. 1-60, STRACZEK, John A 1-60

ROSS

ROSS, Mattie E.

1-60. Trinidad jasper [California] Gems and Minerals, no. 272, p 20-22, illus, May 1960

ROSS, Reuben James, Jr.

1-60. (and PALMER, Allison Ralph, and MERRIAM, Charles Warren) Lower Paleozoic stratigraphic problems in the Great Basin [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt 2, p. 1962, Dec. 1960

ROSSUM, John R.

1-60. (and VILLARRUZ, Primo A ) Suggested method for iodide determination Am. Water Works Assoc. Jour., v. 52, no 7, p. 919-921 incl. tables, July 1960.

ROSTOKER, Mendel David

1-60. The geology of the Canso Group in the Maritime Provinces of Canada [abs.] Dissert. Abs., v. 21, no 6, p. 1527-1528, Dec. 1960

ROSWELL GEOLOGICAL SOCIETY

1-60 (KOTTELOWSKI, Frank Edward, and others, leaders) Northern Franklin Mountains, southern San Andres Mountains, with emphasis on Pennsylvanian stratigraphy, Guidebook for field trip, November 18-20, 1960 Roswell, N. Mex., 160 p incl. index and geol sketch maps, sections, tables, and illus., 1960. Includes papers which are cited separately

ROTH, Eldon Sherwood

1-60. The silt-clay dunes at Clark Dry Lake, California Compass, v 38, no. 1, p. 18-27 incl. sketch map, diagrams, and illus, Nov. 1960.

ROTH, Etienne. See DANSGAARD, W. 1-60

ROTH, Robert Ingersol

1-60. Swisher gabbroic terrane of Texas Panhandle Am Assoc Petroleum Geologists Bull, v. 44, no. 11, p 1775-1784 incl sketch map, sections, and illus., Nov. 1960.

ROTH, Robert Sidney. See also SCHNEIDER, S. J, Jr. 2-60

1-60 Phase equilibria investigations of portions of the quaternary system  $\text{BaO-Nb}_2\text{O}_3\text{-Gd}_2\text{O}_3\text{-Fe}_2\text{O}_3$  [abs.] Am. Ceramic Soc Bull, v 39, no. 4, p 187, Apr 1960.

ROTHROCK, David P.

1-60. Devonian and Mississippian systems in Colorado, in Rocky Mtn. Assoc. Geologists, Guide to the geology of Colorado Denver, p. 17-22 incl. isopach maps and sections, 1960. \*

ROTTENBERG, J. A See BEALS, Carlyle Smith 1-60

ROUGET, Edmund S, Jr See NANCE, Richard Leon 1-60

ROUND, George Frederick. See also NEWTON, Robert 1-60

1-60. The shear strength of McMurray oil sands [Alberta] Canadian Mining and Metall Bull., v 53, no. 576, p 233-238 incl. diagrams and tables, Apr 1960, Canadian Inst Mining and Metallurgy Trans., v 63, p. 145-150, 1960

ROWELL, J. A. See HARRIS, Peter G 1-60

ROWLAND, John F. See NICKEL, Ernest Henry 1-60

ROWLAND, Tommy Lee. See JORDAN, Louise

ROWLEY, Elmer B

1-60. Monazite and cyrtolite crystals at Day, New York pegmatite--New American locality. Rocks and Minerals, v 35, nos. 7-8, p. 328-330 incl. illus, July-Aug. 1960



- ROWLEY, Joanne. See also POTTER, L. D. 1-60  
1-60. A preliminary pollen study from a fossil bison site in St. Paul, Minnesota. Minnesota Acad. Sci. Proc. 1957-58, v. 25-26, p. 40-50, illus., 1960
- ROY, Amalendu  
1-60. A new approach to geophysical method of finding oil. Oil and Gas Jour., v. 58, no. 45, p. 208-211 incl. diagrams and table, Nov. 7, 1960
- ROY, Chalmer John. See CARSON, C. E. 2-60, DAHL, A. R. 2-60, HANSEN, J. A., Jr. 2-60
- ROY, Della Martin. See also BUCKNER, D. A. 2-60  
1-60. (and others) New data for the calcium silicate, 'phase Z'. Nature (London), v. 188, no. 4757, p. 1187-1188, Dec. 31, 1960.
- ROY, Rustum. See also BUCKNER, D. A. 1-60, 2-60, COHEN, H. M. 1-60, DACHILLE, Frank 1-60, 2-60, DATTA, Ranajit 1-60, GENTILE, A. L. 1-60, HAWKINS, D. B. 1-60, HOFFER, Abraham 1-60, KLINGSBERG, Cyrus 1-60, KOIZUMI, Mitsue 1-60, MUMPTON, F. A. 1-60, SHORT, James 1-60, STUBICAN, Vladimir 1-60, TAYLOR, A. M. 1-60, WARSHAW, C. M. 1-60, 3-60, WHITE, W. B. 1-60  
1-60. High pressure--A new chemical tool. Mineral Industries, v. 29, no. 5, p. 1, 4-6, 8 incl. diagrams, Feb. 1960
- ROYSE, Frank, Jr. See ESPACH, Ralph Homeward, Jr. 1-60
- RUBEY, W. W. See LAUBSCHER, Hans P. 1-60
- RUBIN, Meyer  
1-60. (and ALEXANDER, Corrinne) U. S. Geological Survey radiocarbon dates, [Pt.] 5. Am. Jour. Sci. Radiocarbon Supp., v. 2, p. 129-185, 1960.  
2-60. Changes in Wisconsin glacial stage chronology by C<sup>14</sup> dating. Am. Geophys. Union Trans., v. 41, no. 2, p. 288-289, June 1960
- RUDMAN, Albert J. See also BIGGS, M. E. 2-60  
1-60. Seismic-reflection survey of the surface of the basement complex in southwestern Indiana [abs.]. Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 2024, Dec. 1960.  
2-60. A seismic reflection survey of the surface of the basement complex in Indiana. Indiana Geol. Survey Rept. Prog. 18, 26 p., illus., Apr. 1960.
- RUDEMANN, Rudolf, 1864-1956. See POPE, John Keyler 1-60
- RUHE, Robert Victory  
1-60. Age of the Rio Grande Valley in southern New Mexico [abs.]. Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1962-1963, Dec. 1960.  
2-60. Elements of the soil landscape. Internat. Cong. Soil Sci., 7th, Madison, Wisconsin, 1960, Trans., v. 4, comm. 5, p. 165-170 incl. diagrams, table, and French and German summaries [1960].
- RUHLMAN, E. Robert  
1-60. Potash, in: Am. Inst. Mining, Metall., and Petroleum Engineers, Industrial minerals and rocks, p. 669-680 incl. diagrams, and tables, 1960.
- RUNCORN, Stanley Keith. See COLLINSON, D. W. 1-60, OPDYKE, Neil. D. 1-60
- RUNNELS, Russell Tyson. See GALLE, O. Karmie 1-60, HILL, Walter Edward, Jr. 1-60, IVES, William, Jr. 1-60
- RUNNER, Joseph James  
1-60. Some problems of the Lakota of the northeastern Black Hills [abs.]. Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 2040, Dec. 1960
- RUSH, Richard William  
1-60. Drainage development in lower Fresno Creek area, Presidio County, Texas. Iowa Acad. Sci. Proc. 1960, v. 67, p. 326-335, illus., Dec. 27, 1960.

## RUSNAK

RUSNAK, Gene Alexander

- 1-60. Some observations of recent oolites Jour. Sed Petrology, v. 30, no 3, p 471-480 incl index and geol sketch maps, diagrams, sections, table, and illus , Sept. 1960.
- 2-60. Sediments of Laguna Madre, Texas, in Shepard, F. P , and others, ed., Recent sediments, northwest Gulf of Mexico Tulsa, Okla., Am. Assoc Petroleum Geologists, p. 153-196, illus., 1960.

RUSSELL, Dale A.

- 1-60. A review of the Oligocene insectivore *Micropternodus borealis* [Montana] Jour Paleontology, v 34, no. 5, p 940-949 incl illus , Sept. 1960.

RUSSELL, Dearl Trayea

- 1-60. Geology of northern Latimer County, Oklahoma Oklahoma Geol. Survey Circ 50, 57 p , illus incl geol. map, 1960

RUSSELL, Loris Shano

- 1-60. Fossil mammals and intercontinental connections, in Evolution, its science and doctrine Royal Soc Canada "Studia Varia" Ser. 4, p 63-78 incl. chart, 1960
- 2-60. The geological record of evolution, in Evolution, its science and doctrine Royal Soc. Canada "Studia Varia" Ser. 4, p 3-11, 1960

RUSSELL, Richard Doncaster. See also BOYLE, R. W. 1-60, FARQUHAR, R. M 1-60, MAIR, J. A 1-60, STANTON, R. D. 1-60

- 1-60. (and JACOBS, John Arthur, and GRANT, Fraser S.) Gravity measurements on the Salmon Glacier and adjoining snow field, British Columbia, Canada Geol. Soc America Bull , v 71, no 8, p 1223-1229 incl. diagram and profiles, also gravity maps and illus., Aug. 1960
- 2-60. (and KOLLAR, F ) Interpretations of variation in the isotope ratios of common lead Internat. Geol Cong., 21st, Copenhagen, 1960, Rept , pt 1, p 132-140, 1960.
- 3-60. (and FARQUHAR, Ronald McCunn) Lead isotopes in geology New York, N Y , Intersci. Pubs., 243 p., illus , 1960.

RUSSELL, Richard Joel

- 1-60. Beach rock investigations [abs ] Science, v. 131, no 3409, p 1320, Apr. 29, 1960
- 2-60 Preliminary notes on Caribbean beach rock Caribbean Geol Conf , 2d, Mayagüez, Puerto Rico, Jan. 4-9, 1959, Trans., p 43-49 incl index map and illus , with discussion, 1960.
- 3-60. Instability of sea level, in Science in progress, 11th ser., Taylor, H. S., ed New Haven, Conn , Yale Univ. Press, p. 39-59, illus., 1960

RUSSELL, Robert H

- 1-60. Artificial recharge of a well at Walla Walla [Washington] Am Water Works Assoc. Jour., v. 52, no. 11, p 1427-1437 incl table, Nov. 1960.

RUSSELL, Robert J.

- 1-60. Pleistocene pocket gophers from San Josecito Cave, Nuevo León, México Kansas Univ Mus. Nat. History Pub , v. 9, no 21, p 541-548, illus., Jan 14, 1960

RUSSELL, Wendell H.

- 1-60. A method of off location quantitative mud analysis for hydrocarbons Soc Prof Well Log Analysts, 1st Ann Logging Symposium, Tulsa, Oklahoma, May 16-17, 1960, Trans., 7 p. incl. diagrams, paged separately, 1960.

RUSSELL, William Allan Campbell See KENT, Percy Edward 1-60

RUSSELL, William Low See also HOUSTON GEOL. SOC. 1-60

- 1-60. Principles of petroleum geology 2d ed , New York, N. Y., McGraw-Hill Book Co., 503 p., illus incl geol maps, 1960, originally published 1951

RUTKA, A.

- 1-60. Correlation of engineering and pedological soil classification in Ontario [abs.] Royal Soc. Canada Minutes Proc , 3d ser , v 54, App. C, p. 41, 1960.

RUTTEN, Martin Gerard

- 1-60 Ice-pushed ridges, permafrost and drainage Am Jour Sci , v 258, no 4, p. 293-297 incl sketch maps, Apr. 1960

RUZHENCEV, V. E.

- 1-60. Ammonoid classification problems Jour. Paleontology, v. 34, no. 4, p 609-619 incl. diagrams, July 1960

RYAN, Dennis J See ALLEN, William Burrows 1-60

RYAN, Douglas Earl

- 1-60. The determination of zirconium with benzoylphenylhydroxylamine Canadian Jour Chemistry, v. 38, no. 12, p. 2488-2492 incl tables, Dec. 1960

RYAN, Jack Burnside

- 1-60. West Gloria Gay (conglomerate) field, Stonewall County, Texas, in Abilene Geol Soc , Geological contributions 1960, p 162-167, illus., 1960.

RYHAGE, R. See GAVELIN, S 1-60

RYLING, Roy W.

- 1-60. Ground-water potential of Mississippi County, Arkansas Arkansas Geol. and Conserv Comm Water Resources Circ 7, 87 p incl. maps, tables, and cross sections, 1960.

SABATIER, Germain See HEEZEN, Bruce Charles 6-60

SABELS, Bruno Erich

- 1-60. Thermoluminescence correlation of rhyolitic tuffs [abs ] Geol Soc. America Bull , v 71, no. 12, pt. 2, p 1963, Dec 1960
- 2-60. Late Cenozoic volcanism in the San Francisco volcanic field and adjacent areas in north central Arizona [abs.] Dissert. Abs., v. 21, no. 3, p 596, Sept. 1960

SABINA, Ann P.

- 1-60 (and TRAILL, R J ) Catalogue of X-ray diffraction patterns and specimen mounts on file at the Geological Survey of Canada Canada Geol. Survey Paper 60-4, 116 p , tables, 1960.

SABINS, Floyd F , Jr

- 1-60. (and BONHAM, Lawrence Cook) New fossil occurrence in Mesaverde group, San Juan basin, New Mexico Am Assoc Petroleum Geologists Bull., v 44, no 12, p. 1936-1937, Dec. 1960
- 2-60. New evidence for primary dolomite grains from Upper Cretaceous marine sandstones of the Western Interior [abs.] Geol. Soc. America Bull , v 71, no 12, pt 2, p. 1964, Dec. 1960

SABLE, Edward G. See CHAPMAN, Robert Mills 2-60

SABOL, Joseph William

- 1-60. An emendation of the description of Nodosaria catesbyi, d'Orbigny [Virginia] Jour Paleontology, v 34, no. 3, p. 594, May 1960.
- 2-60. The microfauna of the Yorktown formation from James River, Surry County, Virginia Bulls. Am. Paleontology, v 41, no. 191, p 211-246, illus , Nov 25, 1960

SABOURIN, Robert Joseph Edmond

- 1-60. Preliminary report on Pommeroy-Bellefeuille area, Témiscamingue electoral district Quebec Dept. Mines Geol. Surveys Br. Prelim. Rept. 423, 7 p., geol. map, 1960, also French ed.

## SABOURIN

2-60. La minéralisation radioactive de Hunters Point, comté de Témiscamingue, Québec [abs.] Assoc. Canadienne-Française Av. Sci. Annales, v. 26, p. 109, 1960

SACHS, Donald Charles. See ADAMS, W. M. 2-60

SACHS, Kelvin Norman, Jr

1-60. Revision of the American Lepidocyclinas [abs.] Dissert Abs., v. 21, no. 6, p. 1528, Dec. 1960.

SACKETT, William Malcolm

1-60. Protactinium-231 content of ocean water and sediments Science, v. 132, no. 3441, p. 1761-1762 incl. tables, Dec. 9, 1960

SACRAMENTO VALLEY SUB-COMMITTEE, HARDING, Tod Powell, chairman See AM. ASSOC. PETROLEUM GEOLOGISTS Comm. Strat Correlations 1-60

SADLER, A. G.

1-60. The mineral constitution of Queenston shale Canadian Ceramic Soc. Jour. v. 29, p. 7-22 incl. diagrams and tables, 1960.

SADLICK, Walter

1-60. New name for *Spirifer occidentalis* (Girty) and its geologic history Jour. Paleontology, v. 34, no. 6, p. 1210-1214 incl. table, Nov. 1960

2-60. Some preliminary aspects of Chainman stratigraphy, in Geology of east central Nevada Intermountain Assoc. Petroleum Geologists, 11th Ann. Field Conf., 1960 Guidebook, p. 81-90 incl. correlation chart and illus., 1960.

SÁENZ A, Mario

1-60. Las cuevas de Damas Costa Rica Dept. Geología, Minas y Petróleo Informes, año 1, no. 2, p. 3-5 incl. sketch map and diagram, Sept. 1960.

SÁENZ RUIZ, Rodrigo

1-60. Tombolo Catedral Costa Rica Dept. Geología, Minas y Petróleo Informes, año 1, no. 2, p. 1-3 incl. sketch maps, Sept. 1960

SAHAKIAN, A See LONG, R. A. 1-60

SAHINEN, Uuno Mathias

1-60. (and SMITH, Ralph Irvin, and LAWSON, D. C.) Progress report on the clays and shales of Montana, 1958-1959 Montana Bur Mines and Geology Bull. 13, 83 p., illus., Jan 1960

SAHU, K. C. See MOOKHERJEE, Asoke 1-60

SAINSBURY, Cleo Ladell. See also KACHADOORIAN, Reuben 5-60

1-60. (and MacKEVETT, Edward Malcolm, Jr.) Structural control in five quicksilver deposits in southwestern Alaska. Art. 18 in U. S. Geol Survey Prof. Paper 400-B, p. B35-B38 incl. index and geol. sketch maps, sections, and diagram, 1960.

2-60 Metallization and post-mineral hypogene argillization, Lost River tin mine, Alaska Econ. Geology, v. 55, no. 7, p. 1478-1506 incl. geol. sketch maps and sections, diagrams, tables, and illus., Nov. 1960

ST. JEAN, Joseph, Jr. See also GALLOWAY, J. J. 2-60

1-60. The widespread distribution of characteristic Devonian stromatoporeoid microstructures and their stratigraphic significance Internat Geol. Cong., 21st, Copenhagen, 1960, Rept., pt. 21, p. 239-250 incl. illus., 1960.

ST. JOHN, Billy E. See MUEHLBERGER, William Rudolph 4-60

ST. JOHN, Jack W. See ROSS, Alex R. 1-60

ST -ONGE, Denis

- 1-60. Discussion on two articles by Dr. M. Brochu Zeitschr Geomorphologie (Berlin), New Folge, Band 4, Heft 3-4, p 292-296, Dec. 1960.

SAKAMOTO, K See YAMAGUCHI, Goro 1-60

SAKS, V. N

- 1-60. Some considerations on the geological history of the Arctic in Problems of the North, No 1, 1958, translation of "Problemy Severa" Ottawa, Natl. Research Council, p 70-90, illus., Dec. 1960.

SALAS, Guillermo Pedro

- 1-60 Programa y resultados de trabajos realizados durante el año de 1959 México Univ. Nac Inst. Geofísica Anales, tomo 16, 17 p, illus., 1960

SALES, Reno Haber

- 1-60. (and GRISWOLD, George Gary, Jr, and SHEA, Edward P) Muri Harold Gidel [1889-1960]--An appreciation Mining Eng, v. 12, no 11, p. 1194-1195, Nov 1960  
2-60. Critical remarks on the genesis of ore as applied to future mineral exploration Econ Geology, v 55, no. 4, p 805-817, June-July 1960.

SALINAS ESTRELLA, Sergio

- 1-60. Características estratigráficas de la región La Perla-Orizaba-Tequila, Edo. de Veracruz Asoc Mexicana Geólogos Petroleros Bol., v 12, nos. 5-6, p 145-199, index map, sections, and chart, May-June 1960

SALMON, Merlyn L See HAWKES, Herbert Edwin, Jr 1-60

SAMPSON, Ross E See PARSONS, Gordon W. 1-60

SAMUELSON, W. J.

- 1-60. (and CURTISS, Robert Eugene) Geology of Madison Valley slide, App. 5 in U. S. Army Corps of Engineers, Madison River, Montana, report on flood emergency, Madison River slide--V 2, Appendixes Omaha, Nebraska, U. S. Army Corps of Engineers, p. V-1-V-3, geol sketch map and sections, Mar. [Sept.] 1960.

SANDBANK, Harold

- 1-60. The community impact of peaceful applications of atomic energy U. S. Atomic Energy Comm. Rept TID-8202, 80 p incl sketch map, tables, and illus, Mar 1960.

SANBORN, Albert Francis

- 1-60. Geology and paleontology of the southwest quarter of the Big Bend quadrangle, Shasta County, California California Div Mines Spec. Rept. 63, 26 p., illus. incl geol map, 1960.

SANBORN, William B.

- 1-60 Crystal and mineral collecting Menlo Park, Calif, Lane Book Co, 144 p., illus, Feb. 1960

SAND, Leonard B See also MASON, B H, 1-60

- 1-60. (and REGIS, Andrew J.) Report on a vein montmorillonite from Tooele County, Utah [abs] Geol. Soc America Bull, v 71, no 12, pt 2, p. 1965, Dec 1960

SANDBERG, Charles Albert

- 1-60 Thickness and distribution of Devonian formations in relation to buried pre-Madison structural features in Williston basin [abs] Am. Assoc Petroleum Geologists Bull, v. 44, no 6, p. 960-961, June 1960.  
2-60. Thickness and distribution of Devonian formations in relation to buried pre-Madison structural features in the Williston basin [abs] Am. Assoc. Petroleum Geologists Rocky Mtn. Sec. Geol. Record 1960, p 161-162 [1960].

SANDELL

SANDELL, Ernest Birger. See HARA, T. 1-60

SANDERS, John Essington. See also FLINT, R. F. 1-60, SIEVER, Raymond 2-60

1-60. Origin of convoluted laminae. Geol. Mag. (Hertford, England), v. 97, no. 5, p. 409-421 incl. diagrams, Sept.-Oct. 1960.

2-60. Structural history of Triassic rocks of the Connecticut Valley belt and its regional implications New York Acad Sci Trans., ser. 2, v. 23, no. 2, p. 119-132, illus., Dec. 1960.

SANDERS, Norman K. See DAVIS, T. Neil 2-60

SANDERSON, Ivan T.

1-60. Riddle of the frozen giants Saturday Evening Post, v. 232, no. 29, p. 39, 82, 83, illus., Jan. 16, 1960.

SANDERSON, L.

1-60. Gypsum, an important mineral of antiquity Canadian Mining Jour., v. 81, no. 1, p. 57-59, Jan. 1960.

2-60 Yttrium and ytterbium. Canadian Mining Jour., v. 81, no. 7, p. 64-66, July 1960.

SANDERSON, Milton William

1-60 (and FARR, Thomas Howard) Amber with insect and plant inclusions from the Dominican Republic Science, v. 131, no. 3409, p. 1313, Apr. 29, 1960.

SANDLIN, Walter

1-60. A facies study of the Red Mountain formation of northwest Georgia [abs.] Georgia Mineral Newsletter, v. 13, no. 2, p. 106-107, summer 1960

SANDO, William Jasper

1-60. Distribution of corals in the Madison group and correlative strata in Montana, western Wyoming, and northeastern Utah Art. 100 in U. S. Geol. Survey Prof. Paper 400-B, p. B225-B227 incl. index map and sections, 1960.

2-60. Corals from well cores of Madison group, Williston basin [Montana] U. S. Geol. Survey Bull. 1071-F, p. 157-190, illus., 1960, Revised identifications of some Mississippian corals described in U.S.G.S Bulletin 1071-F, Jour. Paleontology, v. 35, no. 5, p. 1088-1089, Sept. 1961.

3-60. Late Cambrian and Early Ordovician sedimentation in Maryland, in Gates, Olcott, ed., Lower Paleozoic carbonate rocks in Maryland and Pennsylvania, Johns Hopkins Univ. Studies Geology, no. 18, Guidebook 3, p. 5-15 incl. geol. sketch map, section, chart, and diagrams, 1960.

4-60 (and DUTRO, John Thomas, Jr.) Stratigraphy and coral zonation of the Madison group and Brazer dolomite in northeastern Utah, western Wyoming, and southwestern Montana, in Overthrust belt of southwestern Wyoming and adjacent areas. Wyoming Geol. Assoc., 15th Ann. Field Conf., 1960, Guidebook, p. 117-126 incl. index map, chart, and illus., also sections, 1960.

SANDOR, J. E.

1-60. Surface exchange reactions of silver and its ions Canada Dept. Mines and Tech. Surveys Mines Br. Research Rept R 62, 22 p., illus., Apr. 19, 1960

SANFORD, John Theron

1-60. John Reed Moseley (1900-1959) Am Assoc. Petroleum Geologists Bull., v. 44, no. 9, p. 1583-1584 incl. portrait, Sept. 1960

SANFORD, Thomas H., Jr

1-60. (and WEST, Lewis R.) Use of step-drawdown tests to predict yields of wells [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 2024-2025, Dec. 1960.

2-60. (and WEST, Lewis R.) The use of step-drawdown tests to predict yields of wells [abs.]. Alabama Acad. Sci. Jour., v. 31, no. 6, p. 396-397, Oct 1960.

SANGREE, John Brewster, Jr

1-60. Silurian of northern Indiana [abs ] Dissert Abs , v 21, no 6, p. 1528-1529, Dec 1960

SARGENT, John David

1-60. Geophysical implications of Viking exploration in North America Internat. Geol. Cong., 21st, Copenhagen, 1960, Rept , pt 2, p. 179-181, 1960.

SARGENT, Kenneth Albert

1-60. Allanite occurrence in the Horn area, Bighorn Mountains, Wyoming [abs ] Dissert Abs., v 21, no 6, p 1529, Dec. 1960

SARIN, Dev Datt

1-60. Mounting heavy mineral grains Jour Sed. Petrology, v 30, no. 4, p 619, Dec. 1960

SASKATCHEWAN DEPARTMENT of MINERAL RESOURCES, Petroleum and Natural Gas Branch, Statistics Division

1-60. Petroleum and natural gas statistical year book, 1960 Saskatchewan Dept Mineral Resources Petroleum and Nat. Gas Br., Petroleum and Nat. Gas Statistical Year Book 1960, 70 p incl index map and tables [1960].

SASKATCHEWAN SOIL SURVEY

1-60. Physiographic divisions of Saskatchewan In coop. with Geology Div., Saskatchewan Research Council, and Geology Dept , Univ. Saskatchewan, 2 sheets, scale 1 1,520,640 (about 1 in to 24 mi.), with text, 1960

SASS, Daniel B.

1-60. Some aspects of the paleontology, stratigraphy, and sedimentation of the Corry sandstone of northwestern Pennsylvania [abs ] Dissert. Abs., v. 20, no 7, p 2758, Jan. 1960.

2-60. Some aspects of the paleontology, stratigraphy, and sedimentation of the Corry sandstone of northwestern Pennsylvania Bulls Am. Paleontology, v 41, no. 192, p. 251-381, illus. incl. geol. map, Nov. 22, 1960.

SATIN, Lowell R

1-60. Apparent-dip computer Geol Soc. America Bull , v. 71, no 2, p 231-233 incl diagrams, Feb. 1960.

SATO, Motoaki

1-60 (and MOONEY, Harold Morton) The electrochemical mechanism of sulfide self-potentials Geophysics, v. 25, no. 1, p 226-249 incl. diagrams, Feb 1960

2-60 Oxidation of sulfide ore bodies--[Pt.] 1, Geochemical environments in terms of Eh and pH, [Pt ] 2, Oxidation mechanisms of sulfide minerals at 25° C Pt 1 in Econ Geology, v 55, no 5, p 928-961 incl diagrams and table, Aug 1960, Pt 2 in v. 55, no 6, p 1202-1231 incl diagrams and tables, Sept -Oct 1960

3-60. Application of reaction Eh-pH diagrams to the problems of supergene oxidation and enrichment of sulfide ore bodies [abs ] Geol Soc. America Bull , v. 71, no 12, pt 2, p 1965-1966, Dec 1960, Econ Geology, v 55, no 6, p 1331, Sept -Oct. 1960.

SATO, Yasuo

1-60. (and LANDISMAN, Mark G , and EWING, William Maurice) Love-wave dispersion in a heterogeneous spherical earth [abs ] Geol Soc America Bull , v. 71, no 12, pt. 2, p 2074, Dec. 1960.

SATTERLY, Jack

1-60 Geology of the Dymont area Ontario Dept Mines [Ann Rept ] 1960, v. 69, pt 6, 32 p., illus incl geol map, 1960

2-60 (compiler) German [township] Ontario Dept Mines [Prelim Map P.37], scale 1 in. to 1/4 mi. [Jan 11, 1960]

3-60 Stock [township] Ontario Dept. Mines [Prelim. Map P-38], scale 1 in to 1/4 mi. [Jan 11, 1960]

## SATTERLY

4-60 (compiler) Taylor township Ontario Dept Mines [Prelim Geol Map P-39], scale 1 in. to 1/4 mi. [Jan. 11, 1960].

SAUCHELLI, Vincent. See EMIGH, George Donald 1-60, MacDONALD, R. A. 1-60

SAUL, LouElla Rankin See also POPENOE, W. P. 3-60

1-60 (and SAUL, Richard B.) Fossils--what they mean and how to collect them California Div Mines Mineral Inf. Service, v 13, no 7, p 1-7, illus., July 1960.

SAUL, Richard B. See SAUL, LouElla Rankin 1-60

SAUVÉ, Pierre

1-60 Roches éruptives basiques du Géosynclinal du Labrador à l'ouest de Fort Chimo [abs.] Assoc. Canadienne-Française Av. Sci. Annales, v 26, p. 111, 1960

SAVAGE, C. N.

1-60 Nature and origin of central Idaho blacksands Econ Geology, v. 55, no 4, p. 789-796 incl. sketch map, diagram, and table, June-July 1960.

SAVAGE, Donald Elvin

1-60 (and CURTIS, Garniss Hearfield, and EVERNDEN, Jack Foord) Integration of land-mammal geochronology and potassium-argon geochronometry [abs.] Geol. Soc. America Bull., v. 71, no 12, pt. 2, p. 1966, Dec. 1960

2-60. A survey of various late Cenozoic vertebrate faunas of the Panhandle of Texas--Pt 3, Felidae California Univ. Pubs. Geol. Sci., v. 36, no. 6, p. 317-343, illus., Sept. 22, 1960

SAVAGE, Jay Mathers

1-60. Evolution of a peninsular herpetofauna, in Symposium--The biogeography of Baja California and adjacent seas--Pt 2, Marine biotas Systematic Zoology, v. 9, nos. 3-4, p. 184-212, illus., Sept-Dec 1960

SAVEL'EV, B. A.

1-60. Determination of the age of ice islands in the Arctic in Problems of the North, No 1, 1958, translation of "Problemy Severa" Ottawa, Natl. Research Council, p. 346-350, Dec. 1960

SAVIT, Carl Hertz. See also VINCENZ, S. A. 1-60

1-60 Preliminary report--A stratigraphic seismogram Geophysics, v. 25, no 1, p. 312-321 incl. diagrams, Feb. 1960

2-60. Use seismic data to find stratigraphic traps Oil and Gas Jour., v. 58, no. 15, p. 182-184 incl. diagrams, Apr. 11, 1960.

SAVOLAHTI, A. O. M.

1-60 (and TYNI, M. H.) A new mineral-picking apparatus Am. Mineralogist, v 45, nos. 7-8, p. 901-903 incl. illus., July-Aug. 1960

SAWATZKY, Henry B.

1-60 (and AGARWAL, R. G., and WILSON, William Westfall) Helium prospects in southwest Saskatchewan Saskatchewan Dept. Mineral Resources Rept 49, 26 p incl. index map and illus., 1960

2-60. (and AGARWAL, R. G., and WILSON, William W.) Helium prospects in southwest Saskatchewan Oil in Canada, v. 12, no 23, p. 54-57, 60-70 incl. ads., 76, illus., Apr. 4, 1960

SAWHNEY, B. L.

1-60. Aluminum interlayers in clay minerals Internat. Cong. Soil Sci., 7th, Madison, Wisconsin, 1960, Trans., v. 4, comm. 7, p. 476-481 incl. diagrams, and tables, French and German summaries, and discussion [1960].

2-60. Aluminum interlayers in clay minerals, montmorillonite and vermiculite--laboratory synthesis Nature (London), v 187, no. 4733, p. 261-262, illus., July 16, 1960



SAYN-WITTGENSTEIN, Catherine. See NIBLETT, Edward Ronald 1-60

SCHACKNE, Stewart

1-60. (and DRAKE, N. D'Arcy) Oil for the world 2d revised ed, New York, N Y, Harper and Brothers Publishers, 142 p, illus., 1960

SCHAEFFER, Bobb

1-60. The Cretaceous holostean fish *Macrepistius* [Texas] Am Mus Novitates, no 2011, 18 p incl illus, Aug 18, 1960.

SCHAEFFER, Frederick E See also ANDERSON, W L 1-60, UTAH GEOL. SOC. 1-60

1-60. Stratigraphy of the Silver Island Mountains, in Geology of the Silver Island Mountains, Box Elder and Tooele Counties, Utah, and Elko County, Nevada Utah Geol Soc., Guidebook to the Geology of Utah, no. 15, p 15-113 incl. sections and illus, 1960.

2-60. Igneous rocks of the central and southern Silver Island Mountains, in Geology of the Silver Island Mountains, Box Elder and Tooele Counties, Utah, and Elko County, Nevada Utah Geol Soc, Guidebook to the Geology of Utah, no 15, p 121-124 incl. illus, 1960

3-60 Structural geology of the central and southern Silver Island Mountains, in Geology of the Silver Island Mountains, Box Elder and Tooele Counties, Utah, and Elko County, Nevada Utah Geol. Soc., Guidebook to the Geology of Utah, no 15, p 131-149 incl. sections and illus, 1960

SCHAEFFER, Katherine Maude Marie See also ECHOLS, D. J 1-60

1-60. Late Paleozoic bisaccate pollen from the Midcontinent area [abs.] Dissert. Abs, v. 21, no 6, p 1529-1530, Dec 1960

SCHAEFFER, Oliver Adam See also BASSETT, W A 2-60, BONNER, Francis Truesdale 1-60, STOENNER, R. W 1-60, 2-60

1-60 (and STOENNER, R. W, and DAVIS, Raymond, Jr) Argon-37 and argon-39 from the Hamlet fall of October 1959 and their relation to the spatial constancy of cosmic rays [abs.] Jour Geophys. Research, v 65, no 8, p 2521, Aug 1960

2-60. (and FISHER, David E) Exposure ages for iron meteorites Nature (London), v 186, no 4730, p 1040-1042, illus, June 25, 1960, discussion by H. Wanke and reply by O A Schaeffer, v. 188, no. 4756, p 1101-1102, Dec. 24, 1960

SCHAFER, George Miles See BAKER, F. J 1-60

SCHAIRER, John Frank. See also HYTONEN, Kai 1-60

1-60. (and YODER, Hatten Schuyler, Jr) The nature of residual liquids from crystallization, with data on the system nepheline-diopside-silica Am. Jour Sci, v. 258-A (Bradley Volume), p 273-283 incl diagrams and tables, 1960.

2-60 Experimental petrology Am. Geophys. Union Trans, v 41, no. 2, p 281-283, June 1960.

SCHALK, Marshall

1-60. A light-weight bottom sampler for sand or gravel [abs] Jour Geophys. Research, v 65, no. 8, p 2521, Aug 1960

SCHALLER, Waldemar Theodore

1-60. (and MROSE, Mary Emma) The naming of the hydrous magnesium borate minerals from Boron, California--A preliminary note Am. Mineralogist, v 45, nos 5-6, p. 732-734 incl table, May-June 1960

SCHANZ, John Jacob, Jr

1-60. The not-so-rare earth metals Mineral Industries, v 29, no. 4, p 6-7, incl. table, Jan 1960

SCHARON, Harry LeRoy See also GERLACH, G. S. 1-60

1-60. (and UHLEY, Robert Phil, and MEIDAV, Tsvi) Subsurface investigations of a plant site [Missouri] Am. Inst Mining, Metall., and Petroleum Engineers Trans 1959, v 214, p. 215-218 incl. diagrams, 1960

## SCHEANS

SCHEANS, Daniel J. See CRESSMAN, Luther Sheeleigh 1-60

SCHEFFER, Victor Blanchard

- 1-60. Spatial patterns in the world of nature *Pacific Discovery*, v. 13, no. 4, p 6-20 incl. illus., July-Aug. 1960.

SCHEID, Vernon Edward. See HOSTERMAN, John Wallace 1-60

SCHEIDEGGER, Adrian Eugen

- 1-60 Mathematical methods in geology *Am. Jour. Sci.*, v 258, no 3, p 218-221, Mar 1960.  
2-60. The orogenetic significance of a soft layer at 140 km. depth *Jour. Geology*, v 68, no. 2, p 177-181, Mar. 1960  
3-60. Analytical theory of slope development by undercutting *Alberta Soc. Petroleum Geologists Jour.*, v. 8, no 7, p 202-206 incl diagrams and table, July 1960, correction, no. 9, p 254, Sept. 1960.  
4-60. Underground dispersion of miscible liquids *Internat. Assoc. Sci Hydrology (Gentbrugge, Belgium) Pub.* 52, p 462-469 incl diagrams and French abs., 1960  
5-60. The physics of flow through porous media Revised ed, New York, N. Y., Macmillan Co., 313 p, illus., 1960, originally published 1957

SCHEIFLE, Kathleen. See CROSS, Jack L. 1-60-3-60

SCHELL, William Willkomm

- 1-60. (and CLARK, David Leigh) Lower Triassic foraminifera from Nevada *Micropaleontology*, v 6, no. 3, p. 291-295, illus., July 1960

SCHENCK, Hubert Gregory, 1897-1960

- 1-60. (and GRAHAM, Joseph John) Subdividing a geologic section *Tohoku Univ Sci. Repts.*, 2d ser., *Geology, Spec. V*, no 4, p. 92-99, illus., May 1960

SCHEUPLIN, Robert

- 1-60. (and GIBBS, Peter Godbe) Surface structure in corundum--[Pt.]1, Etching of dislocations *Am. Ceramic Soc. Jour*, v. 43, no. 9, p. 458-472 incl diagrams, tables, and illus., Sept. 1, 1960.

SCHILLING, John Harold

- 1-60. Mineral resources of Taos County, New Mexico *New Mexico Bur. Mines and Mineral Resources Bull* 71, 124 p., illus. incl geol. maps, 1960

SCHILLINGER, A W See POLLOCK, James Percy 1-60

SCHLAJKER, Erich Maren

- 1-60 Environment of oil and gas *Internat Geol Cong*, 21st, Copenhagen, 1960, Rept, pt. 11, p 101-112 incl. sketch maps, sections, diagrams, and illus., 1960.  
2-60. Environment of oil and gas [abs.] *Tulsa Geol Soc. Digest*, v 28, p. 88, 1960

SCHLAUDT, Charles McCammon

- 1-60. (and YOUNG, Keith Preston) Acrothoracic barnacles from the Texas Permian and Cretaceous *Jour Paleontology*, v 34, no 5, p 903-907 incl. diagrams, illus., Sept. 1960

SCHLEE, John Stevens

- 1-60 (and MOENCH, Robert Hadley) Jackpile sandstone [New Mexico]--Structurally localized fluvial deposit [abs.] *Am Assoc. Petroleum Geologists Bull*, v 44, no 7, p 1256, July 1960

SCHLEICHER, John Anthony See also HAM, W. E. 3-60

- 1-60 A study of the temperature necessary to determine the purity of gypsum by dehydration *Oklahoma Geology Notes*, v. 20, no 2, p 37-41, illus., Feb. 1960.

SCHLICKER, Herbert G.

- 1-60. (compiler) Progress of geologic studies in Oregon Ore -Bin, v 22, no. 4, p. 33-40 incl. index maps, Apr 1960.

SCHLOCKER, Julius

- 1-60 Rodingite from Angel Island, San Francisco Bay, California Art 145 in U S. Geol Survey Prof. Paper 400-B, p B311-B312 incl diagram, 1960  
2-60. Geologic features of the Franciscan formation of significance in engineering [abs] California Assoc Eng Geologists, 3d Ann Mtg, Berkeley, Oct 14-16, 1960, p 12 [1960].

SCHMALTZ, Lloyd John

- 1-60. Occurrence of vertebrate remains in Nebraskan till of north-central Missouri Jour Paleontology, v 34, no 4, p 762, July 1960  
2-60. Pebble lithology of Nebraskan and Kansan tills in north-central Missouri [abs.] Dissert. Abs, v 20, no. 7, p 2758, Jan 1960

SCHMIDT, Dwight Lyman

- 1-60. Pliocene silicic ignimbrites and basalt flows in the Bellevue quadrangle, Idaho [abs] Geol Soc. America Bull., v 71, no 12, pt 2, p. 2074, Dec 1960.

SCHMIDT, Paul Woodward See also HIGHT, Robert, Jr 1-60

- 1-60 (and HIGHT, Robert, Jr) Small angle X-ray scattering from clay suspensions [abs.] Acta Cryst., v. 13, pt. 12, p 1099-1100, Dec. 1960

SCHMIDT, Robert George. See BRYANT, Bruce Hazelton 1-60

SCHMIDT, Robert Gordon See GUILLOU, Robert Barton 1-60

SCHMIDT, Ronald Grover. See also CARPENTER, G. C 1-60

- 1-60. Ordovician Cynthiana formation of central Kentucky [abs] Geol. Soc. America Bull, v 71, no 12, pt. 2, p. 2025, Dec 1960

[SCHMIDT, Victor Edward]

- 1-60. [and JOHNSTONE, Robert H] Science for children, area 9--Rocks and soil (running water) Albany, New York State Education Dept, Bur. Elementary Curriculum Devel, 31 p, illus., 1960

SCHMITT, R A

- 1-60. (and others) Abundances of the rare-earth elements, lanthanum to lutetium, in chondritic meteorites Nature (London), v 186, no 4728, p 863-866, illus, June 11, 1960.

SCHNABEL, Robert Wayne

- 1-60. Bedrock geology of the Avon quadrangle, Connecticut U. S. Geol. Survey Geol. Quad Map GQ-134, scale 1 24,000 (1 in to 2,000 ft), with section and text, 1960.

SCHNEER, Cecil Jack

- 1-60 (and WHITING, Richard F.) Phase transformations in the system AgI [abs] Geol Soc America Bull, v 71, no. 12, pt. 2, p. 1966-1967, Dec. 1960.

SCHNEIDER, Robert. See RODIS, Harry George 1-60

SCHNEIDER, Samuel James, Jr.

- 1-60 The system of  $\text{Eu}_2\text{O}_3\text{-In}_2\text{O}_3$  [abs.] Am Ceramic Soc. Bull, v 39, no 4, p. 183, Apr. 1960.  
2-60 (and ROTH, Robert Sidney)  $\text{A}^{3+}\text{B}^{3+}\text{O}_3$ -type compounds and other double oxides of trivalent ions [abs.] Am. Ceramic Soc. Bull, v. 39, no 4, p 183, Apr 1960

SCHNEPFE, Marian M.

- 1-60. Cation exchange with vermiculite Art 71 in U S Geol Survey Prof Paper 400-B, p. B161-B163 incl tables, 1960.

## SCHOFF

SCHOFF, Stuart Leeson See MOGG, Joe Luther 1-60

SCHOFIELD, Wilfred Borden

- 1-60 (and ROBINSON, H ) Late-glacial and postglacial plant macrofossils from Gillis Lake, Richmond County, Nova Scotia Am Jour Sci , v 258, no 7, p 518-523 incl illus , Summer 1960

SCHOLL, David W

- 1-60 Relationship of the insular shelf sediments to the sedimentary environments and geology of Anacapa Island, California Jour Sed Petrology, v 30, no 1, p 123-139 incl geol and sediment distribution maps, diagrams, and tables, Mar 1960  
2-60 Pleistocene algal pinnacles at Searles Lake, California Jour Sed Petrology, v 30, no 3, p 414-431 incl sketch map, diagram, tables and illus , Sept 1960

SCHOLTEN, Robert

- 1-60 Sedimentation and tectonism in the thrust belt of southwestern Montana and east-central Idaho, in Overthrust belt of southwestern Wyoming and adjacent areas Wyoming Geol Assoc , 15th Ann Field Conf , 1960, Guidebook, p 73-83 incl index and tectonic maps, and sections, 1960

SCHOPF, James Morton

- 1-60 Field description and sampling of coal beds U S Geol Survey Bull 1111-B, p 25-70, illus , 1960  
2-60 Double cover-glass slides for plant microfossils Micropaleontology, v 6, no 2, p 237-240, illus , Apr 1960

SCHRAYER, G J

- 1-60 (and WEISMANN, T J., and ZARRELLA, W. M ) Geochemical studies on the McMurray sand oil and selected Alberta Basin crude oils [abs ] Geol Soc America Bull , v 71, no 12, pt 2, p 1968, Dec 1960

SCHREYER, William Friedrich

- 1-60 (and YODER, Hatten Schuyler, Jr ) Synthetic hydrous and argon-bearing cordierites [abs ] Geol Soc America Bull , v 71, no 12, pt 2, p 1968-1969, Dec 1960

SCHULTZ, Charles Bertrand

- 1-59 The camel story Nebraska Univ State Mus , Mus Notes, no 8, (Univ Nebraska News, v 38, no 26), p [1-3] incl sketch map and illus , Feb 1959  
2-60 Nebraska's changing climate Nebraska Univ State Mus , Mus Notes, no 12 (Univ Nebraska News, v 39, no 32), p [1-3] incl illus , Mar 1960.

SCHULTZ, Clarence H

- 1-60 Satcoy oil field California Oil Fields--Summ Operations Jan -June 1960, v 46, no 1, p 58-69, illus , 1960

SCHULTZ, Leonard Gene See also GILL, J R 1-60, TOURTELOT, H. A 1-60

- 1-60 (and TOURTELOT, Harry Allison, and GILL, James Rogers) Mineralogy of the Pierre shale (upper Cretaceous) in South Dakota and adjacent areas [abs ] Geol Soc America Bull , v 71, no 12, pt 2, p 2041, Dec 1960  
2-60 Quantitative X-ray determination of some aluminous clay minerals in rocks, in Swineford, Ada, ed , Clays and clay minerals Natl Conf Clays and Clay Minerals, 7th, Washington, D C , Oct 1958, Proc , p 216-224 incl diagrams, 1960 (Issued as Internat Earth Science Ser Mon 5 of Pergamon Press, New York )

SCHULZ, Rudolf

- 1-60 Actividad sísmica en El Salvador Energía Geotérmica Informe, no 1, p 30-33 incl sketch maps and diagram [1960]  
2-60 (and WEYL, Richard) Sismos y la estructura de la corteza terrestre en la parte Norte de Centro América El Salvador Servicio Geol Nac Bol Sismol Sept -Dec 1959, v 5, p 36-40, illus incl geol sketch map, Mar 1960  
3-60 (and WEYL, Richard) Erdbeben und Krustenaufbau im nördlichen Mittelamerika Neues Jahrb Geologie u Paläontologie Monatsh (Stuttgart, Germany), Jahrg 1960, Heft 5, p 193-201, illus incl geol sketch map, with Spanish abs , May 1960

## SCHUMM, Stanley Alfred

- 1-60. The shape of alluvial stream channels in relation to sediment type [abs.] Jour. Geophys. Research, v. 65, no. 5, p. 1638, May 1960
- 2-60. The effect of sediment type on the shape and stratification of some modern fluvial deposits Am Jour Sci., v. 258, no. 3, p. 177-184 incl. diagrams and illus., Mar 1960.
- 3-60. The shape of alluvial channels in relation to sediment type U. S. Geol. Survey Prof. Paper 352-B, p. 17-30, illus., 1960

## SCHURR, Sam H

- 1-60. (and NETSCHERT, Bruce C., and others) Energy in the American economy, 1850-1975--An economic study of its history and prospects Washington, D C, Resources for the Future, Inc., 774 p, illus., 1960

## SCHUSTER, Robert Lee

- 1-60. (and LOUNSBURY, Richard William) Durability studies of cherts and shales in gravels [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1969, Dec 1960.

## SCHWARCZ, Henry P

- 1-60. Sedimentation and regional metamorphism prior to intrusion of the Southern California batholith [abs.]. Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1969, Dec 1960.

## SCHWARTZ, George Melvin

- 1-60. (and THIEL, George Alfred) Guide to the minerals and rocks of Minnesota Minneapolis, Univ. Minnesota, Dept. Geology, and Minnesota Geol. Survey, 29 p incl. diagrams and table, revised 1960.

## SCHWARZACKER, Walter [Walther]

- 1-60. (and HUNKINS, Kenneth Leland) Dredged gravels from the central Arctic Ocean [abs.] Oil in Canada, v. 12, no. 16, p. 34, Feb. 15, 1960

## SCHWARZE, David Martin

- 1-60. Geology of the Lava Hot Springs area, Idaho Idaho State Coll. Mus. Occasional Paper 4, 51 p, illus., 1960

## SCHWENDIMAN, L. C

- 1-60 (and others) Disposal of industrial radioactive waste water at Hanford [Washington], in Symposium on technical developments in the handling and utilization of water and industrial waste waters Am Soc. Testing Materials Spec. Tech. Pub. 273, p. 3-21 incl. sketch maps, diagrams, table, illus., and discussion, 1960.

## SCHWENDINGER, Richard B.

- 1-60. (and MORTENSEN, James L.) Extraction, separation, and characterization of the high-molecular-weight organic materials in soil [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1970, Dec 1960.

## SCHWIND, Joseph J.

- 1-60. (and BERG, Joseph Wilbur, Jr., and COOK, Kenneth Lorimer) PS converted waves from large explosions [Utah and Nevada] Jour. Geophys. Research, v. 65, no. 11, p. 3817-3824 incl. sketch map, diagrams, and tables, Nov 1960

## SCISSON, Sidney E

- 1-60 Planning for mined underground LPG storage Oil and Gas Jour., v. 58, no. 18, p. 141-142, 144 incl. sketch map, diagram, and tables, May 2, 1960

## SCLAR, Charles Bertram See also DILLINGER, Lee 1-60

- 1-60. (and DILLINGER, Lee) The microscopic determination of the thickness and planeness of platelets in fine materials Am. Mineralogist, v. 45, nos. 7-8, p. 862-870 incl. diagram and illus., July-Aug 1960.

## SCOMILLIO

SCOMILLIO, John

- 1-60. (and MANTIA, Philip A., and LUGAY, Josefina, and NAGY, Bartholomew Stephen) Composition of the Athabasca petroleum in the vicinities of McMurray, Bitumount, and Fort Mackay in Alberta, Canada [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1971, Dec. 1960

SCOTT, Albert Duncan. See HANWAY, John Joseph 1-60

SCOTT, Gerald Lee

- 1-60. Permian sedimentary frame work of the Four Corners region [abs.] Dissert. Abs., v. 20, no. 11, p. 4370-4371, May 1960.

SCOTT, Glenn Robert. See also PETERSON, W. L. 1-60

- 1-60. Subdivision of the Quaternary alluvium east of the Front Range near Denver, Colorado Geol. Soc. America Bull., v. 71, no. 10, p. 1541-1543 incl. index map and table, Oct. 1960.  
2-60. Quaternary sequence east of the Front Range near Denver, Colorado, in Rocky Mtn. Assoc. Geologists, Guide to the geology of Colorado Denver, p. 206-211 incl. index and geol. sketch maps, section, and charts, 1960.

SCOTT, James H.

- 1-60. (and DODD, Philip Horace) Gamma-only assaying for disequilibrium corrections U. S. Atomic Energy Comm. Rept. RME-135, 20 p. incl. diagrams, tables, and illus., Apr. 1960.

SCOTT, John C. See also KNOWLES, D. B. 1-60

- 1-60. Ground-water resources of Macon County, Alabama--A reconnaissance report Alabama Geol. Survey Inf. Ser. 16, 97 p., illus. incl. geol. map, 1960.  
2-60. Ground-water resources of Autauga County, Alabama--A reconnaissance report Alabama Geol. Survey Inf. Ser. 21, 92 p., illus. incl. geol. map, 1960

SCOTT, John Stanley

- 1-60. Surficial geology of the Elbow-Outlook area, Saskatchewan, Canada [abs.] Dissert. Abs., v. 21, no. 5, p. 1163-1164, Nov. 1960

SCOTT, Richard Albert

- 1-60. (and BARGHOORN, Elso Sterrenberg, and LEOPOLD, Estella Bergere). How old are the angiosperms? Am. Jour. Sci., v. 258-A (Bradley Volume), p. 284-299, 1960.  
2-60. Pollen of *Ephedra* from the Chinle formation (Upper Triassic) [Arizona] and the genus *Equisetospirites* Micropaleontology, v. 6, no. 3, p. 271-276, illus., July 1960.

SCOTT, Ronald F.

- 1-60. Soil engineering in the Arctic Eng. and Sci., v. 23, no. 8, p. 22, 24, 26, 28 incl. diagrams, May 1960.

SCOTT, William C. See BAKER, Arthur, 3d 2-60

SCRUTON, Philip Challacombe

- 1-60. Delta building and the deltaic sequence, in Shepard, F. P., and others, ed., Recent sediments, northwest Gulf of Mexico Tulsa, Okla., Am. Assoc. Petroleum Geologists, p. 82-102, illus., 1960

SCUDDER, George D. See WALTON, William Clarence 5-60

SCULL, Berton James

- 1-60. Removal of heavy liquid separates from glass centrifuge tubes--Alternative method Jour. Sed. Petrology, v. 30, no. 4, p. 626, Dec. 1960

SEABER, Paul Robert

- 1-60. Hydrochemical facies and ground-water flow patterns in the English-town sand in the coastal plain of New Jersey [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1971, Dec. 1960

## SEAMAN, David Martin

- 1-60. Pegmatite minerals of the United States--Art. 8, Silica and silicates (Pt. 3, concluded) Rocks and Minerals, v. 35, nos. 1-2, p. 13-18, Jan.-Feb. 1960.
- 2-60. Recent fossil collecting in western Pennsylvania Rocks and Minerals, v. 35, nos. 5-6, p. 214-216, May-June 1960.
- 3-60. (and GALLANT, Robert P.) Spessartite garnite with hexoctahedral faces from Jail Hill, Haddam, Connecticut Rocks and Minerals, v. 35, nos. 9-10, p. 445-448 incl. sketch map, section, and diagrams, Sept -Oct. 1960.

## SEARL, Milton F.

- 1-60. Fossil fuels in the future U. S. Atomic Energy Comm. Rept. TID-8209, 63 p. incl. tables, Oct 1960

SEARLS, Fred, Jr. See LONG, A 1-60

## SEARS, Paul Bigelow

- 1-60. (and BOPP OESTE, Monika G.) Pollen analysis of the Michillinda peat seam [Mich.]. Ohio Jour. Sci., v. 60, no. 3, p. 149-154 incl. diagrams and table, May 1960.

## SEED, Harry Bolton

- 1-60. Soil strength during earthquakes World Conf. Earthquake Eng., 2d, Tokyo and Kyoto, Japan, July 11-18, 1960, Proc., v. 1, p. 183-195 incl. diagrams and discussion, Tokyo, Sci. Council Japan, 1960.

## SEEGER, Dietrich

- 1-60. Geología de la región de Ahuachapán [El Salvador] Energía Geotérmica Informe, no. 1, p. 48-65 incl. section and diagram [1960].
- 2-60. Hidrología de la región de Ahuachapán [El Salvador] Energía Geotérmica Informe, no. 1, p. 66-80 incl. sketch maps, diagrams, and tables [1960].
- 3-60. El campo Playón de Salitre [El Salvador] Energía Geotérmica Informe, no. 1, p. 89-97 incl. diagrams and table [1960].
- 4-60. Descripción de los núcleos de las perforaciones [El Salvador] Energía Geotérmica Informe, no. 1, p. 179-194 incl. tables and diagrams [1960]

## SEEWALD, Kenneth Oscar

- 1-60. Stratigraphy of the Austin chalk, McLennan County, Texas, in Cretaceous stratigraphy of the Grand and Black Prairies, east-central Texas Baylor Geol. Soc., Field Conf., Apr. 1960, Guidebook, p. 110-117, 1960

## SEFF, Philip

- 1-60. Preliminary report of the stratigraphy of the 111 Ranch beds, Graham County, Arizona Arizona Geol. Soc. Digest, v. 3, p. 137-140 incl. section, Mar. 1960.

## SEGERSTROM, Kenneth

- 1-60. Erosion and related phenomena at Parícutin [Mexico] in 1957 U. S. Geol. Survey Bull. 1104-A, p. 1-18, illus., 1960

SEGNIT, Egdar R. See HOLLAND, Heinrich Dieter 1-60

## SEGRE, Emilio Gino

- 1-60 (and FRIEDLANDER, Gerhart, and MEYERHOF, Walter E., editors) Annual review of nuclear science, V. 10 Palo Alto, Calif., Ann. Rev., 617 p., illus., 1960

## SEIFERT, Hans

- 1-60 (and BECK, B.) Zur Kenntnis der metamikten Minerale der Euxenit-Familie [abs.] Acta Cryst., v. 13, pt. 12, p. 1008, Dec. 1960

## SEIGEL, Harold O.

- 1-60. The role of induced polarization in mineral exploration [abs.] Canadian Mining and Metall. Bull., v. 53, no. 575, p. 194, Mar. 1960.

## SEIGLIE

SEIGLIE, George Alfredo

- 1-60. Notas sobre el límite Oligoceno-Mioceno Soc. Cubana Historia Nat. Mem., v 25, no. 1, p 21-31, illus., Dec. 10, 1960
- 2-60. Forma teratológica de *Orbitoides apiculata* Schlumberger Soc. Cubana Historia Nat. Mem., v 25, no 1, p 33-42, illus., Dec 10, 1960.
- 3-60. Una nueva especie de Heterohelicidae del Cretácico Superior de Cuba Soc. Cubana Historia Nat. Mem., v 24, no 2, p. 121-124, illus., Sept. 10, 1960.
- 4-60. (and DÍAZ VELASCO, Rafael, and HERRERA, Nicolás) Glosario de terminus geológicos Ing. Civil, v. 11, no 4, p 219-231, Apr. 1960
- 5-60. Dos generos y dos especies nuevos de Foraminíferos del Cretácico Superior de Cuba Asoc. Mexicana Geólogos Petroleros Bol., v. 12, nos 11-12, p 341-350, sketch maps, diagram, and illus., Nov -Dec. 1960.

SEILACHER, Adolf

- 1-60. Epizoans as a key to ammonoid ecology Jour. Paleontology, v. 34, no 1, p 189-193 incl. diagrams and illus., Jan 1960.

SELL, James D.

- 1-60. Diabase at the Magma Mine, Superior, Arizona Arizona Geol. Soc. Digest, v. 3, p 93-97 incl. diagram and table, Mar. 1960.

SELLERS, David H. A.

- 1-60. (and FURNISH, William Madison, Jr.) Mississippian ammonoids from northwestern Canada [British Columbia and Yukon] Jour. Paleontology, v 34, no. 6, p 1124-1128 incl. index map, diagrams, and table, illus., Nov. 1960

SEMKEN, Holmes A.

- 1-60. Vertebrate fossils from Longhorn Caverns, Burnet County, Texas [abs.] Natl. Speleol. Soc. NSS News, v 18, no. 7, p. 71, July 1960.

SEN, Buddhadev. See MALLIK, Kanai Lal 1-60

SEN, Sisir Kumar

- 1-60. Some aspects of the distribution of barium, strontium, iron, and titanium in plagioclase feldspars Jour. Geology, v 68, no. 6, p. 638-665 incl. diagrams and tables, Nov 1960.

SENFLE, Frank Edward. See also CUTTITTA, Frank 6-60, FRIEDMAN, I. I. 1-60, FRIEDMAN, I. N 3-60

- 1-60. (and THORPE, Arthur, and FLANAGAN, Francis James) Magnetic susceptibility and thermoluminescence of calcite Art 184 in U. S. Geol. Survey Prof. Paper 400-B, p. B401-B402 incl. tables, 1960

SERATA, Shosei

- 1-60. (and GLOYNA, Earnest Frederick) Principles of structural stability of underground salt cavities Jour. Geophys. Research, v. 65, no 9, p. 2979-2987 incl. diagrams, Sept. 1960

SERRATOSA, José M. See also BRADLEY, W. F. 1-60

- 1-60. Dehydration studies by infrared spectroscopy Am. Mineralogist, v. 45, nos. 9-10, p. 1101-1104 incl. diagrams, Sept.-Oct. 1960

SEVER, Charles W., Jr.

- 1-60. Geologic control of movement of ground water in crystalline rocks in Dawson County, Georgia [abs.] Georgia Acad. Sci. Bull., v 18, nos 1-2, p 16, Apr. 1960

SEVERINGHAUS, Nelson

- 1-60. Crushed stone, in Am. Inst. Mining, Metall., and Petroleum Engineers, Industrial minerals and rocks, p 285-302 incl. diagrams and tables, 1960.

SEVON, William D

- 1-60. Geology of the Ring Thunder quadrangle, South Dakota South Dakota Geol. Survey [Geol. Map], scale 1:62,500 (about 1 in. to 1 mi.), with section and text, 1960



- 2-60. Geology of the Spring Creek quadrangle, South Dakota South Dakota Geol. Survey [Geol. Map], scale 1 62,500 (about 1 in. to 1 mi.), with section and text, 1960.
- SHACKLETTE, Hansford T. See also CHAPMAN, R. M 1-60  
1-60. Soil and plant sampling at the Mahoney Creek lead-zinc deposit, Revillagigedo Island, southeastern Alaska Art. 48 in U S Geol Survey Prof. Paper 400-B, p. B102-B104 incl index map and tables, 1960.
- SHAFFER, Lysle Edward. See FLANGAS, William G. 1-60
- SHAFFER, Paul Raymond See FRYE, John Chapman 1-60
- SHALGOSKY, H. I.  
1-60. Fluorescent X-ray spectrography, Chap. 5 in Smales, A. A., and Wager, L R., ed, Methods in geochemistry New York, N. Y , Intersci. Publishers, p 111-147, illus , 1960
- SHAND, J. A. See DUFFUS, Henry John 1-60
- SHANK, S E. See LANGENHEIM, Ralph Louis, Jr 7-60
- SHANKLE, John Dyer, 2d  
1-60. The "Flippen" sandstone of parts of Taylor and Callahan Counties, Texas, in Abilene Geol. Soc., Geological contributions 1960, p 168-201, illus , 1960.
- SHANNON, Spencer S., Jr See ROSE, Charles K. 1-60
- SHANNON, Terry  
1-60. About caves Chicago, Ill , Melmont Publishers, 47 p., illus , 1960.
- SHAPIRO, Leonard  
1-60 Rapid determination of fluorine in phosphate rocks Anal. Chemistry, v. 32, no 4, p 569-576 incl. table, Apr 1960.  
2-60. A spectrophotometric method for the determination of FeO in rocks Art. 226 in U. S. Geol Survey Prof. Paper 400-B, p B496-B497, 1960.
- SHAPLEY, Harlow  
1-60. (and GAFFRON, Hans, chairman) The origin of life, Panel 1 in Tax, S., and Callender, C., eds., Evolution after Darwin, V 3 Chicago, Ill., Univ Chicago Press, p 69-105, 1960
- SHARMA, Balraj. See WHYTE, G N. 1-60
- SHARP, R A See SCHMITT, R A 1-60
- SHARP, Robert Phillip. See also ALLEN, C. R 1-60, 3-60  
1-60. Pleistocene glaciation in the Trinity Alps of northern California Am. Jour Sci , v. 258, no. 5, p 305-340 incl. sketch maps, diagrams, tables, and illus , May 1960.  
2-60 (and EPSTEIN<sup>a</sup>, Samuel, and VIDZIUNAS, Irene) Oxygen-isotope ratios in the Blue Glacier, Olympic Mountains, Washington, U.S.A Jour. Geophys. Research, v. 65, no. 12, p 4043-4059 incl sketch maps, diagrams, and tables, Dec. 1960  
3-60. Glaciers Eugene, Oregon State System Higher Education, Condon Lectures, 78 p., illus., 1960.  
4-60. Beno Gutenberg [1889-1960] Eng. and Sci., v 23, no. 5, p 20 incl. portrait, Feb 1960
- SHARP, Willard Edwin. See also PISTORIUS, C. W.F.T. 4-60  
1-60. The cell constants of artificial siderite Am Mineralogist, v. 45, nos 1-2, p 241-243, Jan -Feb. 1960.  
2-60. The movement of playa scrapers by the wind Jour Geology, v. 68, no. 5, p. 567-572 incl. diagrams and tables, Sept. 1960

## SHARP

SHARP, William N. See also HAWLEY, C. C. 1-60

- 1-60 (and HAWLEY, Charles Caldwell) Bertrandite-bearing greisen, a new beryllium ore, in the Lake George district, Colorado Art 35 in U. S. Geol. Survey Prof. Paper 400-B, p. B73-B74, 1960.

SHARPE, John I. See also LATULIPPE, Maurice 1-60

- 1-60. Preliminary report on Stukely area, Shefford and Stanstead electoral districts. Quebec Dept. Mines Mineral Deposits Br. Prelim. Rept. 422, 14 p., geol. map, 1960, also French ed.  
2-60. (and LATULIPPE, Maurice) Map showing distribution of sulphide deposits in the Val d'Or-Mattagami Lake area [Quebec]. Canadian Mining Jour., v. 81, no. 12, p. 62, Dec. 1960.

SHARTSIS, Jack Morris. See ORMSBY, Walter Clayton 1-60-3-60

SHAYER, Robert Harold

- 1-60. The Pennsylvanian ostracode *Bairdia oklahomaensis* in Indiana Jour. Paleontology, v. 34, no. 4, p. 656-670 incl. index map, diagrams, tables, and illus., July 1960.  
2-60. A paleontological viewpoint on a poor misunderstood ostracode from Indiana [abs.]. Indiana Acad. Sci. Proc. 1959, v. 69, p. 184-185, 1960.

SHAW, Alan B.

- 1-60. Quantitative fossil correlations [abs.]. Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1972, Dec. 1960.

SHAW, Charles Anderson

- 1-60. Oklahoma's Cimarron County could be another Golden Trend. Oil and Gas Jour., v. 58, no. 50, p. 164-167 incl. sketch maps and diagram, Dec. 12, 1960.

SHAW, Denis Martin. See also PEARSON, G. R. 1-60

- 1-60. Spectrochemical analysis of silicates using the Stallwood jet. Canadian Mineralogist, v. 6, pt. 4, p. 467-482, illus., 1960.  
2-60. The geochemistry of scapolite--Pt. 1, Previous work and general mineralogy. Jour. Petrology (Oxford, England), v. 1, no. 2, p. 218-260 incl. diagrams and tables, June 1960.  
3-60. The geochemistry of scapolite--Pt. 2, Trace elements, petrology, and general geochemistry. Jour. Petrology (Oxford, England), v. 1, no. 3, p. 261-285 incl. diagrams and tables, Oct. 1960.  
4-60 (and WICKREMASINGHE, O. C., and WEBER, Jon Noel Earl). Spectrochemical determination of lithium, sodium, potassium and rubidium in rocks and minerals using the STALLWOOD jet. Anal. Chim. Acta (Amsterdam), v. 22, no. 4, p. 398-400 incl. tables, Apr. 1960.

SHAW, Elizabeth H. See CROSS, Jack L. 1-60-3-60

SHEA, Edward P. See also SALES, R. H. 1-60

- 1-60. The use of geology in Butte [Montana] [abs.]. Mining Eng., v. 12, no. 12, p. 1248, Dec. 1960.

SHEA, F. S.

- 1-60. Exploration along the Windsor-Horton contact, Nova Scotia. Canadian Mining Jour., v. 81, no. 4, p. 105-108 incl. geol. sketch map, Apr. 1960.

SHEARER, Eugene Merle

- 1-60 (and ENGEL, James E.). Photogeomorphology and oil exploration in the Rocky Mountain region [abs.]. Am. Assoc. Petroleum Geologists Bull., v. 44, no. 6, p. 961, June 1960.  
2-60. (and ENGEL, James E.). Photogeomorphology and oil exploration in the Rocky Mountain region [abs.]. Am. Assoc. Petroleum Geologists Rocky Mtn. Sec. Geol. Record 1960, p. 162 [1960].

SHEARROW, George Gordon

- 1-60. New oil-hunting methods may boost Ohio production. Oil and Gas Jour., v. 58, no. 16, p. 183, 187-189, Apr. 18, 1960.

- 2-60. (and DeBROSSE, Theodore Anthony, and CALVERT, Warren Lytle) Oil and gas fields of Ohio (including underground storage areas) Ohio Div Geol. Survey, map, scale 1 in. to 6 mi., with section, revised, July 1960.
- SHEELER, John B. See also CHU, T. Y. 1-60
- 1-60. (and DAVIDSON, Donald Thomas) Further correlation of consistency limits of Iowa loess with clay content, in Davidson, D. T., Methods for testing engineering soils Iowa State Univ. Sci. and Technology, Iowa Eng. Expt Sta. Bull. 192 (Iowa State Highway Comm., Iowa Highway Research Board Bull 21), p 221-226 incl sketch map, diagrams, and tables, reprinted, Dec 14, 1960, originally published 1957
- SHEFFEY, Nola Bewley See ZUBOVIC, Peter 1-60-4-60
- SHELBURNE, Orville Berlin, Jr
- 1-60. Geology of the Boktukola syncline, southeastern Oklahoma Oklahoma Geol Survey Bull. 88, 84 p, illus. incl geol. map, Sept 1960.
- SHELDEN, Arthur William
- 1-60. Cenozoic faults and related geomorphic features in the Madison Valley, Montana, in West Yellowstone--Earthquake area Billings Geol. Soc, 11th Ann. Field Conf, Sept. 1960, [Guidebook] p. 178-184 incl sections and illus, 1960.
- SHELDON, Robert F
- 1-60 Midnite mine [Washington]--Geology and development Am. Inst. Mining, Metall., and Petroleum Engineers Trans 1959, v 214, p. 531-534 incl geol. sketch map, section, and illus., 1960.
- SHELL, Haskell Roy See GIBBS, Gerald V 1-60
- SHELTON, A Vay
- 1-60. (and NORDYKE, Milo D., and GOECKERMANN, Robert H.) The Neptune event, a nuclear explosive cratering experiment [Nevada] California, Univ., Livermore, Lawrence Radiation Lab. Rept. UCRL-5766, 32 p., illus, Apr. 19, 1960
- SHEN, H. W. See HORIKAWA, Kiyoshi 1-60
- SHEPARD, Anna O. See LOVERING, Thomas Seward 1-60, 5-60
- SHEPARD, Francis Parker. See also LANKFORD, R R 1-60
- 1-60. Outer terminations of west coast submarine canyons [abs.] Geol. Soc America Bull., v. 71, no 12, pt. 2, p 1972-1973, Dec 1960.
- 2-60. Recent sediment studies, 1955-1959, in Assoc Internat Sédimentologie, Symposium--Sédimentology and the oil industry [and] Bibliographie des travaux récents de sédimentologie, [presented at] 5th World Petroleum Cong., New York, 1959 Paris, Éd. Technip, p. 9-27 incl. sketch maps and discussion, 1960.
- 3-60. (and PHLEGER, Fred B, and Van ANDEL, Tjeerd H., editors) Recent sediments, northwest Gulf of Mexico--A symposium summarizing the results of work carried on in Project 51 of the American Petroleum Institute Tulsa, Okla., Am. Assoc. Petroleum Geologists, 394 p., illus. incl. geol maps, 1960. Includes individual papers which are cited separately.
- 4-60 Mississippi Delta--marginal environments, sediments, and growth, in Shepard, F. P., and others, ed., Recent sediments, northwest Gulf of Mexico Tulsa, Okla., Am Assoc Petroleum Geologists, p. 56-81, illus., 1960.
- 5-60. (and MOORE, David G) Bays of central Texas coast, in Shepard, F P., and others, ed, Recent sediments, northwest Gulf of Mexico Tulsa, Okla., Am. Assoc. Petroleum Geologists, p. 117-152, illus, 1960
- 6-60. Gulf Coast barriers, in Shepard, F. P., and others, ed., Recent sediments, northwest Gulf of Mexico Tulsa, Okla, Am. Assoc Petroleum Geologists, p 197-220, illus., 1960.

## SHEPARD

- 7-60 Rise of sea level along northwest Gulf of Mexico, in Shepard, F. P., and others, ed., Recent sediments, northwest Gulf of Mexico Tulsa, Okla., Am. Assoc. Petroleum Geologists, p. 338-344, illus., 1960  
8-60. (and MATHEWS, William Henry) Underwater delta of Fraser River, British Columbia [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 2075, Dec. 1960.

## SHEPPARD, Richard A.

- 1-60 (and HUNTER, Ralph E.) Chamosite oolites in the Devonian of Pennsylvania Jour. Sed. Petrology, v. 30, no. 4, p. 585-588 incl. illus., Dec. 1960

## SHERIDAN, Douglas Maynard. See WELLS, J. David 1-60

## SHERMAN, Harold. See FRENTROP, Arthur H. 1-60

## SHERWOOD, Alexander M. See FLANAGAN, Francis James 1-60

## SHICK, Robert L. See DAVISON, Kenneth 1-60

## SHIELDS, D. L. See DICKSON, F. W. 1-60

## SHIMER, John Asa

- 1-60. Edge of the land Nat. History, v. 69, no. 6, p. 8-18 incl. illus., June-July 1960

## SHIPEK, Carl J. See CARSON, Alfred James 1-60

## SHIPP, R. F.

- 1-60 (and MATELSKI, Roy P.) A microscopic determination of apatite and a study of phosphorus in some Nebraska soil profiles Soil Sci. Soc. America Proc., v. 24, no. 6, p. 450-452, illus., Nov.-Dec. 1960.

## SHIRLEY, Jack William

- 1-60. Structure and stratigraphy of Rayne field [Louisiana] [abs.] Am. Assoc. Petroleum Geologists Bull., v. 44, no. 9, p. 1603, Sept. 1960  
2-60 Structure and stratigraphy of Rayne Field [Louisiana] Gulf Coast Assoc. Geol. Soc. Trans., v. 10, p. 77-85 incl. index, structure, and isopach maps, and sections, 1960.

## SHIVELY, J. A. See NEWTON, Joseph 1-60

## SHKLANKA, R.

- 1-60. The Deception Lake Area (East Half), in Cheesman, R. L., Summary report of geological surveys conducted in the Precambrian area of Saskatchewan, 1960 Regina, Saskatchewan Dept. Mineral Resources, Mines Br., Geology Div., p. 8-9 [1960].

## SHNEIDEROV, Anatol

- 1-60. On the temperature of the earth's mantle-core boundary Boll. Geofisica Teorica ed Appl., anno 2, no. 8, p. 647-649, with Italian summary, Dec. 1960

## SHOEMAKER, Eugene Merle. See also CHAO, E. C.-T. 2-60, ELSTON, D. P. 3-60, MIESCH, A. T. 2-60

- 1-60. Brecciation and mixing of rock by strong shock Art. 192 in U. S. Geol. Survey Prof. Paper 400-B, p. B423-B425 incl. diagram, 1960.  
2-60. Penetration mechanics of high velocity meteorites, illustrated by Meteor Crater, Arizona Internat. Geol. Cong., 21st, Copenhagen, 1960, Rept., pt. 18, p. 418-434 incl. geol. sketch maps, sections, and diagrams, 1960.

## SHOR, George G., Jr.

- 1-60. Seismic-refraction studies at sea near southern and western Alaska [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 2075, Dec. 1960

- 2-60 Crustal structure of the Hawaiian Ridge near Gardner pinnacles  
Seismol. Soc. America Bull., v. 50, no 4, p 563-573 incl index map,  
section, and diagrams, Oct 1960.
- SHOREY, R.  
1-60. Detailed descriptions of rock specimens, App 1 in Bushnell, V. C.,  
ed., Scientific studies at Fletcher's ice island, T-3, 1952-1955, V 3  
U. S. Air Force Cambridge Research Center Geophysics Research  
Directorate Geophys. Research Paper 63, p. 96-107, tables, Apr. 1960.
- SHORT, James  
1-60. (and ROY, Rustum) The use of diffusion measurements to determine  
extent of crystalline solubility in alkaline halides near the eutectic tem-  
perature [abs.] Am Ceramic Soc. Bull., v. 39, no 4, p. 185, Apr. 1960.
- SHORT, Nicholas Martin  
1-60. Project Cowboy--Fracturing of rock salt by a contained high explosive  
California, Univ., Livermore, Lawrence Radiation Lab. Rept UCRL-6054,  
60 p incl diagrams, table, and illus., Nov. 10, 1960.
- SHOTTS, Reynold Quinn  
1-60. Coal reserve estimates on a regional basis Alabama Acad Sci.  
Jour, v. 31, no 3, p. 201-219, illus, Jan. 1960  
2-60. Correlations in the "Coal Measures" of the southeast Alabama  
Acad Sci Jour, v. 31, no. 6, p. 427-446 incl. sketch maps and diagrams,  
Oct. 1960.
- SHREVE, Ronald L.  
1-60. Geology of the Blackhawk landslide, Lucerne Valley, California [abs.]  
Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 2075-2076, Dec.  
1960
- SHROCK, Robert Rakes  
1-60 W[arren] J[udson] Mead [1883-1960], experimental geologist Science,  
v 132, no. 3435, p 1235-1236 incl. portrait, Oct 28, 1960  
2-60 Memorial to Irving Ballard Crosby (1891-1959) Geol Soc. America  
Proc. 1959, p. 117-120, portrait, Oct. 1960.
- SHUBAK, Kenneth E. See KESLING, Robert Vernon 3-60
- SHUK, Thomas See WILSON, Stanley D. 1-60
- SHUMAKER, Robert Clarke  
1-60. Geology of the Pawlet quadrangle, Vermont [abs.] Dissert Abs., v 21,  
no. 6, p. 1530, Dec 1960
- SHUMWAY, George. See also CARSOLA, A. J. 1-60  
1-60 Sound speed and absorption studies of marine sediments by a reso-  
nance method--Pts 1 and 2 Geophysics, v. 25, no. 2, p 451-467 incl.  
tables, Apr. 1960, no. 2, p. 659-682 incl. diagrams and tables, June 1960.  
2-60 (and IGELMAN, Kim) Computed sediment grain surface areas Jour.  
Sed. Petrology, v 30, no. 3, p 486-489 incl. diagrams, Sept 1960.
- SHURBET, Deskin Hunt, Jr.  
1-60. The effect of the Gulf of Mexico on Rayleigh wave dispersion Jour.  
Geophys. Research, v. 65, no. 4, p. 1251-1255 incl. sketch map, diagrams,  
and tables, Apr 1960.  
2-60. The P phase transmitted by crustal rock to intermediate distances  
Jour. Geophys. Research, v. 65, no 6, p. 1809-1814 incl. index map, dia-  
grams, and table, June 1960.
- SHURTZ, Robert F  
1-60. The electronic computer and statistics for predicting ore recovery  
Am Inst Mining, Metall, and Petroleum Engineers Trans 1959, v 214,  
p. 1035-1044 incl. diagrams and tables, 1960

## SHUSTER

SHUSTER, Carl Nathaniel, Jr.

- 1-60. Oysters in Delaware waters--their records, historic and geologic  
Estuarine Bull., v. 5, no. 3, p. 2-15 incl. sketch maps and illus., autumn  
1960

SHUTE, Barbara. See O'KEEFE, J. A. 2-60

SIEGEL, Frederic R.

- 1-60. The effect of strontium on the aragonite-calcite ratios of Pleistocene corals [Florida] Jour. Sed. Petrology, v. 30, no. 2, p. 297-304 incl. index map, diagram, tables, and illus., June 1960

SIEVER, Raymond. See also GARRELS, R. M. 1-60

- 1-60. Recent trends in American sedimentology, in Assoc. Internat. Sédimentologie, Symposium--Sedimentology and the oil industry [and] Bibliographie des travaux récents de sédimentologie, [presented at] 5th World Petroleum Cong., New York, 1959 Paris, Ed. Technip, p. 28-36 incl. discussion, 1960

- 2-60. (and others) Bibliographie des travaux Américains récents, in Assoc. Internat. Sédimentologie, Symposium--Sedimentology and the oil industry [and] Bibliographie des travaux récents de sédimentologie, [presented at] 5th World Petroleum Cong., New York, 1959 Paris, Ed. Technip, p. 73-109, 1960.

SIGNER, P

- 1-60. (and NIER, Alfred Otto Carl) The distribution of cosmic-ray-produced rare gases in iron meteorites Jour. Geophys. Research, v. 65, no. 9, p. 2947-2964 incl. diagrams and tables, Sept. 1960.

SIKABONYI, L. A

- 1-60. Problems of Devonian sedimentation in Northeastern British Columbia [abs.]. Canadian Oil and Gas Industries, v. 13, no. 4, p. 104, Apr. 1960.

SILBERLING, Norman John. See also TATLOCK, D. B. 1-60, WALLACE, R. E. 2-60, 3-60

- 1-60. Mesozoic stratigraphy of the Great Basin [abs.]. Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1973, Dec. 1960.

SILLMAN, Leonard R

- 1-60 The origin of the vertebrates Jour. Paleontology, v. 34, no. 3, p. 540-544, May 1960.

SILVER, Burr Arthur

- 1-60 Structural geology of McLennan County, in Cretaceous stratigraphy of the Grand and Black Prairies, east-central Texas Baylor Geol. Soc., Field Conf., Apr. 1960, Guidebook, p. 65-68 incl. sections, 1960

- 2-60. Economic geology of McLennan County, in Cretaceous stratigraphy of the Grand and Black Prairies, east-central Texas Baylor Geol. Soc., Field Conf., Apr. 1960, Guidebook, p. 128-136 incl. sketch maps, 1960

SILVER, Leon T. See also ALLEN, C. R. 2-60

- 1-60. (and DEUTSCH, Sarah) An experimental investigation of discordant isotopic ages in zircons [abs.] Jour. Geophys. Research, v. 65, no. 8, p. 2522, Aug. 1960.

- 2-60 (and McKINNEY, Charles R., and DEUTSCH, Sarah, and BOLINGER, Jane) Precambrian age determinations of some crystalline rocks of the San Gabriel Mountains of southern California [abs.]. Jour. Geophys. Research, v. 65, no. 8, p. 2522-2523 incl. table, Aug. 1960

- 3-60. Age determinations on Precambrian diabase differentiates in the Sierra Ancha, Gila County, Arizona [abs.]. Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1973-1974, Dec. 1960.

SILVERMAN, Arnold J. See also LONG, A. 1-60

- 1-60. (and LONG, Austin, and KULP, John Laurence) Age of Coeur d'Alene mineralization [Idaho]--An isotopic study Mining Eng., v. 12, no. 5, p. 470-471, May 1960. (Discussion of paper by G. M. Crosby, v. 11, no. 8, p. 697-700, July 1959)

SILVERMAN, E. N.

- 1-60. (and BATES, Thomas Fulcher) X-ray diffraction study of orientation in the Chattanooga shale *Am Mineralogist*, v. 45, nos 1-2, p 60-68 incl diagrams, tables, and illus., Jan -Feb 1960

SILVERMAN, Sol Robert

- 1-60. Carbon isotopic evidence on mechanisms of petroleum maturation [abs.] *Am. Assoc Petroleum Geologists Bull.*, v. 44, no. 7, p. 1256-1257, July 1960.

SIM, Victor W

- 1-60. A preliminary account of late "Wisconsin" glaciation in Melville Peninsula, N.W.T. *Canadian Geographer*, no 17, p. 21-34, illus., with French summary, Nov 1960
- 2-60 Maximum post-glacial marine submergence in northern Melville Peninsula [Northwest Territories] *Arctic*, v. 13, no 3, p. 178-193, illus, Sept. 1960.

SIMMS, Frederick E., Jr.

- 1-60. Paleotopographic control on sedimentation and analyses of joint patterns with emphasis on cleat of the Conemaugh and Monongahela formations near Morgantown, West Virginia *West Virginia Acad. Sci Proc* 1960, v. 32, p 180-183, Dec. 1960.

SIMON, Jack Aaron. See KOSANKE, Robert Max 1-60

SIMONETT, David S.

- 1-60. Development and grading of dunes in western Kansas *Assoc. Am. Geographers Annals*, v 50, no. 3, p. 216-241 incl. sketch maps, diagrams, tables, and illus, Sept. 1960

SIMONS, Daryl Baldwin. See also VANONI, V. A. 1-60, 2-60

- 1-60. (and RICHARDSON, Everett Vern) Resistance to flow in alluvial channels *Am. Soc Civil Engineers Proc*, v 86, paper 2485, *Jour Hydraulics Div*, no. HY 5, p 73-99 incl. diagrams, table, and illus, May 1960.

SIMONS, David R.

- 1-60. These are the shining mountains [Oregon]. *Sierra Club Repr. Ser.* no. 2, p 1-12 incl index map, also illus., Jan. 4, 1960, originally published 1959.

SIMONS, Elwyn LaVerne

- 1-60 New fossil primates--A review of the past decade *Am Scientist*, v. 48, no. 2, p. 179-192 incl tables, and illus, June 1960.
- 2-60 The Paleocene Pantodonta *Am. Philos. Soc. Trans* 1960, v. 50, pt 6, 81 p., illus, July 1960.

SIMONSON, Gerald H See DANIELS, Raymond Bryant 2-60

SIMONY, P. S

- 1-60 LeRoche township, District of Nipissing Ontario Dept. Mines Prelim. Map P.74, scale 1 in. to 1/4 mi, [Nov.] 1960
- 2-60. Cynthia township, District of Nipissing Ontario Dept. Mines Prelim. Map P.75, scale 1 in. to 1/4 mi, [Nov.] 1960
- 3-60. Belfast township, District of Nipissing Ontario Dept Mines Prelim. Map P.76, scale 1 in. to 1/4 mi., [Nov.] 1960.
- 4-60. Joan township, District of Nipissing. Ontario Dept Mines Prelim. Map P.77, scale 1 in. to 1/4 mi., [Nov.] 1960
- 5-60. Phyllis township, District of Nipissing Ontario Dept Mines Prelim. Map P.78, scale 1 in. to 1/4 mi, [Nov.] 1960

SIMPICH, Frederick, Jr.

- 1-60. Fountain of fire in Hawaii *Natl Geog. Mag*, v 117, no. 3, p 303-327, illus., Mar. 1960.

## SIMPSON

SIMPSON, Eugene Sidney

- 1-60 Summary of current geological research in the United States of America pertinent to radioactive waste disposal on land, in Disposal of radioactive wastes, V. 2 Internat Atomic Energy Agency, Sci Conf on Disposal of Radioactive Wastes, Monaco, Nov 16-21, 1959, Proc., v 2, p 517-531, with English, French, Russian, and Spanish abs, 1960
- 2-60. A ground water mechanism for the deposition of glacial till [abs.] Washington Acad. Sci Jour, v 50, no. 7, p 1-2, Nov. 1960

SIMPSON, George Gaylord

- 1-60. Notes on the measurement of faunal resemblance Am Jour. Sci, v 258-A (Bradley Volume), p 300-311 incl. tables, 1960.
- 2-60. Late Cretaceous and early Cenozoic in the San Juan Basin, in Rio Chama Country New Mexico Geol Soc, 11th Field Conf, Oct 1960, Guidebook, p 75-77, illus, 1960
- 3-60 (and HOWELL, Francis Clark, chairman) Man as an organism, Panel 3 in Tax, S., and Callender, C., eds, Evolution after Darwin, V. 3 Chicago, Ill., Univ. Chicago Press, p 145-174, 1960
- 4-60. The history of life, in Tax, S., ed, Evolution after Darwin, V 1 Chicago, Ill, Univ. Chicago Press, p 117-180 incl. illus, 1960.
- 5-60 (and ROE, Anne, and LEWONTIN, Richard Charles) Quantitative zoology Revised ed., New York N Y, Harcourt, Brace and Co., 440 p. incl diagrams and tables, 1960, originally published 1939
- 6-60. Diagnosis of the classes Reptilia and Mammalia Evolution, v 14, no. 3, p 388-392, Sept. 1960.

SIMPSON, Howard E

- 1-60. Geology of the Yankton area, South Dakota and Nebraska U. S Geol. Survey Prof Paper 328, 124 p. incl index and sketch maps, sections, correlation chart, diagrams, tables, and illus, also geol and physiog. maps, section, correlation chart, and profile, 1960

SIMPSON, Stephen Milton, Jr

- 1-60. Statistical approaches to certain problems in geophysics [abs] Massachusetts Inst Technology Abs. Theses 1953-54, p 95-97, 1960

SIMPSON, Thomas A See also HOPKINS, W. B 1-60

- 1-60. Structural interpretations in the Birmingham Red Iron Ore district, Alabama [abs] Geol Soc America Bull, v 71, no. 12, pt 2, p. 2025, Dec 1960.

SIMS, Paul Kibler. See also BARTON, P B, Jr. 2-60, TWETO, O. L 1-60, 4-60

- 1-60. Hypogene mineral zoning, Central City district, Colorado [abs.] Geol. Soc America Bull., v 71, no 12, pt 2, p 1974, Dec. 1960, Econ. Geology, v. 55, no 6, p 1328-1329, Sept -Oct. 1960
- 2-60. Geology of the Central City-Idaho Springs area, Front Range, Colorado, in Rocky Mtn. Assoc Geologists, Guide to the geology of Colorado Denver, p 279-285 incl. index and geol sketch maps, diagram, and table, 1960

SINCLAIR, A J.

- 1-60. Preliminary report on the Georget Lake area (East Half), Saguenay electoral district Quebec Dept Mines Geol Surveys Br Prelim. Rept. 414, 7 p, geol. map, 1960, also French ed

SINCLAIR, George Winston

- 1-60. Use of the term "variety" in paleontology Jour Paleontology, v. 34, no 1, p 201-202, Jan 1960.
- 2-60 The type concept in stratigraphy [abs] Royal Soc Canada Minutes Proc., 3d ser, v 54, App C, p. 36-37, 1960

SINCLAIR, William C.

- 1-60. Reconnaissance of the ground-water resources of Delta County, Michigan Michigan Geol Survey Div Prog Rept 24, 93 p, illus. incl geol. maps, 1960



SINGER, Phylis See HOLDEN, Alan 1-60

SINGEWALD, Joseph Theophilus, Jr.

- 1-60. Maryland, oil and gas potential a question mark World Oil, v. 150, no 7, p. 112-113, June 1960.

SINHA, A. P. B. See IRANI, K.

SINHA, Evelyn Zepel

- 1-60. Geomorphology of the lower Coastal Plain from the Savannah River area, Georgia, to the Roanoke River area, North Carolina [abs.] Dissert. Abs., v 20, no 7, p. 2759, Jan. 1960

SINKANKAS, John See SWITZER, George S. 2-60

SIPLE, George E

- 1-60. Piezometric levels in the Cretaceous sand aquifer of the Savannah River Basin Georgia Mineral Newsletter, v 13, no. 4, p 163-166, illus., winter 1960.  
2-60. Some geologic and hydrologic factors affecting limestone terranes of Tertiary age in South Carolina Southeastern Geology, v. 2, no. 1, p. 1-11, illus. incl. geol. sketch map, Aug. 1960

SISLER, Frederick David

- 1-60. Geomicrobiological effect on hydrogen-isotope equilibria in the marine environment [abs.] Geol Soc. America Bull., v. 71, no 12, pt. 2, p 1974, Dec 1960

SISSONS, J. B.

- 1-60. Subglacial, marginal, and other glacial drainage in the Syracuse-Oneida area, New York Geol. Soc. America Bull., v 71, no 11, p. 1575-1588, illus., Nov. 1960

SITLER, Robert Francis

- 1-60. (and BAKER, Jack) Thickness of loess in Clark County, Illinois Ohio Jour. Sci., v 60, no. 2, p 73-77 incl index and contour maps and diagram, Mar 1960

SKARTVEDT, Romayne. See COLLINSON, Charles William 1-60

SKEHAN, James Williams

- 1-60. Stratigraphy and structure in the southern part of the Green Mountain anticlinorium [abs.] Geol. Soc. America Bull., v 71, no. 12, pt 2, p. 1975, Dec 1960.

SKEMPTON, A W. See TERZAGHI, Karl 2-60

SKERL, A C.

- 1-60. Geology of the Texada iron mines, Texada Island, British Columbia [abs.] Geol Soc. America Bull., v. 71, no 12, pt. 2, p 2076, Dec 1960

SKEVINGTON, D.

- 1-60. A new variety of Orthoretolites hami Whittington [Oklahoma] Palaeontology (London), v. 2, pt. 2, p 226-235, illus., Mar. 1960

SKIBITZKE, Herbert E.

- 1-60. Electronic computers as an aid to the analysis of hydrologic problems Internat. Assoc. Sci Hydrology (Gentbrugge, Belgium) Pub 52, p. 347-358 incl diagrams, illus., and French abs., 1960  
2-60. Radioisotopes in the laboratory for studying ground-water flow Internat. Assoc Sci Hydrology (Gentbrugge, Belgium) Pub. 52, p. 513-523 incl. diagrams and illus., 1960.

SKILLING, Gordon F

- 1-60 Microfossil research Canadian Oil and Gas Industries, v 13, no. 10, p 39-40 incl table, Oct. 1960

## SKILLMAN

SKILLMAN, Margaret W

- 1-60. Historical geology laboratory manual 2d ed., Minneapolis, Minn., Burgess Publishing Co., 143 p incl. geol sketch maps, sketch maps, diagrams, sections, tables, charts, and illus., revised by V. B. Monnett, 1960

SKINNER, Brian John

- 1-60 (and BARTON, Paul Booth, Jr.) The substitution of oxygen for sulfur in wurtzite and sphalerite *Am. Mineralogist*, v 45, nos. 5-6, p 612-625 incl. diagram and tables, May-June 1960
- 2-60. (and EVANS, Howard Tasker, Jr.) Crystal chemistry of B-spodumene solid solutions on the join  $\text{Li}_2\text{O}-\text{Al}_2\text{O}_3-\text{SiO}_2$  *Am. Jour. Sci.*, v 258-A (Bradley Volume), p 312-324 incl. diagrams and tables, 1960.
- 3-60 Assemblage enargite-famatinite, a possible geologic thermometer [abs.] *Geol. Soc. America Bull.*, v. 71, no. 12, pt. 2, p 1975, Dec. 1960.

SKINNER, Hubert Clayton

- 1-60 Comparison of Mississippi submarine trench with Iberian trough [abs.] *Am. Assoc. Petroleum Geologists Bull.*, v 44, no 9, p. 1603, Sept. 1960
- 2-60. A comparison of the Mississippi Submarine Trench with the Iberian Trough *Gulf Coast Assoc. Geol. Soc. Trans.*, v. 10, p. 1-6 incl. index maps, and diagram, 1960

SKINNER, Robert E

- 1-60. Tectonic elements of the northern Green River area of Wyoming, in *Overthrust belt of southwestern Wyoming and adjacent areas* Wyoming Geol. Assoc., 15th Ann. Field Conf., 1960, Guidebook, p 86-88 incl. tectonic map, 1960
- 2-60. Proposed Kendall sandstone member of the Gypsum Spring formation, in *Overthrust belt of southwestern Wyoming and adjacent areas* Wyoming Geol. Assoc., 15th Ann. Field Conf., 1960, Guidebook, p 129-130, 1960

SKOUGSTAD, Marvin Wilmer

- 1-60. (and HERR, Clarence Albert) Occurrence of strontium in natural water *U. S. Geol. Survey Circ.* 420, 6 p incl. index map and tables, 1960

SLACK, Howard Addison

- 1-60 (and OTTE, Caryl, Jr.) Electric log interpretation in exploring for stratigraphic traps in shaly sands *Am. Assoc. Petroleum Geologists Bull.*, v. 44, no. 12, p. 1874-1894 incl. diagrams and sketch maps, Dec. 1960
- 2-60 (and OTTE, Caryl, Jr.) Electric log interpretation in exploring for stratigraphic traps in shaly sands [abs.] *Am. Assoc. Petroleum Geologists Bull.*, v 44, no 7, p. 1257, July 1960

SLAUGHTER, Bob H.

- 1-60 A new species of *Smilodon* from a late Pleistocene alluvial terrace deposit of the Trinity River [Texas] *Jour. Paleontology*, v 34, no. 3, p 486-492 incl. diagram and table, illus., May 1960

SLAUGHTER, Maynard

- 1-60. (and MILNE, Ivan Herbert) The formation of chlorite-like structures from montmorillonite, in Swineford, Ada, ed., *Clays and clay minerals Natl. Conf. Clays and Clay Minerals*, 7th, Washington, D. C., Oct 1958, Proc., p 114-124 incl. diagrams and illus., 1960. (Issued as *Internat. Earth Science Ser. Mon.* 5 of Pergamon Press, New York.)

SLAWSON, William Francis See also AUSTIN, C. F. 1-60

- 1-60 (and AUSTIN, Carl Fulton) Anomalous leads from a selected geological environment in west-central New Mexico *Nature (London)*, v. 187, no. 4735, p. 400-401, illus., July 30, 1960

SLEMMONS, David Burton

- 1-60. (and DAVIS, Terry E.) Relative speed and accuracy of some methods

of measuring the position of optical directions by universal stage [abs.] [abs.] Geol. Soc. America Bull., v. 71, no 12, pt 2, p 2076-2077, Dec. 1960.

## SLICHTER, Louis Byrnes

- 1-60. The need of a new philosophy of prospecting Mining Eng., v. 12, no. 6, p. 570-576 incl. diagrams and table, June 1960
- 2-60. The need of a new philosophy of prospecting Canadian Mining Manual 1960, p 11-21 incl. ads, illus [1960]

SLOAN, Robert Evan See ZANGERL, Rainer 1-60SLOAN, William W. See INTERMOUNTAIN ASSOC. PETROLEUM GEOLOGISTS 1-60

## SLOANE, Bruce C

- 1-60. Alluvial fans from Jack Creek to Mill Creek along the west flank of the Madison Range, Montana, in West Yellowstone--Earthquake area Billings Geol Soc, 11th Ann Field Conf, Sept 1960, [Guidebook] p. 174-177 incl. profiles and illus., 1960.

## SLOSS, Laurence Louis

- 1-60. Concepts and applications of stratigraphic facies in North America Internat. Geol Cong, 21st, Copenhagen, 1960, Rept., pt 12, p. 7-18 incl chart, 1960.
- 2-60 Interregional time-stratigraphic correlation [abs.] Geol Soc America Bull, v. 71, no 12, pt 2, p 1976, Dec. 1960
- 3-60 Evolution of concepts on the Eastern Great Basin, in Geology of east central Nevada Intermountain Assoc. Petroleum Geologists, 11th Ann. Field Conf., 1960 Guidebook, p. 11-16 incl sketch maps, 1960
- 4-60. (and DAPPLES, Edward Charles, and KRUMBEIN, William Christian) Lithofacies maps--An atlas of the United States and southern Canada New York, N Y., John Wiley and Sons, 108 p, illus, 1960

## SMALES, Albert Arthur

- 1-60. (and WAGER, Lawrence Rickard, editors) Methods in geochemistry New York, N. Y., Intersci. Publishers, 464 p, illus, 1960 Contains individual papers which are cited separately

## SMEDES, Harry Wynn

- 1-60. Early Tertiary volcanic geology of an area north and west of Butte, Montana. Art. 12 in U. S Geol Survey Prof Paper 400-B, p B23-B24 incl section, 1960
- 2-60. Mesozoic thrust faults in the northern Willowa Mountains, Oregon [abs] Geol. Soc America Bull., v. 71, no 12, pt. 2, p 1977, Dec 1960.
- 3-60 Monzonite ring dikes along the margin of the Antelope Creek stock, Montana [abs] Geol. Soc. America Bull., v 71, no 12, pt 2, p 1977, Dec. 1960
- 4-60. Structural interpretation of western Montana and northern Idaho [abs] Washington Acad. Sci. Jour., v 50, no 7, p 8, Nov 1960

SMILEY, Charles J See LANGENHEIM, Ralph Louis, Jr 1-60SMILEY, Terah LeRoy. See HARSHBARGER, John William 2-60

## SMITH, Allyn Goodwin

- 1-60 Paul Bartsch (1871-1960) Veliger, v 3, no 1, p 32, July 1, 1960
- 2-60. Amphineura, in Joint Comm Invertebrate Paleontology, Treatise on invertebrate paleontology--Pt I, Mollusca 1 Lawrence, Kans., Geol. Soc. America and Univ Kansas Press, p. I41-I76 incl illus, 1960

## SMITH, Arthur Y.

- 1-60. Heavy-metal (Zn, Pb, Cu) content of stream sediments of part of Westmorland County, New Brunswick Canada Geol Survey Paper 59-12, 8 p., illus. incl geol map, 1960

## SMITH

SMITH, Basil L. See BENNETT, Walter P. 1-60

SMITH, Baxter L. See also PRIDDY, R. R. 2-60

- 1-60. Dauphin Island, Alabama, in Cenozoic of southeast Mississippi and southwest Alabama Mississippi Geol Soc , 15th Field Trip, May 1960, Guidebook, p. 27-29 incl. sketch maps, 1960

SMITH, Billy George. See GOERING, Milford Wayne 1-60

SMITH, Charles H. See also CANADA GEOL. SURVEY 11-60

- 1-60. (and MacGREGOR, Ian D.) Ultrabasic intrusive conditions illustrated by the Mount Albert ultrabasic pluton, Gaspé, Quebec [abs.] Geol. Soc. America Bull., v 71, no 12, pt. 2, p. 1978, Dec 1960.  
2-60 Diamonds in the Great Lakes area--A geological enigma Canadian Mining Jour., v 81, no 7, p 51-52 incl. sketch map, July 1960

SMITH, Chester Martin, Jr See WRIGHT, Harold Douglas 3-60

SMITH, Clay T. See also BUDDING, A. J. 1-60

- 1-60. From X-rays to fission, a metamorphosis in mining, in Geology of the Paradox Basin fold and fault belt Four Corners Geol. Soc., 3d Field Conf , 1960, [Guidebook] p. 109-114, 1960

SMITH, David Dwyer

- 1-60. Origin of parallel pattern of meltwater lakes on Fletcher's Ice Island, T-3 Internat. Geol Cong , 21st, Copenhagen, 1960, Rept , pt. 21, p 51-59 incl diagram and illus., 1960.  
2-60 Compound erosion surface on the San Francisco Peninsula, California [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt 2, p 1978-1979, Dec 1960  
3-60 (and DOLAN, Robert G ) Erosional development of beach cusps along the Outer Banks of North Carolina [abs.] Geol Soc. America Bull., v. 71, no. 12, pt. 2, p 1979, Dec. 1960  
4-60 The geomorphology of part of the San Francisco Peninsula, California [abs.] Dissert. Abs , v. 20, no 11, p. 4371-4372, May 1960

SMITH, Frank A.

- 1-60. (compiler) Valley County Nebraska Univ. Conserv. and Survey Div., Nebraska Water Survey Test Hole Rept 2, 121 p. incl sketch map, diagram, and tables, Mar. 1960  
2-60. (compiler) Sherman County Nebraska Univ Conserv. and Survey Div., Nebraska Water Survey Test Hole Rept. 1, 132 p incl. sketch map, diagram, and tables, Mar 1960.  
3-60 Logs of test-holes--Valley County, Nebraska Lincoln Univ. Nebraska, Conserv and Survey Div , 121 p , in cooperation with U. S. Geol. Survey, 1960  
4-60 Logs of test holes--Sherman County, Nebraska Lincoln Univ Nebraska, Conserv. and Survey Div , 121 p , in cooperation with U. S. Geol. Survey, 1960.

SMITH, Fred L

- 1-60. (and YOUNG, Thomas R.) Nuclear explosives and mining costs California, Univ , Livermore, Lawrence Radiation Lab Rept. UCRL-5928, 35 p incl. diagrams, July 1960  
2-60 Radioisotopes in the mineral industry Mines Mag , v 50, no 5, p 32-34 incl diagrams, May 1960.

SMITH, Frederick E

- 1-60. The Moody's Branch member of the Caddell shale, in Jackson group, Catahoula and Oakville formations, and associated structures of northern Grimes County, Texas Houston Geol. Soc., Ann. Field Trip, May 1960, Guidebook, p 20, illus , 1960

SMITH, G H See ATKINS, E R , Jr. 1-60

## SMITH, George Irving

- 1-60. Time of the last displacement on the middle part of the Garlock fault, California Art. 128 in U.S. Geol. Survey Prof. Paper 400-B, p B280, 1960
- 2-60. Estimate of total displacement on the Garlock fault, southeastern California [abs.] Geol. Soc. America Bull., v. 71, no 12, pt. 2, p. 1979, Dec. 1960

SMITH, Harry Nelson. See STANFIELD, Kenneth Edison 1-60

SMITH, Henry Landiss See ENGLUND, Kenneth John 1-60

SMITH, Howard See CARPENTER, Gerald Leon 1-60

## SMITH, James B.

- 1-60. (and BADER, Richard George) Organic, metal-ion, and carbon dioxide uptake by sedimentary minerals and its significance in the marine environment [abs.] Geol. Soc. America Bull., v 71, no 12, pt 2, p 1980, Dec. 1960.

SMITH, J. R. See MULLIS, Ira B. 1-60

## SMITH, James Robert

- 1-60. South half of McKenzie township, Abitibi-East electoral district-- Pt 1, Southwest quarter and north half of southeast quarter Quebec Dept. Mines Mineral Deposits Br Geol Rept 95, p. 1-40, geol. map, 1960.
- 2-60. Optical properties of low-temperature plagioclase, App. 3 in Stillwater igneous complex, Montana Geol. Soc. America Mem 80, p 191-219 incl. diagrams and tables, 1960

## SMITH, James W

- 1-60. Geology of an area along the Cartersville fault near Fairmont, Georgia [abs ] Georgia Mineral Newsletter, v 13, no 2, p 107, summer 1960

## SMITH, Jane Elizabeth Inch

- 1-60. Ostracods from the Middle Devonian Traverse group of Emmet and Charlevoix Counties of Michigan [abs ] Dissert. Abs., v. 20, no 11, p. 4372, May 1960

SMITH, John Ward. See also STANFIELD, K. E 1-60

- 1-60. (and HIGBY, L. Warren) Preparation of organic concentrate from Green River oil shale Anal Chemistry, v. 32, no 12, p. 1718-1719, Nov 1960.

SMITH, Joseph Victor. See also AGRELL, S. O. 1-60, BROWN, W. Liddle 1-60

- 1-60. Phase diagrams for alkali feldspars Internat Geol Cong., 21st, Copenhagen, 1960, Rept , pt. 21, p 185-193 incl. diagrams, 1960.
- 2-60. Complex disorder of H<sub>2</sub>O molecules and Ca ions in wet-Ca chabazite [abs.] Geol. Soc. America Bull, v 71, no. 12, pt. 2, p. 1980, Dec. 1960.
- 3-60. Current and future operations of the X-ray Powder Data File [abs ] Acta Cryst, v 13, pt 12, p 1098, Dec 1960.
- 4-60. (and others) The crystal structure of spurrite, Ca<sub>5</sub>(SiO<sub>4</sub>)<sub>2</sub>CO<sub>3</sub>-- [Pt.] 2, Description of structure Acta Cryst, v. 13, pt 6, p 454-458 incl diagrams and tables, June 1960.
- 5-60. Correlation of elemental analysis and phase identification as viewed by a mineralogist, in Symposium on identification of water-formed deposits Am Soc Testing Materials Spec Tech. Pub 256, p 60-71, illus., Feb 1960

## SMITH, Markwick Kern, Jr.

- 1-60. Filter theory of linear operators with seismic applications [abs.] Massachusetts Inst. Technology Abs Theses 1953-54, p. 97-98, 1960

## SMITH

SMITH, Maurice Harold

- 1-60 Revised nomenclature for Williston basin [abs ] Am Assoc Petroleum Geologists Bull , v. 44, no. 6, p. 959-960, June 1960.

SMITH, Ned Myron. See GATES, Gary Rickey 1-60

SMITH, Norman O. See DUFFY, J. R. 1-60

SMITH, Patsy Beckstead

- 1-60 Foraminifera of the Monterey shale and Puente formation, Santa Ana Mountains and San Juan Capistrano area, California U. S. Geol. Survey Prof. Paper 294-M, p. 463-495, illus. incl. geol. map, 1960  
2-60. Fossil Foraminifera from the southeastern California deserts Art. 127 in U. S. Geol. Survey Prof. Paper 400-B, p. B278-B279, 1960.

SMITH, Ralph Irvin See SAHINEN, Uuno Mathias 1-60

SMITH, Raymond Newton. See KESLING, Robert Vernon 3-60

SMITH, Rex O.

- 1-60. Geohydrologic evaluation of streamflow records in the Big Wood River basin, Idaho U. S. Geol. Survey Water-Supply Paper 1479, 68 p, illus incl. geol. map, 1960.

SMITH, Robert Leland. See also FRIEDMAN, Irving 2-60

- 1-60. Ash flows Geol. Soc. America Bull , v 71, no. 6, p. 795-841 incl. diagrams, illus , June 1960.  
2-60. (and BAILEY, Roy Alden, and ROSS, Clarence Samuel) Calderas-- Aspects of their structural evolution and their relation to ring complexes [abs.] Geol. Soc. America Bull , v. 71, no 12, pt. 2, p. 1981, Dec. 1960.  
3-60. Zones and zonal variations in welded ash flows U. S. Geol. Survey Prof. Paper 354-F, p. 149-159, illus , 1960

SMITH, Travis Ward

- 1-60. Landslides in the Franciscan formation [abs ] California Assoc. Eng. Geologists, 3d Ann. Mtg., Berkeley, Oct. 14-16, 1960, p. 12-13, [1960].

SMITH, W. Campbell

- 1-60. Memorial to Leonard James Spencer (1870-1959) Geol. Soc. America Proc. 1959, p. 157, portrait, Oct. 1960

SMITH, Walter Lorane

- 1-60. History of oil exploration in Railroad Valley, Nye County, Nevada, in Geology of east central Nevada Intermountain Assoc. Petroleum Geologists, 11th Ann. Field Conf , 1960 Guidebook, p. 233-236 incl. sketch map, section, and illus., 1960

SMITH, Ward Conwell See also BENDA, W. K. 1-60

- 1-60 Geological features of boron mineral deposits [abs ] Mining Eng., v 12, no. 6, p. 534, June 1960.  
2-60. Borax and borates, Pt. 1, in Am. Inst. Mining, Metall., and Petroleum Engineers, Industrial minerals and rocks, p. 103-118 incl. map, diagram, and tables, 1960.

SMITH, William Lee See also FLANAGAN, F. J. 1-60

- 1-60. (and STONE, Jerome, and ROSS, Daphne Riska, and LEVINE, Harry) Doverite, a possible new yttrium fluocarbonate from Dover, Morris County, New Jersey Am Mineralogist, v. 45, nos 1-2, p. 92-98 incl. tables, Jan.-Feb. 1960.

SMITH, William Ogden

- 1-60. (and VETTER, Carl Peter, and CUMMINGS, G. B., and others) Comprehensive survey of sedimentation in Lake Mead [Arizona-Nevada], 1948-49 U. S. Geol. Survey Prof. Paper 295, 254 p, illus incl. geol. maps, 1960.

SMITHERNGALE, W. G

- 1-60. Geology of Nictaux-Torbrook map-area, Annapolis and Kings counties, Nova Scotia Canada Geol Survey Paper 60-13, 32 p , illus. incl geol. map, 1960.

SMOOT, Thomas William

- 1-60. Clay mineralogy of pre-Pennsylvanian sandstones and shales of the Illinois Basin--Pt 1, Relation of permeability to clay mineral suites Illinois State Geol Survey Div Circ. 286, 20 p incl. index map, diagrams, and tables, 1960  
2-60. (and NARAIN, Kedar) Clay mineralogy of pre-Pennsylvanian sandstones and shales of the Illinois Basin--Pt 2, Clay mineral variations between oil-bearing and non-oil-bearing sandstones Illinois State Geol. Survey Div Circ 287, 14 p. incl. index map, diagrams, and tables, 1960.  
3-60. Clay mineralogy of pre-Pennsylvanian sandstones and shales of the Illinois Basin--Pt. 3, Clay minerals of various facies of some Chester formations Illinois State Geol. Survey Div Circ. 293, 19 p. incl. facies sketch maps and diagram, 1960.

SMOUSE, DeForrest See BULLOCK, Kenneth C. 1-60

SMOUT, Alan H.

- 1-60 (and EAMES, F. E ) The distinction between Operculina and Operculinella. Cushman Found. Foram. Research Contr , v 11, pt. 4, p 109-114, Oct. 1960.

SNAVELY, Parke Detweiler, Jr. See BROWN, Robert David, Jr. 2-60, GOWER, Howard Dale 1-60

SNELGROVE, Alfred Kitchener. See also NEILSON, J M 1-60

- 1-60. Opportunities in geology and geological engineering New York, N. Y., Vocational Guidance Manuals, 86 p , tables, 1960

SNOW, Geoffrey G

- 1-60. (and STRINGHAM, Bronson Ferrin) Plutonic rocks of the Sonoma quadrangle, Nevada [abs.]. Geol Soc America Bull , v. 71, no 12, pt 2, p 1981, Dec. 1960

SNYDER, Charles Theodore

- 1-60. The Pleistocene lake in Spring Valley, Nevada, and its climatic implications [abs ] Jour. Geophys. Research, v 65, no 8, p. 2524-2525, Aug. 1960.

SNYDER, Frank G

- 1-60. (and ODELL, James W.) Some aspects of mine geology in the Southeast Missouri lead district [abs ] Mining Eng , v. 12, no 12, p. 1248, Dec 1960

SNYDER, James D See DELLWIG, L. F 2-60

SNYDER, Thomas Elliot

- 1-60 Fossil termites from Tertiary amber of Chiapas, México (Isoptera) Jour Paleontology, v 34, no 3, p. 493-494, illus , May 1960

SOCIETY of ECONOMIC PALEONTOLOGISTS and MINERALOGISTS See COOPER, Byron Nelson 1-60, GATES, Olcott 1-60, OWENS, James Patrick 4-60

SOCIETY of ECONOMIC PALEONTOLOGISTS and MINERALOGISTS, Gulf Coast Section See also HOUSTON GEOL. SOC. 1-60

- 1-60. Type Localities Project, Unit 1 Baton Rouge, La , [58] p , illus , Oct. 1960

S[OCIETY of] E[CONOMIC] P[ALEONTOLOGISTS and] M[INERALOGISTS], Pacific Section

- 1-60. (PAYNE, Max B., leader) Type Panoche, Panoche Hills area, Fresno

SOCIETY OF - - -

County, California, 1960 spring field trip, April 15-16, 1960, guidebook [18] p incl index and geol. sketch maps, and charts, 1960

SOCIETY of ECONOMIC PALEONTOLOGISTS and MINERALOGISTS, Permian Basin Chapter

- 1-60. (BROWN, Leonard Franklin, Jr, leader) A study of the Cisco facies near Breckenridge, Texas, 1960 annual field trip, April 1960 [Guidebook] 66 p., illus incl geol. maps, 1960. Includes individual papers which are cited separately.

SOCOLOW, Arthur Abraham

- 1-60. Structural interpretations from aeromagnetic data [Pennsylvania] [abs] Geol. Soc. America Bull., v 71, no. 12, pt 2, p. 1982, Dec 1960.  
2-60. Geologic interpretation of aeromagnetic maps, Temple, Fleetwood, Manatawny, Reading, Birdsboro, and Boyertown quadrangles Pennsylvania Geol. Survey, 4th ser, Inf. Circ 38, 26 p, illus, 1960.  
3-60. Geologic interpretation of aeromagnetic maps, Easton and Riegelsville quadrangles Pennsylvania Geol Survey, 4th ser., Inf. Circ 39, 6 p., illus., 1960  
4-60. Geologic interpretation of aeromagnetic maps, Hatboro and Langhorne quadrangles Pennsylvania Geol. Survey, 4th ser, Inf Circ 40, 7 p, illus., 1960.  
5-60 Geologic interpretation of certain aeromagnetic maps of Bucks, Montgomery, and Lehigh Counties Pennsylvania Geol Survey, 4th ser., Inf. Circ. 42, 6 p., illus., 1960.  
6-60. Geologic interpretation of aeromagnetic maps, Pottstown, Wagontown, Downingtown, Coatesville, Unionville, Honeybrook, and Parkesburg quadrangles Pennsylvania Geol Survey, 4th ser, Inf Circ 37, 14 p, illus., 1960.

SODD, Vincent J.

- 1-60. (and GOLDIN, Abraham Samuel, and VELTEN, Richard J.) Determination of radioactivity in saline waters Anal. Chemistry, v 32, no. 1, p 25-26 incl table, Jan 1960

SOGNAES, Reidar F See POSNER, Aaron Sidney 1-60

SOHL, Norman Frederick

- 1-60. Archeogastropoda, Mesogastropoda, and stratigraphy of the Ripley, Owl Creek and Prairie Bluff formations [Tennessee-Mississippi] U. S. Geol Survey Prof Paper 331-A, p. 1-151, illus., 1960.

SOHN, Israel Gregory. See also HOSTERMAN, J W 1-60

- 1-60. (and BERDAN, Jean Milton) The ostracode family Berounellidae, new Jour Paleontology, v 34, no. 3, p 479-482, illus., May 1960  
2-60. Cleaning ostracode valves with ultrasonic vibrations [abs] Geol. Soc America Bull, v 71, no. 12, pt 2, p 1982, Dec 1960  
3-60 Paleozoic species of Bairdia and related genera U S Geol Survey Prof. Paper 330-A, p. 1-105, illus., 1960.

SOISTER, Paul Edward

- 1-60. Landslide debris from Cretaceous rocks in the Wind River formation of early Eocene age, Wind River basin, Wyoming [abs] Geol Soc. America Bull., v. 71, no. 12, pt. 2, p. 1982-1983, Dec. 1960

SOLÓRZANO MARÍN, Roberto. See also ZOPPIS BRACCI, Luigi 3-60

- 1-60. Analisis y perspectivas industriales de los recursos minerales de Nicaragua Nicaragua Servicio Geol. Nac Bol. 4, p 119-161 incl. tables, 1960.

SOMERTON, Wilbur H.

- 1-60. (and BOOZER, George D) Thermal characteristics of porous rocks at elevated temperatures Jour Petroleum Technology, v 12, no. 6, p. 77-81 incl. diagrams and tables, June 1960.

SŌMIYA, Shigeyuki. See MUAN, Arnulf 1-60



- SOREM, Ronald Keith. See also CAMERON, E N 1-60  
1-60 X-ray diffraction technique for small samples Am Mineralogist, v 45, nos 9-10, p. 1104-1108 incl. diagrams, Sept -Oct. 1960
- SØRENSEN, Henning See also LARSEN, Ole 1-60  
1-60 On the agpaite rocks [Greenland] Internat. Geol Cong, 21st, Copenhagen, 1960, Rept, pt 13, p 319-327, 1960, reprinted as Grønlands Geol. Undersøgelser Misc Paper 29, 1960, Copenhagen Univ Mus Minéralogie et Géologie Commun Géol 104, 1960  
2-60. Beryllium minerals in a pegmatite in the nepheline syenites of Ilimaussaq, South West Greenland Internat. Geol Cong, 21st, Copenhagen, 1960, Rept, pt. 17, p 31-35 incl table, 1960, reprinted as Grønlands Geol Undersøgelser Misc. Paper 30, 1960, Copenhagen Univ Mineralog and Geol Mus Contr Mineralogy, no 52, 1960
- SORGENFREI, Theodor  
1-60. Greenland geology, in Geology in Denmark GeoTimes, v 4, no. 7, p 10-11, 25 incl. illus, Apr 1960
- SORRELL, Charles A.  
1-60 Reaction sequence and structural changes in cordierite refractories Am. Ceramic Soc Jour., v 43, no. 7, p 337-343 incl. diagrams and tables, July 1, 1960
- SOURIRAJAN, S.  
1-60. (and KENNEDY, George Clayton) The system H<sub>2</sub>O-NaCl at elevated temperatures and pressures California, Univ, Livermore, Lawrence Radiation Lab Rept. UCRL-6175, 43 p., illus., Nov 1960
- SOUTH DAKOTA SCHOOL OF MINES and TECHNOLOGY GEOLOGICAL STAFF.  
See GEOL. SOC. of AMERICA, Rocky Mountain Section, 1-60
- SOUTH TEXAS GEOLOGICAL SOCIETY  
1-60. Guidebook, 1960 fall Field Trip, geological section, Taylor to Glen Rose, December 2-3, 1960 San Antonio, 25 p., illus, 1960
- SOUTHEASTERN GEOLOGICAL SOCIETY  
1-60 (PURI, Harbans Singh, editor) Late Cenozoic stratigraphy and sedimentation of central Florida, 9th field trip, May 6-7, 1960, guidebook Tallahassee, Fla, 134 p. incl index, tectonic, and sketch maps, sections, chart, diagrams, and tables, also lithofacies maps and panel diagram, 1960 Includes individual papers which are cited separately.
- SOUTHER, Jack Gordon. See CANADA GEOL SURVEY 37-60
- SOUTHWESTERN FEDERATION of GEOLOGICAL STUDIES  
1-60 Natural gas in the Southwest, 3d annual meeting of S W F G S. and 1960 fall regional meeting of the American Association of Petroleum Geologists, Abilene, Texas, October 12-14, 1960 Southwestern Federation Geol. Soc. Trans., v. 1, 153 p. incl. index and sketch maps, sections, correlation chart, diagrams, tables, and illus, 1960
- SPACKMAN, William, Jr. See also CAMERON, A R 1-60, DUTCHER, R R. 1-60, MANSFIELD, S. P. 1-60  
1-60 Processes and products of coalification [abs] Geol Soc. America Bull, v 71, no. 12, pt. 2, p 1983, Dec. 1960  
2-60. (and DOLSEN, C Philip) Uranium, sulfur, iron, and mineral concentrations in organic sediments from selected marine, brackish-, and fresh-water environments [abs] Geol Soc. America Bull, v. 71, no 12, pt. 2, p 1983-1984, Dec 1960
- SPAIN, James Maurice See BRONSON, Roy 1-60
- SPANGLE, Paul F  
1-60. (editor) A guide book to Carlsbad Caverns National Park [New Mexico] Natl Speleol Soc Guidebook Ser, no 1, 43 p, illus incl geol map, 1960. Includes individual papers which are cited separately.

## SPANGLER

SPANGLER, Merlin Grant

1-60. Soil engineering 2d ed., Scranton, Pa., Internat Textbook Co., 483 p, illus., 1960

SPENCE, R. E

1-60. Observations on the geology of the area between Bath and the Bath Fountain [Jamaica] Geonotes, v. 3, pt 2, (Jamaica Geol Survey Pub. 62) p 62-66, illus, July 1960.

SPENCER, Charles W. See also UPSON, J. E., 2d 1-60

1-60. Method for mounting silt-size heavy minerals for identification by liquid immersion Jour Sed Petrology, v. 30, no 3, p 498-500, Sept. 1960

SPENCER, Ned D.

1-60. Terminus dam foundation [abs] California Assoc Eng Geologists, 3d Ann Mtg, Berkeley, Oct 14-16, 1960, p. 13 [1960]

SPENCER, Ralph Wellington. See TERZAGHI, Karl 1-60

SPICER, Herbert Cecil

1-60. Charles Edwin Van Orstrand [1870-1959] Geophysics, v 25, no 2, p 544-545 incl portrait, Apr. 1960

SPIEGEL, Zane E.

1-60. Streamflow contributions from ground water [abs] Jour. Geophys. Research, v. 65, no 8, p. 2525, Aug. 1960

SPIEKER, Edmund Maute

1-60. The Cretaceous-Tertiary boundary in Utah Internat. Geol. Cong., 21st, Copenhagen, 1960, Rept., pt 5, p. 14-24 incl. sketch maps and section, 1960.

SPIELBERG, Nathan. See LADELL, Joshua 1-60

SPILLERS, James Parker See STIPE, Jack C.

SPINKS, J.W.T.

1-60. Sulfur isotopes and hydrothermal deposits Econ Geology, v 55, no 1, p 206, Jan -Feb. 1960 (Discussion of paper by M. L. Jensen, v. 54, p 374, 1959)

SPJELDNAES, Nils

1-60 Ordovician climatic zones Norsk Geol. Tidsskr. (Bergen, Norway), bind 41, hefte 1, p. 45-77 incl sketch maps and diagrams, 1960

SPRINGER, Karl J

1-60. How a small mining company can pursue mineral exploration Mining Cong Jour., v. 46, no. 12, p 48-50 incl. illus, Dec. 1960

SPROULE, John Campbell

1-60 Regional geology and petroleum prospects--Lower Mackenzie basin and Arctic coastal area [abs.] Oilweek, v 10, no. 49, p 31, 33, Jan. 23, 1960.

STAATZ, Mortimer Hay. See also OUTERBRIDGE, W F 1-60

1-60. The Republic graben, a major structure in northeastern Washington Art. 141 in U. S. Geol Survey Prof Paper 400-B, p B304-B306 incl. geol map, 1960.

STABBACK, Jack G.

1-60. Gas reserves of western Canada Canadian Mining and Metall. Bull., v. 53, no. 579, p. 470-476 incl. sketch map, diagrams, section, and tables, July 1960, Canadian Inst Mining and Metallurgy Trans, v 63, p. 293-299, 1960.

- 2-60. Gas reserves of western Canada Oil in Canada, v 12, no. 47, p 32-38, illus., Sept 19, 1960.
- STACEY, F D. See also STOTT, P. M. 1-60  
1-60 Magnetic anisotropy of igneous rocks Jour Geophys Research, v. 65, no 8, p 2429-2442 incl diagrams and tables, Aug. 1960
- STACEY, J. S.  
1-60. A prototype hotspot for thermal boring on the Athabaska Glacier [Alberta] Jour. Glaciology (Cambridge, England), v 3, no. 28, p. 783-786, illus , Oct 1960
- STACKLER, Willi Friedrich. See also THYSSEN-BORNEMISZA, Stephen 1-60  
1-60. New light on isopach residual values--In gravity interpretations Oil and Gas Jour., v 58, no 33, p 153, 155, 159 incl diagrams, Aug 15, 1960.
- STACY, John R See PHOENIX, David Allen 1-60
- STADNICHENKO, Taisia Maximovna, 1894-1958. See ZUBOVIC, Peter, 1-60-4-60
- STAFFORD, Philip Thomas  
1-60. Geology of the Cross Plains quadrangle, Brown, Callahan, Coleman, and Eastland Counties, Texas. U. S Geol. Survey Bull. 1096-B, p. 39-72 incl. maps and sections, 1960.  
2-60. Stratigraphy of the Wichita group in part of the Brazos River valley, north Texas U. S Geol Survey Bull 1081-G, p. 261-280, illus. incl. geol. map, 1960
- STAGER, Harold Keith  
1-60. A new beryllium deposit at the Mount Wheeler mine, White Pine County, Nevada Art. 33 in U S. Geol. Survey Prof Paper 400-B, p B70-B71, 1960
- STAINFORTH, Robert Masterman  
1-60. The American Oligocene Nature (London), v 187, no 4738, p. 678-680, with discussion by F. E. Eames and others, Aug 20, 1960.  
2-60 Estado actual de las correlaciones trans-Atlánticas del Oligo-Mioceno por medio de foraminíferos planctónicos, in Cong. Geol. Venezolano, 3d, Caracas, 1959, Mem , Tomo 1 Venezuela Dirección Geología (Caracas) Bol Geología Pub. Espec 3, p 382-406 incl chart, 1960.
- STALKER, Archibald MacSween See also CANADA GEOL SURVEY 5-60  
1-60. Ice-pressed drift forms and associated deposits in Alberta Canada Geol. Survey Bull. 57, 38 p., illus , 1960  
2-60. Surficial geology of the Red Deer-Stettler map-area, Alberta Canada Geol. Survey Mem 306, 140 p., illus incl. geol map, 1960
- STAM, Johannes Cornelis  
1-60 Geological reconnaissance mapping with the help of aeromagnetic surveys Internat. Geol. Cong., 21st, Copenhagen, 1960, Rept , pt. 2, p. 111-120 incl. geol and aeromagnetic contour sketch maps and profile, 1960
- STANDER, Cornelius M.  
1-60. Extraction and flame spectrophotometric determination of vanadium Anal Chemistry, v. 32, no 10, p. 1296-1299 incl. diagrams and tables, Sept. 1960
- STANFIELD, Kenneth Edison  
1-60 (and others) Oil yields of sections of Green River oil shale in Colorado, 1954-57 U. S. Bur Mines Rept. Inv 5614, 186 p incl. sketch maps, sections, diagrams, and tables, 1960.
- STANLEY, Ruth P.  
1-60. Guide to the minerals and gems of northwestern North Carolina Gems and Minerals, no 274, p. 72-76, July 1960.

## STANTON

STANTON, R. D

- 1-60 (and RUSSELL, R. D.) Anomalous leads and the emplacement of lead sulfide ores--Erratum *Econ Geology*, v 55, no 4, p 841, June-July 1960, erratum to paper, v. 54, no 4, p 588-607, 1959

STANTON, R. L

- 1-60. General features of the conformable "pyritic" orebodies--Pt 1, Field association *Canadian Mining and Metall. Bull*, v 53, no 573, p. 24-29, Jan 1960, *Canadian Inst Mining and Metallurgy Trans*, v 63, p 22-27, 1960.  
2-60 General features of the conformable "pyritic" orebodies--Pt. 2, Mineralogy *Canadian Mining and Metall. Bull*, v 53, no. 574, p 66-74 incl illus, Feb. 1960, *Canadian Inst. Mining and Metallurgy Trans.*, v 63, p 28-36, 1960

STAPLIN, Frank Lyons. See also HALBETTSMA, H. L. 1-60, 2-60

- 1-60. (and POCKOCK, Stanley A. J., and JANSONIUS, J.) Applications of hystrichospherids in western Canada [abs.] *Canadian Oil and Gas Industries*, v 13, no 4, p. 107, Apr 1960.  
2-60 (and others) Palynological techniques for sediments *Micropaleontology*, v 6, no 3, p. 329-331, July 1960  
3-60 Upper Mississippian plant spores from the Golata formation, Alberta, Canada *Palaeontographica* (Stuttgart, Germany), Band 107, Abt. B, Lief. 1-3, p 1-40, illus, June 1960

STARCK, L. P. See HILL, H. L. 1-60

STARKE, John M., Jr. See HUFFMAN, George Garrett 2-60-4-60, 6-60

STARKEY, Harry C. See also CARROLL, Dorothy 4-60

- 1-60 Aspects of ion exchange in zeolites [abs.] *Geol. Soc. America Bull*, v 71, no 12, pt. 2, p. 1984, Dec. 1960

STATHAM, Edwin H. See HOWELL, Lynn Gorman 1-60, MARTINEZ, Joseph Didier 1-60

STAUDER, William Vincent

- 1-60. A use of S waves in focal-mechanism studies [abs.] *Jour. Geophys. Research*, v 65, no. 8, p 2525, Aug 1960  
2-60. (and ADAMS, William Mansfield) A comparison of some S-wave studies of earthquake mechanisms [abs.] *Jour. Geophys. Research*, v 65, no 8, p 2525-2526, Aug 1960.  
3-60 S waves--Alaska and other earthquakes [abs.] *Geol. Soc. America Bull.*, v 71, no 12, pt. 2, p 2077, Dec 1960  
4-60 The Alaska earthquake of July 10, 1958--Seismic studies *Seismol. Soc. America Bull*, v. 50, no 2, p. 293-322 incl index map, diagrams, and tables, Apr. 1960  
5-60 S waves and focal mechanisms--The state of the question *Seismol. Soc. America Bull*, v. 50, no 3, p 333-346 incl diagrams, July 1960.  
6-60. S waves--Alaska and other earthquakes *Seismol. Soc. America Bull*, v 50, no. 4, p 581-597 incl diagrams and tables, Oct. 1960.

STAUFFER, Clinton Raymond, 1875-1960. See EMMONS, William Harvey 1-60

STEARN, Colin William. See CLARK, Thomas Henry 1-60

STEARNS, Richard Gordon See also MARCHER, M. V. 1-60, WILSON, C. W. Jr. 1-60

- 1-60. (and MARCHER, Melvin Vernet) Relationship of the source and depositional environment of the Tuscaloosa gravel in western Tennessee to the Pascola arch [abs.] *Tennessee Acad. Sci. Jour*, v 35, no 2, p. 106, Apr 1960

STEECE, Fred Victor

- 1-60. (and TIPTON, Merlin Joseph, and AGNEW, Allen Francis) Glacial

- geology of the Coteau des Prairies, South Dakota, in Eastern South Dakota Friends Pleistocene Mid-Western, 11th Ann Field Conf, May 1960, Guidebook, p 1-5, 1960
- 2-60. Pleistocene volcanic ash in southeastern South Dakota South Dakota Acad Sci. Proc 1959, v. 38, p. 41-44, illus., Jan 1960.
- STEEL, Ernest William
- 1-60. Ground water, Chap. 4, in Water supply and sewerage, by author 4th ed, New York, N Y., McGraw-Hill Book Co., Inc, p 64-95, illus, 1960, originally published 1938.
- STEELE, Grant
- 1-60. Stratigraphic interpretation of the Pennsylvanian-Permian systems of the eastern Great Basin [Nevada-Utah] [abs.] Dissert Abs., v 20, no 12, p. 4635-4636, June 1960.
- 2-60 Pennsylvanian-Permian stratigraphy of east-central Nevada and adjacent Utah, in Geology of east central Nevada Intermountain Assoc Petroleum Geologists, 11th Ann Field Conf., 1960 Guidebook, p 91-113 incl. index and sketch maps and correlation chart, 1960.
- STEENLAND, Nelson Clarence See also ROBERTSON, D S. 1-60
- 1-60. (and BROD, Robert J.) Basement mapping with aeromagnetic data--Blind River Basin [Ontario] Geophysics, v 25, no 3, p 586-601 incl. sketch maps, sections, diagrams, and table, June 1960
- 2-60. Success and future of basement depth interpretations from aeromagnetic data in Canada [abs] Canadian Oil and Gas Industries, v 13, no 4, p 105, Apr 1960.
- STEHLI, Francis Greenough See ALLEN, Clarence Roderic 2-60
- STEINBRUGGE, Karl V
- 1-60 Structural damage--1959 Hebgen Lake earthquake [abs.] Geol Soc. America Bull., v. 71, no. 12, pt. 2, p 2041, Dec. 1960.
- 2-60. Engineering notes on the Hebgen Lake, Montana, earthquake of August 17, 1959 [abs] Geol. Soc America Bull., v 71, no 12, pt 2, p 2078, Dec 1960
- 3-60. (and BUSH, Vincent R.) Earthquake experience in North America, 1950-1959 World Conf Earthquake Eng., 2d, Tokyo and Kyoto, Japan, July 11-18, 1960, Proc., v. 1, p 381-396 incl. sketch maps, diagrams, and tables, Tokyo, Sci. Council Japan, 1960.
- 4-60. (and ZACHER, Edwin G.) Creep on the San Andreas fault [Calif]--Fault creep and property damage Seismol. Soc America Bull., v 50, no. 3, p 389-396 incl. index map, diagrams, and illus., July 1960.
- STEINER, Robert L See BLOSS, Fred Donald 1-60
- STEINHART, John S. See also MEYER, R P 1-60
- 1-60 (and MEYER, Robert Paul, and WOOLLARD, George Prior) Statistical uncertainty and interpretation problems in seismic crustal studies with applications [abs.] Jour Geophys. Research, v 65, no. 8, p 2526, Aug 1960
- STEINHILBER, W. L See HACKETT, Orwoll Milton 1-60
- STELCK, Charles Richard. See WARREN, Percival Sidney 1-60, 2-60
- STEMPLE, Irene S
- 1-60. (and BRINDLEY, George William) A structural study of talc and talc-tremolite relations Am Ceramic Soc. Jour, v 43, no 1, p 34-42 incl. diagrams, tables, and illus., Jan 1, 1960.
- STENSAAS, L. J. See also LANGENHEIM, R L., Jr. 7-60
- 1-60. (and LANGENHEIM, Ralph Louis, Jr) Rugose corals from the lower Mississippian Joana limestone of Nevada Jour. Paleontology, v 34, no. 1, p 179-188 incl. geol. sketch map, section, and illus., Jan 1960.

## STEPHENS

### STEPHENS, Fred H

- 1-60. The Craigmont mine [British Columbia] Western Miner and Oil Rev., v. 33, no 12, p. 28-44 incl geol. sketch map, diagrams, and illus., Dec. 1960.

### STEPHENS, James Dallas

- 1-60. Hydrothermal alteration at the United States mine, West Mountain (Bingham) district, Utah [abs.] Dissert Abs., v 21, no. 4, p. 920, Oct. 1960

### STEPHENS, John James

- 1-60. Stratigraphy and paleontology of a late Pleistocene basin, Harper County, Oklahoma Geol Soc. America Bull, v. 71, no 11, p 1675-1702 incl. sketch maps, chart, and illus., geol. map, Nov. 1960.

### STEPHENS, Raymond Weathers, Jr.

- 1-60. Stratigraphy and Ostracoda of the Ripley formation of western Georgia [abs ] Dissert. Abs., v 20, no. 11, p. 4372, May 1960.

### STEPHENSON, William J.

- 1-60. Tolley Cave, Rockbridge County, Virginia, a study in vadose development Natl Speleol. Soc. NSS News, v. 18, no. 7, p. 69-71 incl. section, July 1960.

### STERLING, Clarence I., Jr

- 1-60 Special report on ground water resources in the Mattapoisett River Valley Massachusetts Water Resources Comm. Bull. W.R. 1, 28 p., illus. incl. geol. map, May 1960.

### STERMITZ, Frank See HACKETT, Orwoll Milton 1-60

### STERN, Konrad

- 1-60. Native bitumens, pyrobitumens, and asphaltic type petroleum bitumens, in Am Inst Mining, Metall., and Petroleum Engineers, Industrial minerals and rocks, p. 631-637, 1960.

### STERN, Thomas Whitall See also ROSE, H. J., Jr 1-60, 2-60

- 1-60. (and STIEFF, Lorin Rollins, and KLEMIC, Harry, and DELEVAUX, Maryse Helen) Lead-isotope age studies in Carbon County, Pennsylvania Art 23 in U. S Geol Survey Prof Paper 400-B, p B45-B48 incl diagrams and tables, 1960

### STERNS, Mabel

- 1-60 The Kunz collection and the U.S.G.S Library Gems and Minerals, no. 268, p 44, Jan 1960

### STEVEN, Thomas August

- 1-60 (and RATTÉ, James Clifford) Relation of mineralization to caldera subsidence in the Creede district, San Juan Mountains, Colorado Art. 8 in U S Geol Survey Prof. Paper 400-B, p B14-B17 incl geol. sketch maps, 1960  
2-60. (and RATTÉ, James Clifford) Geology and ore deposits of the Summitville district, San Juan Mountains, Colorado U S. Geol Survey Prof Paper 343, 70 p , illus incl. geol maps, 1960

### STEVENS, Calvin Howes

- 1-60. (and JONES, Daniel H , and TODD, Robert George) Ultrasonic vibrations as a cleaning agent for fossils Jour Paleontology, v 34, no 4, p 727-730, illus , July 1960

### STEVENS, Charles Martin. See ANDERS, Edward 1-60, 3-60

### STEVENS, Curtis

- 1-60. (editor) Petroleum sourcebook 1959--A regional bibliography of petroleum information Amarillo, Texas, Natl Petroleum Bibliography, 234 p , 1960

- 2-60. (editor) National petroleum bibliography--The working index to petroleum publications Nat. Petroleum Bibliography, v 3, no 1, terminal ed., [251] p, 1960.
- 3-60 (and STEVENS, Donald Raymond, compilers and editors) Hugoton Embayment-Anadarko Basin handbook--A compendium of oil and gas field information on the Amarillo-Hugoton area Amarillo, Tex., Natl Petroleum Bibliography, 412 p, illus, 1960

STEVENS, Donald Raymond See STEVENS, Curtis 3-60

STEVENS, Harry W, Jr

- 1-60. Stratigraphic oil production in Wil pool area, Edwards County, Kansas [abs] Am Assoc Petroleum Geologists Bull, v 44, no. 1, p 130, Jan. 1960

STEVENS, Peter R.

- 1-60 Ground-water problems in the vicinity of Moscow, Latah County, Idaho U. S. Geol Survey Water-Supply Paper 1460-H, p 325-357, illus., 1960

STEVENS, Rollin Elbert See also BAILEY, E H 1-60, 3-60

- 1-60 (and CHODOS, Arthur A, and HAVENS, Raymond G, and GODIEN, Elisabeth, and NEIL, Sarah T) Combination of gravimetric and spectrographic methods in the analysis of silicates Art. 228 in U. S. Geol. Survey Prof Paper 400-B, p B499-B501, 1960
- 2-60 (and NEIL, Sarah T, and ROBERSON, Charles Elmer) Gravimetric conversion factors and other data used in interpreting analyses of rocks, minerals, and waters, AGI Data Sheets 18a and 18b GeoTimes, v. 4, no. 7, p 41-42, Apr 1960, no 8, p 23, May-June 1960.
- 3-60. (and others) Second report on a cooperative investigation of the composition of two silicate rocks U. S. Geol Survey Bull 1113, 126 p. incl diagrams and tables, 1960. Contains individual papers which are cited separately
- 4-60. (and NILES, William W) Chemical analysis of the granite and the diabase, Pt 1 in Second report on a cooperative investigation of the composition of two silicate rocks U. S. Geol Survey Bull 1113, p 3-43 incl. diagrams and tables, 1960
- 5-60. (and CHODOS, Arthur A) Special study of the silica content of G-1 and W-1 by combined wet chemical and spectrographic methods, Pt 2 in Second report on a cooperative investigation of the composition of two silicate rocks U. S. Geol Survey Bull 1113, p 45-56 incl tables, 1960.

STEVENSON, Frank Jay

- 1-60 Microdetermination of nitrogen in rocks and silicate minerals by sealed tube digestion Anal. Chemistry, v. 32, no 12, p 1704-1706 incl. diagrams and tables, Nov 1960.
- 2-60 Nitrogenous constituents of some Paleozoic shales [abs] Am. Assoc. Petroleum Geologists Bull, v 44, no 7, p 1257, July 1960
- 3-60 Chemical state of the nitrogen in sedimentary and igneous rocks [abs] Geol Soc America Bull, v 71, no 12, pt 2, p 1985, Dec. 1960.

STEVENSON, I. M See also CANADA GEOL SURVEY 29-60

- 1-60. New occurrences of Triassic sedimentary rocks in Chedabucto Bay area, Nova Scotia Geol Soc America Bull, v 71, no. 12, pt 1, p 1807-1808 incl sketch map, Dec 1960

STEVENSON, John Sinclair. See CLARK, Thomas Henry 2-60

STEVENSON, Robert Evans

- 1-60 The Miscol till residuum [abs] South Dakota Acad Sci Proc. 1959, v 38, p. 40, Jan. 1960
- 2-60. Paleocology of a Colgate fauna [abs] South Dakota Acad Sci Proc. 1960, v 39, p 174, Nov 1, 1960
- 3-60 Geology of the Little Eagle quadrangle, South Dakota South Dakota Geol Survey [Geol Map], scale 1 62,500 (about 1 in. to 1 mi), with text, 1960

STEVENSON

- 4-60 Geology of the Timber Lake quadrangle, South Dakota South Dakota Geol Survey [Geol Map], scale 1 62,500 (about 1 in. to 1 mi ), with text, 1960.

STEWART, Julian H

- 1-60 John Reed Swanton, February 19, 1873-May 2, 1958 Natl Acad. Sci. Biog. Mem , v 34, p 329-349, portrait, 1960.

STEWART, David Benjamin

- 1-60 The system  $\text{LiAlSiO}_4\text{-NaAlSi}_3\text{O}_8\text{-H}_2\text{O}$  at 2,000 bars Internat. Geol. Cong , 21st, Copenhagen, 1960, Rept., pt. 17, p 15-30 incl diagram and tables, 1960  
2-60. Effect of  $\text{LiAlSiO}_4$  and  $\text{SiO}_2$  on the separation of the 131 and 131 X-ray-diffraction lines of synthetic albite [abs ] Geol Soc America Bull , v 71, no 12, pt 2, p. 1985, Dec. 1960.

STEWART, John Harris See also FISCHER, R. P. 1-60

- 1-60 (and WILSON, Richard Fairfield) Triassic strata of the salt anticline region, Utah and Colorado, in Geology of the Paradox Basin fold and fault belt Four Corners Geol Soc , 3d Field Conf , 1960, [Guidebook] p 98-106, illus , 1960

STEWART, Joseph William. See also WALTON, W. C 2-60

- 1-60. Relation of salty ground water to fresh artesian water in the Brunswick area, Glynn County, Georgia Georgia Geol Survey Inf Circ 20, 42 p , illus , 1960

STEWART, Lincoln Adair See also DALE, V. B 1-60

- 1-60. (and PFISTER, A. J.) Barite deposits of Arizona U. S. Bur Mines Rept Inv 5651, 89 p. incl. index and sketch maps, diagrams, and illus , 1960

STEWART, Peggy Lou. See EATON, Theodore Hildreth, Jr 3-60

STEWART, Samuel Woods See also BYERLY, P E 1-60, DIMENT, W. H 2-60

- 1-60 (and HOFMANN, Renner B , and DIMENT, William Horace) Some after-shocks of the Hebgen Lake, Montana, earthquake of August 1959 Art 96 in U S Geol Survey Prof Paper 400-B, p. B219-B221 incl index map and diagram, 1960

STICK, John C , Jr.

- 1-60. Modern well completion series--Pt 7, New developments in nuclear logging Petroleum Engineer for Management, v 32, no 7, p B-31-B-36, B-38, B-42-B-43 incl diagrams, July 1960.

STIEFF, Lorin Rollins See STERN, Thomas Whitl 1-60

STINSON, Melvin C. See PABST, Adolf 2-60

STIPE, Jack C.

- 1-60. (and SPILLERS, James Parker, editor) Salt domes of South Louisiana [V 1] New Orleans, La , New Orleans Geol. Soc , 145 p , illus , July 1960

STIPP, Thomas Franklin

- 1-60 (compiler) Selected bibliography, in Northern Franklin Mountains, southern San Andres Mountains, with emphasis on Pennsylvanian stratigraphy Roswell Geol Soc , Field Trip, Nov 1960, Guidebook, p. 157-160, 1960

STIRTON, Ruben Arthur

- 1-60. A marine carnivore from the Clallam Miocene formation, Washington --its correlation with nonmarine faunas California Univ Pubs Geol. Sci , v. 36, no 7, p. 345-368, illus., Oct. 21, 1960



STOBBE, P. C.

- 1-60. The genesis and characteristics of podzol soils [abs.] Royal Soc. Canada Minutes Proc, 3d ser, v 54, App. C, p 40, 1960

STOCKTON, A D. See YBARRA, R A. 1-60

STOCKWELL, Clifford Howard See CANADA GEOL. SURVEY 10-60

STOENNER, R W. See also BASSETT, W. A. 2-60, SCHAEFFER, O A 1-60 1-60 (and SCHAEFFER, Oliver Adam, and DAVIS, Raymond, Jr) Meteorites as space probes for testing the spatial constancy of cosmic radiation Jour. Geophys Research, v 65, no. 10, p. 3025-3034 incl diagrams and tables, Oct 1960

- 2-60 (and SCHAEFFER, Oliver Adam, and Davis, Raymond, Jr.) The measurement of the Ar<sup>39</sup> contents of three chondrites [abs.] Jour Geophys Research, v. 65, no 8, p. 2526, Aug 1960.

STOIBER, Richard Edwin

- 1-60 (and others) Petrographic evidence on the source area and age of T-3, in Bushnell, V. C, ed, Scientific studies at Fletcher's ice island, T-3, 1952-1955, V. 3 U S Air Force Cambridge Research Center Geophysics Research Directorate Geophys. Research Paper 63, p. 58-72, illus, Apr 1960

STOKES, William Lee

- 1-60 Fluvial and eolian sandstone bodies in Colorado Plateau [abs.] Am. Assoc Petroleum Geologists Bull, v 44, no 7, p 1257, July 1960.  
2-60 Transcontinental arch--A major geologic feature of North America [abs.] Geol Soc. America Bull, v. 71, no 12, pt. 2, p 1985-1986, Dec. 1960  
3-60. Inferred Mesozoic history of east-central Nevada and vicinity, in Geology of east central Nevada Intermountain Assoc Petroleum Geologists, 11th Ann. Field Conf, 1960 Guidebook, p 117-121 incl sketch maps, 1960.  
4-60 Essentials of earth history--An introduction of historical geology Englewood Cliffs, N J, Prentice-Hall, 502 p, illus, 1960.  
5-60 (and BRUHN, A. F) Dinosaur tracks from Zion National Park and vicinity, Utah Utah Acad. Sci, Arts, and Letters Proc. 1959-60, v 37, p 75-76, 1960

STONE, Donald B. See NAMOWITZ, Samuel N 1-60

STONE, Jerome. See SMITH, William Lee 1-60

STONELEY, Robert

- 1-60 Beno Gutenberg, 1889-1960 Nature (London), v 186, no 4723, p. 433-434, May 7, 1960

STOREY, Taras Philip See also PATTERSON, J R 1-60

- 1-60 Devonian stratigraphy--Norman Wells region [Northwest Territories] [abs.] Oil in Canada, v 12, no 16, p 33, Feb. 15, 1960

STOSE, George Willis, 1869-1960

- 1-60 (and LJUNGSTEDT, Olof Axel, compilers) Geologic map of the United States Washington D C, U. S Geol Survey, 4 sheets, scale 1 2,500,000 (about 1 in to 39 mi.), slightly revised 1960, originally published 1932.

STOTT, Donald Franklin

- 1-60 Cretaceous rocks between Smoky and Pine Rivers, Rocky Mountain Foothills, Alberta and British Columbia Canada Geol Survey Paper 60-16, 52 p, illus. incl geol. map, 1960  
2-60 Cretaceous rocks in the region of Liard and Mackenzie Rivers, Northwest Territories Canada Geol Survey Bull. 63, 36 p incl tables, diagram and illus, separate geol maps and section, with French abs, 1960

## STOTT

### STOTT, P M

- 1-60 (and STACEY, F. D.) Magnetostriction and palaeomagnetism of igneous rocks Jour. Geophys. Research, v. 65, no 8, p 2419-2424 incl. table, Aug. 1960

### STOUT, Martin Lindy

- 1-60. Diabasic and gabbroic rocks in the south-central Cascade Mountains of Washington [abs ] Geol Soc America Bull , v 71, no. 12, pt 2, p. 2078, Dec 1960.

### STOUT, Thompson Mylan

- 1-60 Classification [!Classification] of Oligocene sediments in northeastern Colorado and Eastern Wyoming [abs ] Nebraska Acad Sci. Proc., 70th Ann Mtg., p. 15 [1960].  
2-60. Basic sedimentational patterns in the Great Plains Tertiary compared with the Pleistocene [abs ] Nebraska Acad. Sci. Proc., 70th Ann. Mtg , p 17 [1960].

### STOUT, Wilber Elihu, 1876-1961

- 1-60 Sunn Hill [Ohio] geology and physiography West Virginia Acad. Sci Proc. 1959, v 31, p. 49-52, Dec 1960.

### STRACHAN, Clyde G

- 1-60 The structural and stratigraphic history of the Chandler area of Lincoln County, Oklahoma [abs.] Tulsa Geol Soc. Digest, v. 28, p. 89, 1960.

### STRACZEK, John A

- 1-60. (and HOREN, Arthur, and ROSS, Malcolm, and WARSHAW, Charlotte Marsh) Studies of the manganese oxides--[Pt.] 4, Todorokite Am. Mineralogist, v 45, nos 11-12, p 1174-1184 incl diagrams, tables, and illus , Nov -Dec. 1960

### STRAHLER, Arthur Newell

- 1-60. Physical geography 2d ed., New York, N Y., John Wiley and Sons, 534 p , illus., 1960, originally published 1951

### STRALEY, H W , 3d See also HUSTED, J E 1-60, 2-60

- 1-60 The future of earth science in the college [abs ] Georgia Acad. Sci. Bull , v. 18, nos 1-2, p 12, Apr 1960.

### STRAND, Rudolph G See JENNINGS, Charles William 1-60

### STRATTON, Hazel J.

- 1-60 List of publications issued by the Bureau of Mines from July 1, 1910, to January 1, 1960, with subject and author index Washington, D. C , 826 p., 1960.

### STRAWN, Enos J.

- 1-60. The San Juan Basin of Colorado, Chap 18 in Mineral resources of Colorado, 1st sequel Denver, Colorado Mineral Resources Board, p 505, 653-667 incl index map, geol section, and table, 1960.

### STRICKLAND, John Willis

- 1-60 Summary of Mississippian stratigraphy, western Wyoming and vicinity, in West Yellowstone--Earthquake area Billings Geol. Soc., 11th Ann Field Conf , Sept 1960, [Guidebook] p 217-225 incl. cross-section index and isopach map, 1960

### STRIMPLE, Harrell LeRoy

- 1-60. The genus Paragassizocrinus in Oklahoma Oklahoma Geol. Survey Circ. 55, 37 p , illus., 1960  
2-60. Regressive evolution among erisocrinids Oklahoma Geology Notes, v 20, no 6, p 151-155, illus., June 1960  
3-60. The posterior interradius of Carboniferous inadunate crinoids of Oklahoma Oklahoma Geology Notes, v 20, no. 10, p 247-253, illus , Oct. 1960.

- STRINGHAM, Bronson See also ADAIR, D H 1-60, SNOW, G. G 1-60  
 1-60. Differences between barren and productive intrusive porphyry Econ. Geology, v 55, no 8, p. 1622-1630 incl mineral index map and tables, Dec. 1960.
- STROSS, Fred Helmut  
 1-60. Authentication of antique stone objects by physical and chemical methods. Anal. Chemistry, v. 32, no 3, p. 17A-36A incl ads, diagram, tables, and illus, Mar. 1960
- STROUD, L. See BRANDT, L W 1-60
- STRUXNESS, E. G. See also PARKER, Frank L 1-60, 2-60  
 1-60. (and others) Waste disposal research and development in the United States of America, in Disposal of radioactive wastes, V. 2 Internat Atomic Energy Agency, Sci Conf on Disposal of Radioactive Wastes, Monaco, Nov. 16-21, 1959, Proc., v 2, p 481-498 incl diagrams, with English, French, Russian, and Spanish abs., 1960.
- STUART, Roy Armstrong  
 1-60. Geology of the Kemano-Tahtsa area British Columbia Dept Mines and Petroleum Resources Bull 42, 52 p, illus. incl geol. map, 1960
- STUBBINS, John B. See also BLAIS, R. A 1-60  
 1-60 (and BLAIS, Roger A, and ZAJAC, Steve) The origin of the direct shipping ores of the Knob Lake area [Quebec] [abs.] Canadian Mining and Metall. Bull, v 53, no 575, p. 194-195, Mar 1960
- STUBICAN, Vladimir See also BRINDLEY, G. W. 3-60  
 1-60. (and ROY, Rustum) Progress of dehydroxylation and proton retention in heated 1:1 clays studied by infra-red spectroscopy, weight loss and deuterium uptake [abs] Am. Ceramic Soc Bull., v 39, no. 4, p 189, Apr 1960
- STUCKEY, Charles Wainwright, Jr.  
 1-60 Correlation of Gulf Coast Jackson [abs] Am Assoc. Petroleum Geologists Bull, v 44, no 9, p. 1603-1604, Sept 1960.  
 2-60 A correlation of the Gulf Coast Jackson Gulf Coast Assoc. Geol. Soc. Trans, v 10, p 285-289 incl sketch maps, correlation charts, and sections, 1960
- STUCKEY, Jasper Leonidas  
 1-60. Geology of the Grandfather Mountain [North Carolina] Earth Sci, v 13, no 6, p 225-227 incl illus., Dec 1960.  
 2-60. Beryl in North Carolina [abs] Elisha Mitchell Sci. Soc. Jour, v. 76, no 2, p. 186, Nov. 1960.
- STUDE, Jerry R See TASH, Paul 2-60
- STUIVER, Minze  
 1-60. (and DEEVEY, Edward Smith, Jr., and GRALENSKI, L. J.) Yale natural radiocarbon measurements, [Pt.] 5 Am Jour. Sci. Radiocarbon Supp, v 2, p. 49-61, 1960
- STULIK, R. S. See HARDT, William Frederick 1-60
- STUMM, Erwin Charles  
 1-60. New rugose corals from the Middle and Upper Devonian of New York Jour. Paleontology, v 34, no 1, p 161-163, illus., Jan. 1960  
 2-60. The holotype of Favosites biloculi Hall [New York] Jour Paleontology, v 34, no 3, p. 589-590 incl illus., May 1960  
 3-60 The type species of the Paleozoic tabulate coral genera Cladopora and Coenites Michigan Univ Mus. Paleontology Contr, v. 15, no 7, p 133-138, illus, Jan 13, 1960

SUESS

- SUESS, Hans Eduard See also BIEN, G. S-N 1-60, HUBBS, C L 1-60  
1-60. Carbon isotope ratios in Pacific Ocean water [abs.] Jour. Geophys. Research, v. 65, no 8, p 2526-2527, Aug 1960  
2-60. The abundance of the elements, in Smithsonian treasury of science, V 1, True, W. P., ed. New York, N Y., Simon and Schuster, Inc., p. 362-377, illus., revised, 1960, originally published 1957

SUFFREDINI, C S. See SCHMITT, R A. 1-60

SULLIVAN, Charles John

- 1-60. The origin of sulphide ores Eng and Mining Jour., v. 161, no 6, p. 189-194 incl diagrams and table, June 1960  
2-60. Magmatic and nonmagmatic ores [abs.] Geol. Soc. America Bull., v 71, no 12, pt. 2, p. 1986, Dec. 1960, Econ Geology, v 55, no. 6, p 1328, Sept -Oct 1960.

SULLIVAN, Dan

- 1-60. Recent oil development in Spencer County, Indiana Kentucky Geol. Survey, ser 10, Spec Pub. 3, p. 48-55, illus., 1960

SULLIVAN, Dan M See DAWSON, Thomas Albert 2-60

SULLIVAN, John C

- 1-60. (and WEDDLE, James Reid) Rio Bravo oil field California Oil Fields--Summ Operations Jan.-June 1960, v 46, no. 1, p 26-39, illus., 1960

SULLWOLD, Harold H., Jr. See also HOLLAND, C. H 1-60

- 1-60 Tarzana fan, deep submarine fan of late Miocene age, Los Angeles County, California Am Assoc. Petroleum Geologists Bull., v. 44, no. 4, p. 433-457 incl. geol sketch map, index and sketch maps, diagrams, table, sections, and illus., Apr. 1960

SUMMERSON, Charles Henry. See also MILLER, O. M 1-60

- 1-60. (and NOSOW, Edmund) Distribution of "St. Peter-type" sand in Silurian and Devonian of central Kentucky [abs.] Geol. Soc. America Bull., v. 71, no 12, pt. 2, p 2025-2026, Dec. 1960.

SUN, Ming-Shan

- 1-60. Formula of shattuckite and weight loss by ignition [abs.] Geol. Soc America Bull., v 71, no. 12, pt 2, p. 1986-1987, Dec 1960.  
2-60. Differential thermal analysis of shattuckite [abs.] Geol Soc. America Bull., v 71, no. 12, pt. 2, p. 2068-2069, Dec. 1960

SUND, J. Olaf See BAIRD, David McCurdy 5-60

SUNDERMAN, Jack Allen

- 1-60. (and GREENBERG, Seymour Samuel) Minerals associated with Lower Pennsylvanian conglomerate, Lawrence County, Indiana Jour Sed. Petrology, v. 30, no 4, p 578-581 incl sketch map and sections, Dec. 1960.  
2-60. (and GREENBERG, Seymour Samuel) Unusual mineral assemblage associated with Lower Pennsylvanian conglomerate [abs.] Indiana Acad. Sci. Proc. 1959, v 69, p 183, 1960.

SUSKA, Maria Magdalena

- 1-60. Pre-Woodbend prospects of North-Central Alberta [abs.] Canadian Oil and Gas Industries, v. 13, no 4, p 102-103, Apr. 1960

SUTCLIFFE, Horace, Jr. See NEWTON, John G 1-60

SUTER, Hans H.

- 1-60 The general and economic geology of Trinidad, B. W. I 2d ed., London, Her Majesty's Stationery Office, 145 p, illus. incl. geol. sketch maps, with revisionary appendix by G E Higgins, 1960

SUTER, Max See TURNBULL, Willard Jay 1-60

- SUTHERLAND, Patrick Kennedy See also MONTGOMERY, Arthur 1-60  
 1-60. (and COCKE, J. M.) A solitary rugose coral of exceptional size from the Middle Pennsylvanian of Oklahoma Oklahoma Geology Notes, v 20, no 4, p 78-82, illus., Apr 1960
- SUTHERLAND, R. L.  
 1-60 Stratigraphy and paleontology of the "Maysville" division of the Martinsburg shale formation near Chatham Hill, Smyth County, Virginia [abs.] Virginia Jour. Sci., v. 11, no. 4, p 216, Sept 1960
- SUTHERLAND BROWN, Atholl  
 1-60. Physiography of the Queen Charlotte Islands [British Columbia] Canadian Geog Jour, v. 61, no 1, p 30-37 incl geol and sketch maps, table, and illus., July 1960  
 2-60. Triassic and Jurassic rocks of the Queen Charlotte Islands [British Columbia] [abs.] Geol. Soc. America Bull, v. 71, no. 12, pt 2, p 2052, Dec 1960  
 3-60. Geology of the Rocher Deboule Range British Columbia Dept. Mines and Petroleum Resources Bull. 43, 78 p., 1960
- SUTTON, Felix  
 1-60. (and HULL, John) The planet we live on New York, N. Y., Grasset and Dunlap, Inc., 101 p., illus., 1960.  
 2-60. (and HULL, John, and WOLF, Donald D.) Our earth New York, N. Y., Grasset and Dunlap, Inc., 48 p., illus., 1960
- SUTTON, George H See also BECKMANN, W. C. 1-60  
 1-60 (and METSGER, Robert W.) Observations of earth strain at Ogdensburg, New Jersey [abs.] Jour Geophys Research, v. 65, no 8, p. 2527, Aug 1960  
 2-60. (and TALWANI, Manik, and WORZEL, John Lamar) West-east crustal section through the gravity anomaly belt of the Lesser Antilles along 14°20'N. [abs.] Jour Geophys. Research, v 65, no 8, p. 2527, Aug 1960  
 3-60 (and METSGER, Robert W., and OLIVER, Jack Ertle) Earth-strain meter installation at Ogdensburg, New Jersey [abs.] Geol Soc America Bull, v 71, no 12, pt 2, p 2078-2079, Dec 1960
- SUTTON, Robert George  
 1-60. Stratigraphy of the Naples group (Late Devonian) in western New York New York State Mus and Sci Service Bull 380, 56 p., illus., Apr. 1960.
- SVOBODA, Richard Frank  
 1-60. Interest flares in Forest City basin [Nebraska-Missouri] Oil and Gas Jour, v 58, no. 21, p 150-153 incl index, structure contour, and isopach maps, May 23, 1960.
- SWADLEY, W. C. See RADER, Lewis Franklin, Jr 1-60
- SWAIN, Frederick Morrill. See PALACAS, James George 2-60
- SWANN, David Henry. See ATHERTON, Elwood 1-60
- SWANSON, E. B.  
 1-60. (compiler) A century of oil and gas in books--A descriptive bibliography New York, N. Y., Appleton-Century-Crofts, Inc., 214 p., 1960
- SWANSON, Howard Eugene See McMURDIE, Howard Francis 1-60, SWITZER, George S 1-60
- SWANSON, Roger Warren See also CRESSMAN, E. R. 1-60  
 1-60 Phosphate and associated resources in Permian rocks of southwestern Montana Art. 31 in U. S. Geol Survey Prof Paper 400-B, p B65-B66 incl. index map and tables, 1960

## SWANSON

- SWANSON, Vernon Emanuel  
1-60. Oil yield and uranium content of black shales U. S. Geol. Survey Prof. Paper 356-A, p 1-44 incl. index maps, section, diagrams, and table, 1960.
- SWARZENSKI, W. V. See LUSCZYNSKI, N. J. 1-60
- SWARZENSKI, Wolfgang, V See WOLFE, Caleb Wroe 5-60
- SWAYNE, William H.  
1-60. (and TRASK, Frank) Geology of El Salvador Mining Eng., v. 12, no. 4, p. 344-348 incl. geol. sketch map, section, and illus, Apr 1960.
- SWEENEY, S. A.  
1-60. (and JENNINGS, H. Y., Jr.) The electrical resistivity of preferentially water-wet and preferentially oil-wet carbonate rock Producers Monthly, v. 24, no 7, p. 29-32 incl diagrams, May 1960.
- SWEET, Walter Clarence See PULSE, Richard 1-60
- SWEETING, Marjorie Mary See VERSEY, Howard Raymond 2-60
- SWENSON, Frank Albert. See also MOULDER, E. A. 1-60  
1-60. Ground-water phenomena associated with the Hebgen Lake, Montana, earthquake of August 17, 1959 [abs.]. Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 2041-2042, Dec. 1960.
- SWIFT, Lawrence Merton. See ADAMS, William Mansfield 1-60
- SWINEFORD, Ada  
1-60. (editor) Clays and clay minerals Natl. Conf. Clays and Clay Minerals, 7th, Washington, D. C., Oct. 1958, Proc., 369 p. incl. sketch maps, diagrams, and tables, also illus., 1960. (Issued as Internat. Earth Science Ser. Mon. 5 of Pergamon Press, New York.) Includes papers which are cited separately.  
2-60. (editor) Clays and clay minerals, V. 8 Natl. Conf. Clays and Clay Minerals, 8th, Norman, Okla., Oct. 1959, Proc., 292 p. incl. geol. sketch maps, sections, diagrams, and tables, also illus., 1960. (Issued as Internat. Earth Science Ser. Mon. 9 of Pergamon Press, New York.) Includes individual papers which are cited separately.
- SWINGLE, George D.  
1-60. (compiler) Rockwood quadrangle, Roane County, Tennessee Tennessee Div. Geology Geol. Map GM 123-SW, scale 1 31,680 (1 in. to 1 1/2 mi.), with section [1960]  
2-60. (compiler) Jacksboro quadrangle, Campbell County, Tennessee Tennessee Div. Geology Geol. Map GM 136-SW, scale 1 31,680 (1 in. to 1 1/2 mi.), with sections [1960].  
3-60. (compiler) Lake City quadrangle, Anderson County, Tennessee Tennessee Div. Geology Geol. Map GM 137-NW, scale 1 31,680 (1 in. to 1 1/2 mi.), with sections [1960]
- SWINTON, William Elgin  
1-60. Roy Chapman Andrews, 1884-1960. Nature (London), v. 186, no. 4725, p. 594, May 21, 1960.
- SWITZER, George S.  
1-60. (and SWANSON, Howard Eugene) Paratellurite, a new mineral from Mexico Am. Mineralogist, v. 45, nos. 11-12, p. 1272-1274 incl table, Nov.-Dec 1960.  
2-60 (and CLARKE, Roy S., Jr., and SINKANKAS, John) Fluorine in hambergite [abs.]. Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1987, Dec. 1960.
- [SYROCKI, B. John]  
1-60. Science for children, area 9--Rocks and soil (ground water) Albany, New York State Education Dept., Bur. Elementary Curriculum Devel., 20 p., illus., 1960

TABIKH, A. A.

- 1-60. (and BARSHAD, Isaac, and OVERSTREET, Roy) Cation-exchange hysteresis in clay minerals Soil Sci, v. 90, no. 4, p. 219-226 incl. tables and illus., Oct. 1960

TABOR, Rowland W.

- 1-60. Diaphthoritic gneiss in the northern Cascades, Washington, and its structural significance [abs] Geol. Soc. America Bull., v 71, no 12, pt 2, p 2079, Dec. 1960

TAGGART, Millard Seals, Jr.

- 1-60. (and KAISER, Albert D., Jr.) Clay mineralogy of Mississippi River deltaic sediments Geol. Soc. America Bull, v 71, no 5, p 521-530 incl. sketch map, diagrams, and table, May 1960

TAKAHASHI, Taro

- 1-60 Supergene alteration of zinc and lead deposits in limestone Econ. Geology, v 55, no. 6, p. 1083-1115 incl. diagrams and tables, Sept.-Oct. 1960

TAKEUCHI, Hitoshi. See PRESS, Frank 2-60

TALIAFERRO, Nicholas Lloyd See BYERLY, Perry 3-60

TALMADGE, Robert R.

- 1-60. On Gondwana and the hallotids, a hypothesis Veliger, v 3, no 1, p. 11-13, July 1, 1960.

TALWANI, Manik. See also SUTTON, G. H. 2-60, WORZEL, J L 1-60

- 1-60. (and EWING, William Maurice.) Rapid computation of gravitational attraction of three-dimensional bodies of arbitrary shape. Geophysics, v 25, no 1, p. 203-225 incl. diagrams, charts, and tables, Feb. 1960.  
2-60 (and WORZEL, John Lamar, and EWING, William Maurice) Gravity anomalies and structure of the Bahamas Caribbean Geol Conf, 2d, Mayaguez, Puerto Rico, Jan. 4-9, 1959, Trans, p. 156-161 incl. index and sketch maps, with discussion by H. H. Hess, 1960  
3-60. Gravity anomalies in the Bahamas and their interpretation [abs] Dissert Abs., v 21, no. 4, p. 852-853, Oct. 1960

TAMERS, Murry Allen

- 1-60. Carbon-14 dating with the liquid scintillation counter--Total synthesis of the benzene solvent Science, v. 132, no. 3428, p 668-669, Sept. 9, 1960.

TAMURA, T. See PARKER, Frank L 1-60, 2-60, STRUXNESS, E. G. 1-60.

TANGUY, D. R. See TIXIER, Maurice Pierre 2-60

TANNER, Allan Bain

- 1-60. Usefulness of the emanation method in geologic exploration Art. 51 in U. S. Geol Survey Prof. Paper 400-B, p B111-B112, 1960.  
2-60. Meteorological influence on radon concentration in drillholes. Am. Inst. Mining, Metall., and Petroleum Engineers Trans 1959, v. 214, p. 706-708 incl. diagrams, 1960.

TANNER, Dallas. See HUNT, Alice P. 1-60

TANNER, J. G.

- 1-60. (and UFFEN, Robert James) Gravity anomalies in the Gaspé Peninsula, Quebec. Dominion Observatory Ottawa Pub., v. 21, no 5, p. 219-260 incl. maps, diagrams, and tables, 1960.

TANNER, Lloyd George

- 1-60. Rhinoceroses of the past Nebraska Univ. State Mus., Mus. Notes, no 11 (Nebraska Univ. News, v. 39, no. 26), p. [1-3] incl. illus., Feb. 1960.

## TANNER

TANNER, William Francis, Jr.

- 1-60. Numerical comparison of geomorphic samples Science, v. 131, no 3412, p. 1525-1526 incl diagram, May 20, 1960
- 2-60 Shallow water ripple mark varieties [Florida] Jour Sed Petrology, v. 30, no 3, p 481-485 incl. index map, diagrams, and illus, Sept. 1960.
- 3-60. Expanding shoals in areas of wave refraction Science, v 132, no 3433, p. 1012-1013 incl sketch map and diagram, Oct. 14, 1960
- 4-60. Helicoidal flow, a possible cause of meandering Jour Geophys. Research, v 65, no. 3, p 993-995 incl diagrams, Mar 1960
- 5-60. Florida coastal classification [abs.] Am Assoc Petroleum Geologists Bull., v. 44, no 9, p 1604, Sept. 1960
- 6-60. Florida coastal classification Gulf Coast Assoc. Geol Socs. Trans, v 10, p 259-266 incl. sketch maps and tables, 1960
- 7-60 Paleogeography--Coastal studies provide more questions than answers Shale Shaker, v 11, no 3, p 14-17 incl. sketch maps, diagram, and table, Nov. 1960
- 8-60. (editor) 11th annual symposium on highway engineering geology, Florida State University, February 26, 1960, proceedings Tallahassee, Florida Geol Survey, 119 p, illus, Sept 1960 Includes individual papers which are cited separately.
- 9-60. 'Perched' barrier islands, east Florida coast Southeastern Geology, v 2, no 2, p 133-135, table, Nov. 1960
- 10-60 Bases for coastal classification Southeastern Geology, v 2, no 1, p 13-22, table, Aug 1960
- 11-60. Relative accuracies of thickness based on true and apparent dips Shale Shaker, v 11, no 1, p 17-18 incl. diagram, Sept 1960

TAPPAN, Helen Niña

- 1-60. Cretaceous biostratigraphy of northern Alaska Am. Assoc Petroleum Geologists Bull., v. 44, no 3, p 273-297 incl. index maps, charts, sections, and illus, Mar 1960

TASCH, Paul. See also REISER, Ralph 1-60

- 1-60. Conchostracan genus Anomalonema in the American Pennsylvanian [Pennsylvania] Jour Paleontology, v 34, no 2, p 285-289 incl. table, illus, Mar 1960
- 2-60 (and STUDE, Jerry R) Sclerodonta from the Fort Riley limestone (Wolfcampian) of Kansas [abs.] Geol Soc. America Bull., v. 71, no 12, pt. 2, p 1988, Dec. 1960
- 3-60 Paleoeological observations of the Wellington salt (Hutchinson member) Kansas Acad Sci Trans, v 63, no 1, p 24-30, illus., spring 1960

TASHA, Herman J. See ZEIGLER, John M. 2-60

TATEM, William A

- 1-60 Melting behavior of illite [abs] Am Ceramic Soc Bull., v 39, no. 4, p 241, Apr. 1960

TATLOCK, Donald Bruce. See also WALLACE, R E 2-60, 3-60

- 1-60 (and WALLACE, Robert Earl, and SILBERLING, Norman John) Alkali metasomatism, Humboldt Range, Nevada [abs] Geol Soc America Bull, v. 71, no. 12, pt. 2, p 2079-2080, Dec 1960.

TATOR, Benjamin Almon

- 1-60. (and others) Photo interpretation in geology, Chap 4, in Am Soc. Photogrammetry, Manual of photographic interpretation Washington, D C, p 169-342 incl sketch map, diagrams, and illus, 1960

TATUM, James L.

- 1-60. Oil and gas prospects in the Paradox Basin [Colorado Plateau], in Geology of the Paradox Basin fold and fault belt Four Corners Geol. Soc., 3d Field Conf., 1960, [Guidebook] p. 125-126, illus., 1960

TAUBENECK, William Harris See also BROWN, W Liddle 1-60, POLDERVAART, Arie 1-60

- 1-60. (and POLDERVAART, Arie) Geology of the Elkhorn Mountains, north-



- eastern Oregon--Pt. 2, Willow Lake intrusion Geol Soc America Bull., v 71, no 9, p 1295-1321 incl. sketch maps, diagrams, and tables, illus , Sept. 1960
- 2-60. Intrusion of granitic magmas in the Cornucopia stock, Wallowa Mountains, northeastern Oregon [abs ] Geol. Soc America Bull., v 71, no 12, pt 2, p 1988, Dec 1960
- 3-60 Emplacement of granitic plutons in northeastern Oregon [abs.] Geol Soc. America Bull , v 71, no 12, pt. 2, p 2026, Dec. 1960
- TAVERA AMEZCUA, Eugenio
- 1-60 (and JIMÉNEZ LÓPEZ, Luis S., and LÓPEZ AVILA, Javier) Yacimientos de barita en el distrito de Galeana, Nuevo León México Consejo Recursos Nat. no Renovables Bol 55, 70 p., illus incl geol. maps, 1960.
- TAX, Sol
- 1-60 (and CALLENDER, Charles, editors) Evolution after Darwin--V. 3, Issues in evolution--The University of Chicago centennial discussions Chicago, Ill., Univ. Chicago Press, 310 p , 1960. Includes individual papers which are cited separately.
- 2-60. (editor) Evolution after Darwin--V 2, The evolution of man--Man, culture, and society Chicago, Ill., Univ Chicago Press, 473 p. incl illus., 1960 Includes individual papers which are cited separately.
- 3-60 (editor) Evolution after Darwin--V. 1, The evolution of life, its origin, history, and future Chicago, Ill , Univ Chicago Press, 629 p incl. illus., 1960. Includes individual papers which are cited separately.
- TAYLOR, Allan M.
- 1-60. (and ROY, Rustum) Structural and compositional changes during the dehydration-rehydration of phillipsite and related synthetic zeolite Na-P [abs ] Geol Soc. America Bull , v 71, no 12, pt. 2, p 1989, Dec. 1960
- TAYLOR, Charles Alfred
- 1-60. (and UNDERWOOD, Frank Alan) A twinning interpretation of 'superlattice' reflexions in X-ray photographs of synthetic klockmannite, CuSe Acta Cryst., v 13, pt. 4, p 361-362 incl diagrams and table, Apr. 1960
- TAYLOR, Don Ray
- 1-60. The Cretaceous section of central Texas, in Cretaceous stratigraphy of the Grand and Black Prairies, east-central Texas Baylor Geol. Soc., Field Conf , Apr. 1960, Guidebook, p 69-74, 1960
- 2-60. The Del Rio formation, in Cretaceous stratigraphy of the Grand and Black Prairies, east-central Texas. Baylor Geol. Soc , Field Conf , Apr. 1960, Guidebook, p 95-97, 1960
- 3-60 The Buda limestone, in Cretaceous stratigraphy of the Grand and Black Prairies, east-central Texas Baylor Geol Soc., Field Conf , Apr. 1960, Guidebook, p 98-99, 1960
- TAYLOR, Dwight Willard. See also HIBBARD, C. W 2-60
- 1-60. Distribution of the freshwater clam *Pisidium ultramontanum*--A zoogeographic inquiry Am. Jour. Sci., v. 258-A (Bradley Volume), p 325-334 incl sketch maps, illus., 1960.
- 2-60 Late Cenozoic molluscan faunas from the High Plains U. S. Geol. Survey Prof Paper 337, 94 p., illus , 1960
- TAYLOR, Garvin Lawrence. See HARRIS, John F. 1-60
- TAYLOR, H. W. See WHYTE, G N. 1-60
- TAYLOR, Harry Francis West. See GARD, John Alan 1-60, ROY, Della Martin 1-60
- TAYLOR, Hugh Pettingill, Jr. See also NOBLE, J. A. 1-60
- 1-60. (and NOBLE, James Alexander) Origin of the ultramafic complexes in southeastern Alaska Internat. Geol Cong , 21st, Copenhagen, 1960, Rept , pt. 13, p 175-187 incl. index and geol. sketch maps, 1960.

## TAYLOR

- 2-60. (and EPSTEIN<sup>a</sup>, Samuel)  $O^{18}/O^{16}$  ratios in coexisting minerals of igneous rocks [abs.] Jour. Geophys. Research, v 65, no. 8, p 2528, Aug. 1960.
- 3-60. (and EPSTEIN<sup>a</sup>, Samuel)  $O^{18}/O^{16}$  ratios in rocks and coexisting minerals of the Skaergaard intrusion of east Greenland [abs.] Geol. Soc. America Bull, v. 71, no 12, pt. 2, p 1989, Dec 1960
- TAYLOR, Hugh S. See EARDLEY, Armand John 5-60, RUSSELL, Richard Joel 3-60, WILSON, John T 4-60
- TAYLOR, Omer James. See also DAMON, P E. 1-60
- 1-60 Correlation of volcanic rocks in Santa Cruz County, Arizona Arizona Geol Soc Digest, v. 3, p. 87-91 incl correlation chart and table, Mar 1960.
- TAYLOR, Philip Seyfang
- 1-60. A report on fossil bison from a peat bog in St Paul, Minnesota Minnesota Acad. Sci. Proc. 1957-58, v. 25-26, p 200-203, 1960.
- TAYLOR, Richard Bartlett. See BUSH, Alfred Lerner 1-60
- TAYLOR, Richard Spence
- 1-60. Some Pleistocene lakes of northern Alberta and adjacent areas revised, Alberta Soc Petroleum Geologists Jour, v 8, no 6, p 167-178, 185 incl sketch maps, June 1960, originally published, Edmonton Geol Soc. Quart, v 2, no. 4, p 1-9, Dec 1958 [May 22, 1959].
- TAYLOR, Robert W.
- 1-60. Method of studying the phase relations of oxides of the transition metals with special reference to the system  $FeO-Fe_2O_3-TiO_2$  [abs.] Geol Soc America Bull, v 71, no. 12, pt 2, p 1990, Dec 1960.
- TAYLOR, Russell N.
- 1-60. The Jocelyn-Varn Fry sandstone field, Taylor County, Texas, in Abilene Geol Soc, Geological contributions 1960, p 68-76, illus., 1960
- TAYLOR, Stanley A G.
- 1-60 [Judgment Cliff landslide, Jamaica] Geonotes, v 2, pt. 4 (Jamaica Geol Survey Pub. 59), p 152-153, 1959 [Jan. 1960].
- TAYLOR, Stuart Ross
- 1-60. Occurrence of alkali metals in some Gulf of Mexico sediments--Amended rubidium values and K/Rb ratios Jour Sed Petrology, v 30, no. 2, p 317-321 incl diagram and tables, June 1960 (Discussion of paper by C. W. Welby, v. 28, no. 4, p 431-452, Dec. 1958)
- 2-60. (and AHRENS, Louis Herman) Spectrochemical analysis, Chap 4 in Smales, A A, and Wager, L. R., ed, Methods in geochemistry New York, N Y, Intersci Publishers, p. 81-110, illus, 1960
- TEATER, Thelma C. See McGRAIN, Preston 2-60
- TEDLIE, William Donald
- 1-60 Acid rocks associated with an intrusive complex, Coppermine River Area, Northwest Territories [abs.] Canadian Mining Jour, v 81, no 10, p. 133, Oct 1960
- TEDROW, John C F.
- 1-60 (and HARRIES, H.) Tundra soil in relation to vegetation, permafrost and glaciation Oikos--Acta Oecologica Scandinavica (Copenhagen), v 11, fasc. 2, p. 237-249 incl. sketch maps, 1960
- TEGLAND, Edward R See MALHOTRA, Chamen L 1-60
- TEICHERT, Curt
- 1-60. (and KUMMEL, Bernhard) Size of endoceroid cephalopods Breviora, no 128, 7 p., illus., Dec. 20, 1960.

TEISSEYRE, Roman See DROSTE, Sophia 1-60

TEMPLE, Alan Keith

- 1-60. (and HEINRICH, Eberhardt William) Spurrite from Northern Coahuila, Mexico [abs] Geol Soc America Bull, v. 71, no 12, pt 2, p 1990, Dec. 1960

TEMPLETON, David Henry

- 1-60 (and DAUBEN, Carol H.) Polarized octahedra in barium tetratitanate Jour. Chem Physics, v 32, no 5, p. 1515-1518 incl diagrams and tables, May 1960.

TERASMAE, Jaan See also MacDLINTOCK, Paul 1-60, RADFORTH, Norman William 1-60

- 1-60 (and HUGHES, Owen Lloyd) Glacial retreat in the North Bay area, Ontario Science, v. 131, no 3411, p 1444-1446 incl. index map, May 13, 1960.
- 2-60. Surficial geology of Cornwall map-area, Ontario and Quebec, 31 G/2 Canada Geol Survey Paper 60-28, 4 p., geol. map, 1960
- 3-60 Contributions to Canadian palynology, No. 2--Pt. 1, A palynological study of post-glacial deposits in the St Lawrence Lowlands [Quebec], Pt. 2, A palynological study of Pleistocene interglacial beds at Toronto, Ontario Canada Geol. Survey Bull 56, 41 p., illus., 1960
- 4-60 (and HUGHES, Owen Lloyd) A palynological and geological study of Pleistocene deposits in the James Bay Lowlands, Ontario (42N1/2) Canada Geol. Survey Bull 62, ix, 15 p., illus., with French abs., 1960.

TERRIERE, Robert Theodore

- 1-60. Geology of Grosvenor quadrangle, Texas, and petrology of some of its Pennsylvanian limestones [abs] Dissert Abs., v. 21, no 6, p. 1530-1531, Dec. 1960.
- 2-60 Geology of the Grosvenor quadrangle, Brown and Coleman Counties, Texas U. S Geol. Survey Bull 1096-A, p. 1-35, illus incl geol map, 1960.

TERZAGHI, Karl

- 1-60 (and LEPS, Thomas MacMaster) Design and performance of Vermillion Dam [Calif] Am Soc. Civil Engineers Trans 1960, v. 125, pt 1, p 63-100, illus, with discussions by M L Dickinson and others, slightly revised 1960, originally published 1958
- 2-60 From theory to practice in soil mechanics--Selections from the writings of Karl Terzaghi, with bibliography and contributions on his life and achievements prepared by L. Bjerrum, A Casagrande, R. B. Peck, A W Skempton New York, N. Y., John Wiley and Sons, 425 p incl. sketch map, sections, diagrams, and illus, 1960

TEXAS BOARD OF WATER ENGINEERS, Ground Water Division

- 1-60. Reconnaissance investigation of the ground water resources of the Canadian River Basin, Texas Texas Board of Water Engineers Bull 6016, 27 p, illus incl geol map, Sept 1960.

TEXAS UNIVERSITY, Bureau of Economic Geology

- 1-60. Aspects of the geology of Texas--A symposium Texas Univ. Pub. 6017, 117 p, illus incl geol. map, Sept 1, 1960. Includes individual papers which are cited separately

TEXAS UNIVERSITY GEOLOGICAL SOCIETY

- 1-60. (FOLK, Robert Louis, leader) Tertiary field trip, December 10, 1960 Austin, Texas, 29 p, sketch map and section, 1960.

THALMANN, Hans Ernest

- 1-60. An index to the genera and species of the Foraminifera, 1890-1950. Stanford Univ, Stanford, Calif, George Vanderbilt Found., 393 p., illus, 1960

THAMES, Clement Beal, Jr.

- 1-60 Facies relationships in the Mississippian effects upon fluid migration Williston Basin Oil Rev., v 9, no 2, p 20-22, illus, Apr 1960.

## THARIM

THARIM, James C.

- 1-60. Clay mineralogy of the Cordilleran and Keewatin tills in the vicinity of Calgary, Alberta, Canada [abs.] Geol. Soc. America Bull , v 71, no. 12, pt 2, p. 1990-1991, Dec 1960.

THATCHER, Leland L. See CARLSTON, Charles William 1-60, MAGIN, George B., Jr 1-60

THAYER, Thomas Prence

- 1-60. (and BROWN, Clarence Ervin) Upper Triassic graywackes and associated rocks in the Aldrich Mountains, Oregon Art 139 in U. S Geol Survey Prof Paper 400-B, p. B300-B302 incl. geol. map, 1960  
2-60 Some critical differences between alpine-type and stratiform peridotite-gabbro complexes Internat. Geol. Cong , 21st, Copenhagen, 1960, Rept , pt 13, p 247-259 incl. table, 1960.

THEOBALD, Paul Kellogg, Jr See also OVERSTREET, W C 3-60

- 1-60. (and HAVENS, Raymond G.) Base metals in biotite, magnetite, and their alteration products in a hydrothermally altered quartz monzonite porphyry sill, Summit County, Colorado [abs ] Geol Soc. America Bull , v. 71, no. 12, pt. 2, p. 1991, Dec. 1960

THIEL, Edward, 1928-1961 See WOOLLARD, George Prior 1-60

THIEL, George Alfred See EMMONS, William Harvey 1-60, SCHWARTZ, George Melvin 1-60

THODE, Henry George. See also YOUNG, B. G. 1-60

- 1-60. The story of isotopes Royal Soc. Canada Minutes Proc , 3d ser., v. 54, p 67-80, 1960.

THOMAS, G E

- 1-60. (and GLAISTER, Rowland Perry) Facies and porosity relationships in some Mississippian carbonate cycles of Western Canada basin Am. Assoc. Petroleum Geologists Bull , v. 44, no 5, p 569-588 incl index and sketch maps, chart, diagrams, sections, and illus , May 1960  
2-60. (and GLAISTER, Rowland Perry) Facies and porosity relationship in some Mississippian carbonate cycles of Western Canada Basin [abs ] Am Assoc. Petroleum Geologists Bull., v. 44, no 6, p 961, June 1960.  
3-60. (and RHODES, Howard S.) Textural and porosity studies of some Devonian dolomite and limestone reef complexes, Edmonton and Swan Hills areas, Alberta [abs.] Canadian Oil and Gas Industries, v. 13, no. 4, p. 103, Apr 1960.  
4-60 Facies and porosity relationship in some Mississippian carbonate cycles of the Western Canada Basin [abs ] Am Assoc. Petroleum Geologists Rocky Mtn Sec Geol Record 1960, p 165 [1960].

THOMAS, G. W

- 1-60. Retention of KCl by halloysite [abs ] Virginia Jour. Sci , v. 11, no. 4, p. 210, Sept 1960.

THOMAS, George C

- 1-60. (and PYE, Willard Dickison) Mississippian sedimentation and stratigraphy of southeastern Arizona [abs ] Geol Soc. America Bull , v 71, no. 12, pt 2, p. 1991-1992, Dec 1960.

THOMAS, George L. See JONAS, Edward Charles 2-60

THOMAS, George Richard

- 1-60. Geology of recent deep drilling in Eastern Kentucky Kentucky Geol Survey, ser. 10, Spec. Pub. 3, p 10-28, illus , 1960

THOMAS, Gerald Waylett See RICH, Charles Irvin 1-60

THOMAS, Grant W

- 1-60. Factors affecting the removal of salts from halloysite Soil Sci., v 90, no 6, p 344-347 incl diagrams and tables, Dec 1960

THOMAS, Harold Edgar

- 1-60. (and WILSON, M T) A case of underground piracy Internat Geol. Cong., 21st, Copenhagen, 1960, Rept., pt 20, p. 24-31, 1960
- 2-60 (and WHITE, Donald Edward) Meteoric versus nonmeteoric ground water Am Soc. Civil Engineers Trans. 1960, v. 125, pt 1, p 1304-1307, slightly revised 1960, originally published 1959
- 3-60 Drainage basin tributary to Lake Mead, [Chap.] D in Pt 1 of Smith, W. O., Comprehensive survey of sedimentation in Lake Mead [Arizona-Nevada], 1948-49. U. S. Geol Survey Prof. Paper 295, p. 21-30, illus., 1960.
- 4-60. Essentials for optimum use of ground-water resources Western Resources Conf , 1st, 1959, Papers, p. 181-191, 1960

THOMAS, Horace Davis

- 1-60 Misuse of "bioclastic limestone" Am. Assoc Petroleum Geologists Bull , v 44, no. 11, p. 1833-1834, Nov. 1960

THOMAS, J F. J.

- 1-60. (and LYNCH, J J.) Determination of carbonate alkalinity in natural waters Am. Water Works Assoc. Jour., v. 52, no 2, p 259-268 incl. diagrams and tables, Feb. 1960

THOMAS, Leo Almor. See also TRI-STATE GEOL. FIELD CONF 1-60

- 1-60 (and BIGGS, Donald Lee) Rate and trend of carbonate diagenesis [abs.] Geol Soc America Bull., v. 71, no 12, pt 2, p 1992, Dec 1960.

THOMAS, Leonard C.

- 1-60. Geraldine-Ford Field, Culberson and Reeves Counties, Texas, in Geology of the Delaware basin. West Texas Geol Soc , Field Trip, Sept.-Oct 1960, Guidebook, p 76-77 incl. structure contour map, 1960.

THOMAS, R. P.

- 1-60. Secondary fertilizer minerals, in Am Inst Mining, Metall., and Petroleum Engineers, Industrial minerals and rocks, p. 759-762, 1960

THOMAS, Robert G.

- 1-60. Geohydrology of the coastal plain of Los Angeles County with application to an analog computer [abs.] California Assoc. Eng Geologists, 3d Ann Mtg , Berkeley, Oct 14-16, 1960, p 13-14 [1960]

THOMASON, Ben R., Jr.

- 1-60. El Mar field, Loving County, Texas, and Lea County, New Mexico, in Geology of the Delaware basin. West Texas Geol. Soc., Field Trip, Sept.-Oct. 1960, Guidebook, p. 71-75 incl structure contour and isopach maps, section, log, and table, 1960.

THOMASSON, Horace Gordon, Jr.

- 1-60. (and OLMSTED, Franklin Howard, and LeROUX, E F.) Geology, water resources, and usable ground-water storage capacity of part of Solano County, California U. S. Geol Survey Water-Supply Paper 1464, 693 p. incl tables, diagrams, and illus., also geol. maps and sections, 1960

THOMPSON, Charles E

- 1-60. (and NAKAGAWA, Harry M) Spectrophotometric determination of traces of lead in igneous rocks. U S Geol. Survey Bull 1084-F, p. 151-164, illus , 1960.

THOMPSON, George Albert

- 1-60. Problem of Late Cenozoic structure of the Basin Ranges Internat. Geol. Cong., 21st, Copenhagen, 1960, Rept., pt. 18, p. 62-68 incl. sections, diagram, and illus , 1960.
- 2-60 Crustal structure and Cenozoic deformation in the Basin and Range Province [abs.] Geol Soc America Bull , v. 71, no. 12, pt 2, p 1993-1994, Dec. 1960.

## THOMPSON

THOMPSON, Henry Dewey

1-60. Fundamentals of earth science 2d ed., New York, N Y, Appleton-Century-Crofts, Inc., 466 p., illus , 1960, originally published 1947.

THOMPSON, Lloyd G. D.

1-60. (and LaCOSTE, Lucien Jean Batiste) Aerial gravity measurements Jour Geophys. Research, v. 65, no 1, p. 305-322 incl sketch map, diagrams, tables, and illus., Jan. 1960

2-60. The status of the airborne gravity meter [abs ] Mining Eng., v. 12, no. 3, p 205, Mar. 1960.

THOMPSON, Marcus Luther

1-60. Stratigraphic distribution of American Pennsylvanian fusulinid Foraminifera Tohoku Univ Sci. Repts., 2d ser, Geology, Spec. V., no. 4, p. 109-116, illus , May 1960, reprinted as Illinois State Geol Survey Repr. Ser. 1961-D, Mar [!May] 1960

THOMPSON, Mary Eleanor. See GARRELS, Robert Minard 1-60, 2-60

THOMPSON, Raymond Melvin

1-60. Geology and petroleum possibilities of Alaska. Internat Geol Cong., 21st, Copenhagen, 1960, Rept., pt. 11, p 27-36 incl. geol. and tectonic sketch maps, 1960.

THOMSON, Robert

7-60. Legends, symbols and location maps to accompany uncoloured geologic map sheets (white prints) of vicinity of Cobalt (1960) Ontario Ontario Dept Mines, 1960, revised, Nov. 1961.

THOMPSON, Robert Bruce, Jr.

1-60. Some observations on structure and metamorphism in the Harrisburg, N. Y. quadrangle New York Acad. Sci. Trans., ser. 2, v. 22, no. 3, p. 191-195, Jan. 1960

THOMPSON, Robert Mitchell

1-60. (and MONTGOMERY, J. H.) Barium silicates from the Yukon Territory [abs.] Canadian Mining and Metall Bull , v. 53, no 575, p. 200, Mar 1960

THOMPSON, Ted. See GIROUX, Paul R. 1-60

THOMPSON, Thomas Francis

1-60. The Contractor's Hill slide, and it's causes and correction [abs ] California Assoc. Eng Geologists, 3d Ann Mtg , Berkeley, Oct 14-16, 1960, p. 14 [1960]

THOMPSON, Thomas Gordon. See BARKLEY, Richard A 1-60

THOMPSON, Will F

1-60. The shape of New England Mountains, Pt. 1 Appalachia, no. 131, p. 145-159, illus , Dec. 1960

THOMPSON, Willard D., Jr

1-60. Geology of the northern part of Cherry Creek metamorphic rocks, Madison Co , Montana, in West Yellowstone--Earthquake area Billings Geol. Soc., 11th Ann. Field Conf., Sept. 1960, [Guidebook] p 135-147 incl. index and geol sketch maps, diagrams, and illus , 1960

THOMSON, James Edgar. See also GINN, R M 2-60, PEARSON, W. J. 2-60

1-60. On the origin of algal-like forms and carbon in the Sudbury Basin, Ontario [abs ] Royal Soc Canada Minutes Proc., 3d ser , v 54, App C, p. 37, 1960

2-60. On the origin of algal-like forms and carbon in the Sudbury basin, Ontario Royal Soc Canada Trans., 3d ser., v 54, sec 4, p 65-75, illus., June 1960.

- 3-60 Massive sulphide occurrences in Ontario, in Symposium on the occurrence of massive sulphide deposits in Canada Canadian Mining and Metall. Bull., v. 53, no 575, p. 136-140 incl sketch map and table, Mar. 1960, Canadian Inst Mining and Metallurgy Trans., v 63, p. 77-81, 1960
- 4-60. Uranium and thorium deposits at the base of the Huronian system in the District of Sudbury Ontario Dept. Mines Geol Rept. 1, 40 p, illus incl. geol. sketch maps, 1960
- 5-60 (and CARD, Kenneth D.) Kelly township, District of Sudbury Ontario Dept. Mines Prelim. Map P.50, geol. map, scale 1 in. to 1/4 mi. [Mar 11, 1960].
- 6-60 (and CARD, Kenneth D.) Davis township, District of Sudbury Ontario Dept Mines Prelim Map P 51, geol map, scale 1 in to 1/4 mi. [Mar 11, 1960].
- 7-60 Macleannan township, District of Sudbury Ontario Dept Mines Prelim. Map [P] 52, geol. map, scale 1 in to 1/4 mi [Apr. 14, 1960]
- 8-60. Scadding township, District of Sudbury Ontario Dept. Mines Prelim. Map [P.] 53, geol. map, scale 1 in. to 1/4 mi. [Apr. 14, 1960].
- 9-60 Sudbury basin series--Sheet 2, Dowling township Ontario Dept. Mines [Prelim. Map P.43], geol. map, scale 1 in. to 1/4 mi. [Feb 19, 1960].
- 10-60 Sudbury basin series--Sheet 3, Balfour township Ontario Dept Mines [Prelim. Map P.44], geol map, scale 1 in. to 1/4 mi [Feb 19, 1960].
- 11-60. Sudbury basin series--Sheet 5, Lumsden township Ontario Dept. Mines [Prelim. Map P.41], geol. map, scale 1 in to 1/4 mi. [Feb. 19, 1960].
- 12-60. Sudbury basin series--Sheet 6, Hanmer township Ontario Dept. Mines [Prelim. Map P.42], geol. map, scale 1 in. to 1/4 mi [Feb 19, 1960].
- 13-60. Sudbury basin series--Sheet 4, Rayside township Ontario Dept Mines [Prelim Map P.45], geol map, scale 1 in to 1/4 mi [Feb 19, 1960].
- 14-60. Sudbury basin series--Sheet 7, Fairbank township Ontario Dept. Mines [Prelim Map P.46], geol map, scale 1 in to 1/4 mi [Feb 19, 1960].

THOMSON, Robert

- 1-60. Coleman tp, con. 3, lots 10, 11, 12, con 4, lots 8-12, and Gillies Limit, blocks 3,4,5, western "A" claims, District of Timiskaming, Ontario Ontario Dept. Mines Provisional Map P-81, geol map, scale 1 in. to 400 ft, with separate legend [Nov.] 1960.
- 2-60. Part of Coleman township, con 3 and 4, lots 13, 14, 15, District of Timiskaming, Ontario Ontario Dept Mines Provisional Map P-79, geol. map, scale 1 in to 400 ft., with separate legend, [Nov.] 1960.
- 3-60. Part of Coleman township, con 5 and 6, lots 7-11, District of Timiskaming, Ontario Ontario Dept. Mines Provisional Map P-80, scale 1 in. to 400 ft, with separate legend, [Nov] 1960.
- 4-60 Part of Latchford townsite, District of Timiskaming, Ontario Ontario Dept. Mines Provisional Map P-82, geol. map, scale 1 in to 400 ft, with separate legend, [Nov.] 1960.
- 5-60. Part of Gillies Limit, blocks 9, 10, 11, 17, 18, 19, District of Timiskaming, Ontario Ontario Dept Mines Provisional Map P-83, geol map, scale 1 in to 400 ft, with separate legend, [Nov] 1960
- 6-60. (compiler) Underground workings in southeastern part of Bucke township and profile across Lake Timiskaming fault zone, District of Timiskaming, Ontario Ontario Dept. Mines Provisional Map P-67A, with separate legend, 1960.
- 7-60. Part of Lorrain township, con 11, lots 1-6, con. 12, lots 1-5, District of Timiskaming, Ontario Ontario Dept. Mines Provisional Map P-61, geol. map, scale 1 in to 400 ft., [Aug. 17] 1960.
- 8-60. Part of Lorrain township, con. 9 and 10, lots 1-6, District of Timiskaming, Ontario Ontario Dept. Mines Provisional Map P-62, scale 1 in. to 400 ft., [Aug. 17] 1960.
- 9-60. Lorrain township, con. 9, lots 7,8,9, con 10, lots 7,8, District of Timiskaming, Ontario Ontario Dept Mines Provisional Map P-63, scale 1 in. to 400 ft, [Aug 17] 1960
- 10-60. Lorrain township, con 7, lots 7-12, con. 8, lots 7-10, District of Timiskaming, Ontario Ontario Dept. Mines Provisional Map P-64, scale 1 in. to 400 ft, [Aug. 17] 1960.
- 11-60 Part of Lorrain township, con 7 and 8, lots 1-6, District of Timiskaming, Ontario Ontario Dept. Mines Provisional Map P-65, scale 1 in. to 400 ft, [Aug. 17] 1960.

## THOMSON

THOMSON, Robert D.

- 1-60. (and OTTE, Mary E, and ELA, Robert E.) The mineral industry of Pennsylvania in 1958 Pennsylvania Geol. Survey, 4th ser, Inf Circ. 36, 47 p., illus, 1960.

THOMSEN, Richard Wyatt See BIDEAUX, Richard August 2-60

THORNTON, Charles Perkins

- 1-60. (and TUTTLE, Orville Frank) Chemistry of igneous rocks--[Pt] 1, Differentiation index Am Jour Sci., v 258, no 9, p. 664-684 incl diagrams, Nov 1960

THORPE, Arthur. See FRIEDMAN, Irving I 1-60, 3-60, SENFTLE, Frank Edward 1-60

THORSEN, Gerald W See BENNETT, W. A G 1-60

THORSTEINSSON, Raymond. See also BOUCOT, A J. 4-60, HARKER, Peter 1-60

- 1-60. (and TOZER, Edward Timothy) Stratigraphy and structural history of Canadian arctic islands [abs] Am. Assoc Petroleum Geologists Bull, v 44, no. 7, p. 1258, July 1960
- 2-60. (and TOZER, Edward Timothy) Summary account of structural history of the Canadian Arctic Archipelago since Precambrian time Canada Geol. Survey Paper 60-7, 25 p., illus, 1960
- 3-60. Lower Palaeozoic stratigraphy of the Canadian Arctic Archipelago [abs] Oil in Canada, v 12, no 12, p 73, Jan. 18, 1960

THRAILKILL, John Vernon

- 1-60 Origin and development of Fulford Cave, Colorado, in Moore, G W, ed, Origin of limestone caves--A symposium with discussion Natl. Speleol Soc. Bull, v. 22, pt 1, p. 54-65, illus, Jan 1960

THREET, Richard Lowell. See also MARSELL, R E 1-60

- 1-60 Geomorphology of east-central Nevada, in Geology of east central Nevada Intermountain Assoc. Petroleum Geologists, 11th Ann. Field Conf, 1960 Guidebook, p 7-10 incl. sketch map, 1960

THWAITES, Fredrik Turville, 1883-1961

- 1-60. Evidences of dissected erosion surfaces in the Driftless Area Wisconsin Acad Sci., Arts, and Letters Trans 1960, v. 49, p 17-49 incl. topographic and physiographic maps, sections, diagrams, and illus., 1960.

THYSSEN-BORNEMISZA, Stephen

- 1-60 (and STACKLER, Willi Friedrich) Determination of the horizontal gravity gradient with the gravimeter Alberta Soc. Petroleum Geologists Jour, v 8, no. 10, p. 261-270 incl. diagrams and table, Oct 1960

TIEN, Chi

- 1-60. Temperature distribution of an idealized ice cap U S Army, Corps of Engineers, Snow Ice and Permafrost Research Establishment, Research Rept 64, 8 p, illus., July 1960

TIHEN, Joseph Anton

- 1-60 On *Neoscaphiopus* and other Pliocene pelobatid frogs Copeia 1960, no. 2, p 89-94 incl. illus., June 29, 1960.

TILDEN, Paul Mason

- 1-60. Nature in rock and mineral Nat History, v. 69, no 3, p. 64-69 incl. illus, Mar 1960.
- 2-60. Nature in rock and mineral Nat History, v. 69, no 7, p. 62-65 incl illus., Aug -Sept 1960.

TILLEY, Cecil Edgar

- 1-60. Memorial of Leonard James Spencer [1870-1959] Am. Mineralogist, v. 45, nos. 3-4, p 403-406 incl portrait, Mar.-Apr. 1960.



- 2-60. [Arthur Louis Day, 1869-1960] Geol. Soc. London Proc. 1959-60, no 1582, p. 130-132, Oct 4, 1960
- 3-60. Differentiation of Hawaiian basalts--Some variants in lava suites of dated Kilauean eruptions Jour Petrology (Oxford, England), v 1, no. 1, p. 47-55 incl. diagrams and tables, Feb 1960.
- 4-60 Kilauea [Hawaii] magma 1959-60 Geol. Mag. (Hertford, England), v. 97, no 6, p. 494-497 incl diagrams and tables, Nov-Dec 1960.
- TILLING, Robert Ingersoll. See WINCHELL, Horace 1-60
- TILLMAN, Chauncey Glenn
- 1-60. Spathacalymene, an unusual new Silurian trilobite genus [Indiana] Jour Paleontology, v. 34, no 5, p. 891-895, illus, Sept. 1960
- TILTON, George Robert See also BASS, M. N. 2-60, WETHERILL, G. W. 1-60
- 1-60. Volume diffusion as a mechanism for discordant lead ages Jour Geophys Research, v 65, no. 9, p 2933-2945 incl diagrams and tables, Sept. 1960.
- 2-60. (and others) 1000-million-year-old minerals from the eastern United States and Canada Jour. Geophys Research, v. 65, no. 12, p 4173-4179 incl index map and tables, Dec 1960.
- 3-60. (and REED, George W., Jr.) Concentration of lead in ultramafic rocks by neutron activation analysis [abs.] Jour. Geophys Research, v 65, no. 8, p. 2529, Aug. 1960
- TING, William Su. See AXELROD, Daniel Isaac 1-60, 2-60
- TIPHANE, Marcel
- 1-60. Sédimentation marine aux cayes de Floride [abs.] Assoc. Canadienne-Française Av. Sci Annales, v. 26, p. 110, 1960.
- TIPTON, Merlin Joseph. See also STEECE, F V. 1-60
- 1-60. A new glacial drift sheet in South Dakota? South Dakota Acad. Sci. Proc. 1959, v. 38, p. 45-48, illus., Jan. 1960
- TISCHLER, Herbert. See LANGENHEIM, Ralph Louis, Jr. 3-60
- TISOT, P R.
- 1-60. (and MURPHY, W. I. R) Physicochemical properties of Green River oil shale--Particle size and particle-size distribution of inorganic constituents, Jour Chem. and Eng Data, v. 5, no. 4, p 558-562 incl diagrams, table, and illus., Oct. 1960..
- TIXIER, Maurice Pierre See also DOLL, H-G. 2-60
- 1-60 (and ALGER, Robert P, and DOH, Charles A.) Sonic logging Am. Inst. Mining, Metall., and Petroleum Engineers Trans. 1959, v. 216, p. 106-114 incl. diagrams and tables, 1960
- 2-60. (and ALGER, Robert P., and TANGUY, D R.) New developments in induction and sonic logging Jour Petroleum Technology, v. 12, no 5, p 79-87 incl diagrams, May 1960.
- TOCHER, Don See also OAKESHOTT, G B 1-60
- 1-60 Two Hollister, California, earthquakes [abs] Geol. Soc. America Bull., v. 71, no. 12, pt 2, p 2080, Dec 1960.
- 2-60. Movement on faults World Conf. Earthquake Eng , 2d, Tokyo and Kyoto, Japan, July 11-18, 1960, Proc , v 1, p. 551-564 incl diagrams and tables, Tokyo, Sci. Council Japan, 1960
- 3-60. The Alaska earthquake of July 10, 1958--Introduction Seismol. Soc America Bull , v. 50, no. 2, p 217-220 incl index map and tables, Apr. 1960
- 4-60 The Alaska earthquake of July 10, 1958--Movement on the Fairweather fault and field investigation of southern epicentral region Seismol Soc. America Bull , v 50, no 2, p. 267-292 incl diagrams, tables, and illus., Apr. 1960.

## TOCHER

- 5-60 Creep on the San Andreas fault--Creep rate and related measurements at Vineyard, California Seismol Soc America Bull., v 50, no 3, p 398-404 incl. diagrams and tables, July 1960
- TODD, David Keith See also BEAR, Jacob 1-60  
1-60 Salt water intrusion of coastal aquifers in the United States Internat Assoc Sci Hydrology (Gentbrugge, Belgium) Pub 52, p 452-461 incl. sketch map and French abs., 1960
- TODD, Robert George See STEVENS, Calvin Howes 1-60
- TODD, Ruth  
1-60 Recent literature on the Foraminifera Cushman Found Foram Research Contr., v 11, pt. 1, p 42-45, Jan 1960, pt 2, p. 69-72, Apr. 1960, pt 3, p 104-107, July 1960, pt 4, p 134-138, Oct 1960.
- TOLER, Henry Niles  
1-60. Mississippi-Alabama oil and gas search at all-time peak World Oil, v 150, no 7, p 82-88 incl tectonic map, section, and tables, June 1960
- TOMKINS, R V See GOUDGE, Monson Fraser 1-60
- TOMPKINS, Joseph  
1-60 The Tompkins (multi-pay) field, Stonewall County, Texas, in Abilene Geol Soc, Geological contributions 1960, p 129-140, illus, 1960
- TORRE y CALLEJAS, Alfredo de la See also KROMMELBEIN, Karl  
1-60 Notas sobre rudistas Soc Cubana Historia Nat Mem, v 25, no 1, p 51-64, illus, Dec 10, 1960  
2-60 Fauna de la formación Cayetano del Jurásico Medio de Pinar del Río Soc Cubana Historia Nat Mem, v. 25, no 1, p 65-72, illus., Dec 10, 1960.
- TORREY, Paul Dwight  
1-60 Evaluation of U S oil resources Producers Monthly, v 24, no 9, p 12-17 incl diagrams and tables, July 1960.
- TOTH, Alfred M  
1-60. Ground-water resources of the rural municipality of Cory (No 344), Saskatchewan Canada Geol. Survey Paper 60-25, 6 p, illus., 1960.
- TOTTEN, Robert Briggs  
1-60. (and HORN, Paul Herbert) Geology of certain gas fields of the western Anadarko basin, Texas and Oklahoma Panhandles, in Natural gas in the Southwest Southwestern Federation Geol Soc Trans, v. 1, p 39-61 incl. sketch maps, cross section, correlation chart, and diagrams, 1960.
- TOULMIN, Lyman Dorgan, Jr See also LaMOREAUX, P E 2-60  
1-60. (and LaMOREAUX, Philip Elmer) Stratigraphy along Chattahoochee River [Georgia], a connecting link between Atlantic and Gulf Coastal Plains [abs.] Am. Assoc. Petroleum Geologists Bull, v 44, no 7, p. 1258-1259, July 1960
- TOULMIN, Priestley, 3d. See also BARTON, P B, Jr 2-60  
1-60. Composition of feldspars and crystallization history of the granite-syenite complex near Salem, Essex County, Massachusetts, U.S.A Internat. Geol Cong., 21st, Copenhagen, 1960, Rept, pt. 13, p. 275-286 incl geol. sketch map, diagrams, and tables, 1960.  
2-60 Effect of Cu on sphalerite phase equilibria--A preliminary report [abs.] Geol Soc America Bull., v. 71, no 12, pt. 2, p. 1993, Dec. 1960.
- TOUNG, George D See JOHNSEN, John Herbert 1-60
- TOURTELOT, Harry Allison. See also BREGER, I A 2-60, GILL, J R. 1-60, SCHULTZ, L. G. 1-60  
1-60. (and SCHULTZ, Leonard Gene, and GILL, James Rogers) Strati-

## TREFETHEN

- graphic variations in mineralogy and chemical composition of the Pierre shale in South Dakota and adjacent parts of North Dakota, Nebraska, Wyoming, and Montana Art 205 in U. S. Geol Survey Prof Paper 400-B, p B447-B452 incl. sections, diagrams, and table, 1960
- 2-60. Origin and use of the word "shale" Am Jour Sci., v 258-A (Bradley Volume), p 335-343, 1960.
- TOWNSEND, Donald H
- 1-60. Economic report on the Kemmerer Coal Field, in Overthrust belt of southwestern Wyoming and adjacent areas Wyoming Geol Assoc., 15th Ann Field Conf., 1960, Guidebook, p 251-255 incl sketch map, sections, and tables, 1960
- TOZER, Edward Timothy. See also THORSTEINSSON, Raymond 1-60, 2-60
- 1-60. Summary account of Mesozoic and Tertiary stratigraphy, Canadian Arctic Archipelago Canada Geol Survey Paper 60-5, 24 p, illus incl geol sketch maps, 1960
- 2-60 Mesozoic and Tertiary stratigraphy of the Canadian Arctic Archipelago [abs.] Oil in Canada, v 12, no 12, p. 74, Jan 18, 1960
- TOZER, Eliot
- 1-60 Nature's 'atomic clock' aids oilmen and archeologists Petroleum Today, winter 1959-60, p 23-25, illus. [1960].
- TRACE, Robert Denny
- 1-60 Significance of unusual mineral occurrence at Hicks Dome, Hardin County, Illinois Art 30 in U S Geol. Survey Prof Paper 400-B, p B63-B64 incl tables, 1960.
- TRAILL, R J See SABINA, Ann P 1-60
- TRAINER, Frank Wilson
- 1-60. Geology and ground-water resources of the Matanuska Valley agricultura area, Alaska U S Geol Survey Water-Supply Paper 1494, 116 p illus. incl geol map, 1960.
- TRASK, Frank See SWAYNE, William H 1-60
- TRAUGER, Frederick Dale
- 1-60 Availability of ground water at proposed well sites in Gila National Forest, Sierra and Catron Counties, New Mexico New Mexico State Engineer Tech. Rept 18, 20 p, illus, 1960
- TRAVERSE, Alfred See PIERCE, Richard LeRoy 1-60
- TRAVIS, Dorothy F.
- 1-60 Matrix and mineral deposition in skeletal structure of the decapod Crustacea (Phylum Arthropoda), in Sognnaes, R. F, ed, Calcification of biological systems--A symposium, Washington, D C, Dec 29, 1958 Am. Assoc Adv Sci Pub 64, p 57-116 incl. illus, 1960.
- TREASHER, Raymond Clarence
- 1-60 Broken stone, Pt. 1 of Franciscan formation as a source of construction materials [abs] California Assoc Eng Geologists, 3d Ann. Mtg, Berkeley, Oct 14-16, 1960, p 14-15 [1960].
- TRECHMANN, Charles Taylor
- 1-60 What I think of the 1958 Geological Survey Map of Jamaica Geonotes, v 3, pt 3 (Jamaica Geol. Survey Pub 63), p 111-112, Oct 1960
- 2-60 The Cretaceous and Tertiary questions again in Jamaica Geonotes, v 2, pt 4 (Jamaica Geol Survey Pub 59), p 147-152, 1959 [Jan 1960]
- TREFETHEN, Joseph Muzzy
- 1-60 (and DOW, Robert L) Some features of modern beach sediments [Maine] Jour Sed Petrology, v 30, no 4, p 589-602 incl. illus., Dec. 1960

## TREJO

TREJO H, Mario

- 1-60. La familia *Nannoconidae* y su alcance estratigráfico en América (Protozoa, Incertae sedis) Asoc Mexicana Geólogos Petroleros Bol, v 12, nos 9-10 incl diagrams, illus, Sept.-Oct. 1960

TREMAINE, Marie See ARCTIC INSTITUTE of NORTH AMERICA 1-60

TREMBLAY, Léo Paul. See CANADA GEOL SURVEY 36-60

TRENGOVE, Russell R

- 1-60 Reconnaissance of California manganese deposits U S Bur Mines Rept Inv 5579, 46 p incl. sketch maps, diagrams, and tables, 1960

TRETTIN, Hans Peter

- 1-60 Canadian explorers ponder new province in central British Columbia Oil and Gas Jour., v 58, no 33, p 142, 145-146, 148 incl index map and chart, Aug 15, 1960  
2-60. Problems of petroleum exploration in Central British Columbia [abs ] Canadian Oil and Gas Industries, v. 13, no 4, p 104, Apr 1960.  
3-60 Geology of the Fraser River valley between Lillooet and Big Bar Creek [British Columbia] [abs.] Canadian Mining Jour, v 81, no 8, p. 105, Aug 1960

TREVES, Samuel Blain

- 1-60 Inclusions in the Precambrian gneiss of the Carney Lake complex, Dickinson County, Michigan [abs ] Geol Soc America Bull, v 71, no 12, pt 2, p 1993-1994, Dec 1960  
2-60 Geology of the Carney Lake complex, Dickinson County, Michigan [abs ] Dissert. Abs, v 20, no 10, p 4080-4081, Apr 1960  
3-60 The origin of inclusions in the gneisses of the Carney Lake complex, Dickinson County, Michigan [abs.] Nebraska Acad Sci Proc, 70th Ann. Mtg, p. 17 [1960]

TREXLER, John Peter

- 1-60. Geologic mapping with aerial photographs in the anthracite region of Pennsylvania [abs ] Geol Soc America Bull, v 71, no 12, pt 2, p 2026-2027, Dec 1960

TRI-STATE GEOLOGICAL FIELD CONFERENCE

- 1-60 (by Thomas, Leo Almor) Guidebook for the 24th annual field conference, north-central Iowa, October 8-9, 1960 n. p, [26 p], illus, 1960

TRIMBLE, James K See BADGLEY, Peter Coles 1-60, 3-60, BAKER, Donald R 2-60

TROLLOPE, David Hugh. See LAMBE, Thomas William 1-60

TROTTER, John Francis

- 1-60. Coyote Creek field, Wyoming, its character and significance [abs ] Am Assoc. Petroleum Geologists Bull., v 44, no 6, p 961-962, June 1960.  
2-60. Coyote Creek field, Wyoming, its character and significance Am Assoc. Petroleum Geologists Rocky Mtn. Sec. Geol Record 1960, p 27-33 incl. diagrams and illus. [1960]

TROUTMAN, Arthur

- 1-60 Prospective oil and gas areas of the United States Houston, Tex., Oil Center Tool Co, 108 p., illus incl. geol sketch maps, 1960

TROXEL, Bennie Wyatt

- 1-60 Maps used in mineral investigations California Div Mines Mineral Inf Service, v 13, no 2, p 1-14, illus., Feb 1960

TRUE, Webster Prentiss See BRADLEY, Wilmot, Hyde 1-60, GONZÁLEZ Reyna, Jenaro 2-60, GUTENBERG, Beno 4-60, OPIK, Ernest Julius 1-60, PAGE, Thornton Leigh 1-60, SUESS, Hans Eduard 2-60

TRUEDELLE, Alfred H

- 1-60. (and WEEKS, Alice Dowse) Paragenesis of uranium ores in Todilto limestone near Grants, New Mexico Art 25 in U. S. Geol. Survey Prof. Paper 400-B, p. B52-B54 incl diagrams and illus., 1960.

TRUJILLO, Ernest F

- 1-60. Upper Cretaceous Foraminifera from near Redding, Shasta County, California Jour Paleontology, v 34, no. 2, p 290-346 incl. index and geol. sketch maps, section, diagrams, and chart, illus, Mar 1960.

TRUJILLO, Mario H

- 1-60 Análisis cualitativo de las velocidades sísmicas y de los registros eléctricos de los pozos Constitucionales No. 105 y Limón No 191 Asoc. Mexicana Geofísicos Explor. Bol, v 1, no 3, p 268-273, illus, July-Sept. 1960.

TRUMBULL, James Van Alen. See also JOHNSTON, J. E 1-60

- 1-60 (and JOHNSTON, John Edward) Continental shelf of east coast as possible future petroleum producing province [abs.] Am Assoc Petroleum Geologists Bull, v. 44, no 7, p. 1259, July 1960  
2-60. Coal fields of the United States, Sheet 1 U. S. Geol Survey, scale 1 5,000,000 (about 1 in. to 80 mi), 1960.

TRUMP, Robert P.

- 1-60. (and PATNODE, Homer Whitman) Graphic stereoscopic representation of irregular surfaces Am. Assoc. Petroleum Geologists Bull., v. 44, no 9, p 1570-1571 incl diagrams, Sept. 1960

TSCHANZ, Charles McFarland

- 1-60. Regional significance of some lacustrine limestones in Lincoln County, Nevada, recently dated as Miocene Art. 134 in U. S. Geol. Survey Prof Paper 400-B, p B293-B295 incl sketch map, 1960  
2-60. (and PAMPEYAN, Earl Haig) Geologic map of Lincoln County, Nevada [abs] Geol Soc. America Bull, v 71, no. 12, pt. 2, p 2080-2081, Dec. 1960  
3-60. Geology of northern Lincoln County, Nevada, in Geology of east central Nevada Intermountain Assoc Petroleum Geologists, 11th Ann Field Conf, 1960 Guidebook, p. 198-208 incl index and tectonic maps, section, and correlation chart, 1960.

TSCHUDY, Robert H

- 1-60 Application of palynomorphs for the recognition of facies in the Upper Cretaceous-Lower Tertiary of Colorado and Wyoming [abs] Geol. Soc America Bull., v 71, no 12, pt 2, p 1994, Dec 1960  
2-60 "Vibraflute" Micropaleontology, v 6, no. 3, p. 325-326, illus., July 1960.

TSYTOVICH, N A

- 1-60 Bases and foundations on frozen soil Natl Acad Sci --Natl Research Council Highway Research Board Spec Rept 58, 93 p, illus, translated from Russian by L. Drashevskaya, 1960

TUAN, Yi-Fu

- 1-60 Coastal land forms of central Panama Berkeley, Univ California, Dept. Geography, 30 p, illus, 1960.

TUCKER, Henry. See KURTZ, Edwin Bernard, Jr 1-60

TUDDENHAM, William Marvin See also LYON, R J P. 2-60-5-60

- 1-60. (and LYON, Ronald James Pearson) Infrared techniques in the identification and measurement of minerals Anal. Chemistry, v. 32, no 12, p 1630-1634 incl diagrams and tables, Nov 1960  
2-60. (and ZIMMERLEY, Stuart R) Infrared analysis is quick and easy Eng and Mining Jour, v 161, no 7, p 92-94 incl diagrams, table, and illus, July 1960

## TUDDENHAM

- 3-60 (and LYON, Ronald James Pearson) Infrared techniques in the identification and measurement of minerals [abs] *Spectrochim Acta*, V. 16, no. 5, p. 611, June 1960

## TULSA GEOLOGICAL SOCIETY

- 1-60. Symposium on geology and secondary recovery Tulsa Geol Soc. Digest, v. 28, p. 33-77 incl diagrams, and tables, 1960 Includes individual papers which are cited separately.

TUNELL, George See ARNTSON, R. H. 1-60, DICKSON, F. W. 2-60

TUOHY, Donald R See BRYAN, Alan L. 1-60

## TUPPER, William MacGregor

- 1-60. Sulfur isotopes and the origin of the sulfide deposits of the Bathurst-Newcastle area of northern New Brunswick *Econ. Geology*, v. 55, no. 8, p. 1676-1707 incl. geol. sketch maps, diagrams, and tables, Dec 1960.  
2-60. Sulfur isotope ratios and the origin of the sulfide deposits in the Bathurst area of northern New Brunswick [abs.] *Massachusetts Inst Technology Abs. Theses 1958-59*, p. 175-176, 1960

## TUREKIAN, Karl K

- 1-60. (and CARR, Michael H.) The geochemistries of chromium, cobalt, and nickel *Internat Geol. Cong*, 21st, Copenhagen, 1960, Rept., pt 1, p. 14-26 incl diagrams and tables, 1960.  
2-60. (and ARMSTRONG, Richard L.) Magnesium, strontium, and barium concentrations and calcite-aragonite ratios of some recent molluscan shells *Jour Marine Research*, v. 18, no. 3, p. 133-151, illus., Nov. 30, 1960.

TURKEVICH, Anthony Leonid. See ANDERS, Edward 2-60

## TURLEY, Thomasz J.

- 1-60. The minerals of the Chicago Area [Illinois] *Earth Sci*, v. 13, no. 6, p. 221-223 incl illus., Dec 1960

## TURNBULL, Willard Jay

- 1-60 (and MANSUR, Charles Isaiah) Investigation of underseepage--Mississippi River levees *Am. Soc. Civil Engineers Proc.*, v. 85, Paper 2136, *Jour Soil Mechanics and Found Div.*, no. SM 4, p. 41-93, illus., Aug. 1959, discussion by M. Suter, v. 86, Paper 2391, no. SM 1, pt 1, p. 87-88, Feb 1960, reply by authors, Paper 2636, no. SM 5, pt 1, p. 121-122 Oct. 1960

## TURNBULL, William D.

- 1-60. A lance didelphid molar, with comments on the problems of the Lance therians *Fieldiana Geology*, v. 10, no. 36, p. 525-537, illus., July 22, 1960.  
2-60 (and REED, Charles A.) *Arctoryctes* and some other Chadronian vertebrate microfossils from Nebraska *Fieldiana Geology*, v. 14, no. 3, p. 41-57 incl diagrams and illus., Dec 29, 1960.

## TURNER, Francis John See also GRIGGS, D. T. 5-60, 6-60

- 1-60. (and HEARD, Hugh, C. and GRIGGS, David Tressel) Experimental deformation of enstatite and accompanying inversion to clinoenstatite *Internat Geol. Cong*, 21st, Copenhagen, 1960, Rept., pt 18, p. 399-408 incl diagrams and illus., 1960  
2-60. (and VERHOOGEN, John) *Igneous and metamorphic petrology* 2ded., New York, N. Y., McGraw-Hill Book Co., 694 p., illus., 1960

TURNER, Helmer See OZARK MOUNTAIN GEM and MINERAL SOC 1-60

## TURNER, Mortimer D.

- 1-60. Geology and the development of the mineral industry in Puerto Rico [abs] *Caribbean Geol Conf*, 2d, Mayagüez, Puerto Rico, Jan. 4-9, 1959, *Trans.*, p. 81, 1960

TURNER, Samuel Foster

- 1-60. (and ROBINSON, Thomas William, and WHITE, Walter Noy) Geology and ground-water resources of the Winter Garden district, Texas, 1948 U S Geol Survey Water-Supply Paper 1481, 247 p, illus incl geol. map, revised by D. E. Outlaw, W. O. George, and others, 1960

TUTTEN, William David

- 1-60. Carrot Basin anticline, Gallatin County, Montana, in West Yellowstone --Earthquake area Billings Geol. Soc., 11th Ann Field Conf, Sept 1960, [Guidebook] p. 261-264 incl. sketch map and section, 1960

TUTTLE, Curtis Randall

- 1-60. (and KOTEFF, Carl, and HARTSHORN, Joseph Harold) Seismic investigations in the Connecticut River valley, southern Massachusetts [abs.] Geol. Soc. America Bull., v 71, no 12, pt 2, p 1994, Dec 1960.

TUTTLE, Orville Frank. See BURNHAM, Clifford Wayne 2-60, 3-60, CHAYES, Felix 1-60, GITTINS, John 1-60, THORNTON, Charles Perkins 1-60, WYLLIE, Peter John 1-60-4-60

TUTTLE, Sherwood Dodge

- 1-62 Evolution of the New Hampshire shore line Geol. Soc. America Bull, v 71, no. 8, p 1211-1222 incl. sketch map and tables, Aug 1960

TWETO, Ogden Linne

- 1-60. (and SIMS, Paul Kibler) Relation of the Colorado mineral belt to Precambrian structure Art 4 in U S Geol Survey Prof. Paper 400-B, p B8-B10 incl. geol map, 1960.  
2-60. Pre-ore age of faults at Leadville, Colorado Art. 5 in U. S. Geol Survey Prof. Paper 400-B, p B10-B11 incl. sections and diagrams, 1960.  
3-60. Scheelite in the Precambrian gneisses of Colorado Econ Geology, v 55, no 7, p 1406-1428 incl mineral index and geol sketch maps and tables, Nov 1960  
4-60 (and SIMS, Paul Kibler) Precambrian ancestry of the Colorado Mineral Belt [abs ] Geol. Soc. America Bull, v. 71, no 12, pt. 2, p 1995, Dec. 1960

TWISS, Page Charles

- 1-60 Geology of the Van Horn Mountains, Trans-Pecos Texas [abs ] Dissert. Abs, v 20, no 7, p. 2759, Jan 1960.

TYDINGS, J E. See GIARDINI, Armando Alfonzo 1-60

TYLER, S A See BAILEY, S W 1-60

TYNAN, Eugene J.

- 1-60. The Archaeomonadaceae of the Calvert formation (Miocene) of Maryland Micropaleontology, v 6, no. 1, p 33-39, illus., Jan 1960.

TYNI, M H. See SAVOLAHTI, A O M 1-60

UCHIO, Takayasu

- 1-60 Ecology of living benthonic Foraminifera from the San Diego, California, area Cushman Found. Forum. Research Spec Pub 5, 72 p, illus, Apr 20, 1960.

UDAGAWA, S See BRINDLEY, George William 1-60

UDANE, Bernard

- 1-60. (and GILLARY, Herman W ) New student's handbook of science--A guide to study, hobbies, and careers New York, N Y, Frederick Ungar Publishing Co, 270 p incl diagrams and tables, 1960.

UFFEN, Robert James See TANNER, J. G 1-60

## UGOLINI

UGOLINI, Fiorenzo C.

- 1-60. Soil development on the red beds of New Jersey [abs.] Dissert. Abs. v 21, no 5, p 1007, Nov 1960

UHLEY, Robert Phil. See SCHARON, Harry LeRoy 1-60

UNDERWOOD, Frank Alan See TAYLOR, Charles A. 1-60

UNDERWOOD, Lloyd Bradish

- 1-60. (and BURLING, A. H.) Tunneling in Pierre shale at Oahe Dam, Pierre, South Dakota [abs.] Geol Soc. America Bull., v. 71, no 12, pt. 2, p 2042, Dec 1960

UNITED STATES AIR FORCE CAMBRIDGE RESEARCH LABORATORIES,  
Geophysical Research Directorate

- 1-60. Annual report 1960 U S. Air Force Cambridge Research Labs., Geophys. Research Directorate Ann. Rept. 1960 (AFCRL 637), 250 p incl diagrams and illus. [1960?]

U[NITED] S[TATES] ARMY, Corps of Engineers

- 1-60. Madison River, Montana, report on flood emergency, Madison River slide--V. 2, Appendixes Omaha, Nebraska, U.S. Army Corps of Engineers, paged separately, geol. sketch maps, sections, diagrams, and illus., Sept. 1960 Includes individual papers which are cited separately.  
2-60 Madison River, Montana, report on flood emergency, Madison River slide--V 1, Main report Omaha, Nebr., U. S Army Engineer District, 28 p , maps, diagrams, and illus., Sept. 1960

UNITED STATES ATOMIC ENERGY COMMISSION

- 1-60. Nuclear science abstracts, V. 14, Nos 1-24A, Abstracts 1-26514 Oak Ridge, Tenn., U S. Atomic Energy Comm , Tech Inf Service, 3427 p , 1960, No. 24B, Annual index, 1512 p., 1960.

UNITED STATES BUREAU of RECLAMATION

- 1-60. Earth manual--A guide to the use of soils as foundations and as construction materials for hydraulic structure 1st ed , Denver, Colo., 751 p incl diagrams, tables, and illus., charts, July 1960  
2-60. Natural resources of northwestern California--Plans of water development, report appendix U.S.Dept.Interior, Pacific Southwest Field Comm , 281 p. incl tables, also geol and sketch maps, sections, and illus , 1960.  
3-60 Foundations and construction materials, Chap 4 of Design of small dams, by author Washington, D C., p 71-155, illus. incl. geol. map, 1960.

[UNITED STATES DEPARTMENT of the INTERIOR]

- 1-60 Water resources of Alaska U S. Cong , 86th, 2d sess., Select Comm. Natl. Water Resources, Senate Resolution 48, Comm. Print 19, 21 p incl. sketch map, diagram, and tables, 1960.  
2-60. Water resources of Hawaii U. S. Cong., 86th, 2d sess , Select Comm. Natl Water Resources, Senate Resolution 48, Comm. Print 20, 12 p incl sketch maps, diagrams, and tables, 1960.

UNITED STATES GEOLOGICAL SURVEY

- 1-60. The Geological Survey at Denver Denver, Colo., U S Geol. Survey, 41 p , illus , Oct. 1960.  
2-60. Mineral and water resources of Wyoming U S. Cong , 86th, 2d sess , Senate Doc 76, 40 p , illus , 1960.

UNITED STATES GEOLOGICAL SURVEY, Water Resources Division

- 1-60. National water resources and problems U S. Cong , 86th, 2d sess., Select Comm Natl. Water Resources, Senate Resolution 48, Comm Print 3, 42 p incl. sketch maps, diagrams and tables, 1960

[UNITED STATES] LIBRARY of CONGRESS, Snow Ice and Permafrost Research Establishment Bibliography Project

- 1-60. Bibliography on snow, ice and permafrost, with abstracts U. S. Army Corps of Engineers, Snow Ice and Permafrost Research Establishment Rept 12, v 14, 249 p., Jan. 1960



UOTILA, Urho Antti Kalevi

- 1-60. Investigations on the gravity field and shape of the earth [abs.] Dissert. Abs., v. 20, no. 9, p. 3694, Mar. 1960

UPSHAW, Charles Francis

- 1-60. Palynology of the Frontier formation, northwestern Wind River basin, Wyoming [abs.] Dissert. Abs., v. 20, no. 8, p. 3262, Feb. 1960

UPSON, Joseph Edwin, 2d. See also KUNKEL, Fred 1-60

- 1-60. (and SPENCER, Charles W.) Glacial geology of buried bedrock valleys of the New England coast [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1995, Dec. 1960

UPTON, B. G. J.

- 1-60. The alkaline igneous complex of Kûngnât Fjeld, south Greenland. Medd. om Grønland, bind 123, nr. 4, 145 p., illus., incl. geol. map, 1960, reprinted as Grønlands Geol. Undersøgelse Bull. 27, 1960, Copenhagen Univ. Mus. Minéralogie et Géologie Commun. Géol. 99, 1960

UREY, Harold Clayton. See also MASON, B. H. 2-60

- 1-60. The duration of the intense bombardment of the moon [abs.] Jour. Geophys. Research, v. 65, no. 8, p. 2529, Aug. 1960

UTAH GEOLOGICAL SOCIETY

- 1-60. (Schaeffer, Frederick E., Jr., editor) Geology of the Silver Island Mountains, Box Elder and Tooele Counties, Utah, and Elko County, Nevada. Utah Geol. Soc. Guidebook to the Geology of Utah, no. 15, 185 p., incl. sketch maps, sections, diagrams, and illus., also geol. maps and sections, 1960. Includes papers by F. E. Schaeffer and W. L. Anderson, which are cited separately

UTGAARD, John

- 1-60. (and PERRY, Thomas Gregory) Fenestrate bryozoans from the Glen Dean limestone (middle Chester) of southern Indiana [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 2027, Dec. 1960  
2-60. (and PERRY, Thomas Gregory) Fenestrate bryozoans from the Glen Dean Limestone (middle Chester) of southern Indiana. Indiana Geol. Survey Bull. 19, 32 p., incl. index map and diagrams, illus., Dec. 1960

VALENTIN, Hartmut

- 1-60. Die zweite Küstengeographie-Konferenz in Louisiana 1959--Vorgeschichte, Verlauf und verbleibende Probleme. Zeitschr. Geomorphologie (Berlin), Neue Folge, Band 4, Heft 3-4, p. 275-281, Dec. 1960

VALENTINE, Grant Miller

- 1-60. Inventory of Washington minerals--Pt. 1, Nonmetallic minerals. Washington State Div. Mines and Geology Bull. 37, v. 1, text, 175 p., illus., v. 2, maps, 83 p., revised by M. T. Huntington, 1960, originally published 1949.

VALENTINE, James William. See also JOHNSON, R. G. 1-60

- 1-60. (and MEADE, Robert Francis) Isotopic and zoogeographic paleotemperatures of Californian Pleistocene Mollusca. Science, v. 132, no. 3430, p. 810-811, incl. table, Sept. 23, 1960.  
2-60. Habitats and sources of Pleistocene Mollusks at Torrey Pines Park, California. Ecology, v. 41, no. 1, p. 161-165, illus., Jan. 1960.  
3-60. Pleistocene molluscan notes--[Pt.] 3, Rocky coast faunule, Bahía San Quintín, Mexico. Nautilus, v. 74, no. 1, p. 18-23, incl. table, July 1960.

VALIENTE MADRID, Noemi

- 1-60. Análisis químicos de aguas termales [El Salvador]. Energía Geotérmica. Informe, no. 1, p. 110-123, incl. diagrams and tables [1960].

VALLENTYNE, John R.

- 1-60. On fish remains in lacustrine sediments. Am. Jour. Sci., v. 258-A (Bradley Volume), p. 344-349, incl. tables, 1960.

# VALLENTYNE

2-60 Pyrolysis of amino acids in aqueous solution [abs.] Geol Soc. America Bull , v. 71, no 12, pt. 2, p. 1996, Dec 1960.

VALLETTA, Robert Michael

1-60 Structures and phase equilibria of binary rare earth metal systems [abs.] Dissert Abs , v 20, no. 9, p. 3539, Mar 1960.

VAN, Joseph N

1-60. Rasberry field, Foard County, Texas, in Abilene Geol Soc., Geological contributions 1960, p 97-103, illus., 1960.

Van ALSTINE, Ralph Erskine

1-60. Results of 1960 nationwide geology examination offered by United States Civil Service Commission Am Assoc Petroleum Geologists Bull , v 44, no 9, p 1579-1580 incl diagrams, Sept. 1960

2-60. (and LEWIS, George Edward) Pliocene sediments near Salida, Chaffee County, Colorado Art 111 in U. S Geol Survey Prof Paper 400-B, p B245, 1960

Van ANDEL, Tjeerd Hendrik See also SHEPARD, F P 3-60

1-60. (and POOLE, David M.) Sources of recent sediments in the northern Gulf of Mexico Jour Sed Petrology, v 30, no 1, p 91-122 incl. sketch maps, diagrams, and tables, Mar. 1960.

2-60 Sources and dispersion of Holocene sediments, northern Gulf of Mexico, in Shepard, F P , and others, ed., Recent sediments, northwest Gulf of Mexico Tulsa, Okla , Am. Assoc Petroleum Geologists, p 34-55, illus , 1960.

3-60 (and CURRAY, Joseph Ross) Regional aspects of modern sedimentation in northern Gulf of Mexico and similar basins, and paleogeographic significance, in Shepard, F. P., and others, ed , Recent sediments, northwest Gulf of Mexico Tulsa, Okla., Am Assoc Petroleum Geologists, p 345-364, illus , 1960

VANCE, Joseph Alan

1-60. Origin of zoning in some igneous plagioclases [abs ] Geol Soc America Bull , v 71, no. 12, pt 2, p. 2081, Dec 1960

VANCE, Maurice M

1-60. Charles Richard Van Hise [1857-1918]--Scientist progressive Madison, State Hist Soc. Wisconsin, 246 p , illus , 1960

VanCOTT, Harrison C See RIBBE, Paul H 2-60

van der KNAPP, W

1-60 Nonlinear behavior of elastic porous media Am Inst Mining, Metall., and Petroleum Engineers Trans. 1959, v 216, p 179-187 incl diagrams with discussion by G H. F Gardner and reply by author, 1960.

VANDERPOOL, Robert E.

1-60. Geology of the Featherston area, Pittsburg County, Oklahoma Oklahoma Geol Survey Circ. 53, 36 p , illus, incl geol map, 1960

Van ECK, Orville See HERSHEY, Howard Garland 1-60

Van HOOK, H J.

1-60. The ternary system  $Ag_2S-Bi_2S_3-PbS$  Econ. Geology, v. 55, no 4, p 759-788 incl. diagrams, tables, and illus , June-July 1960.

2-60 Phase relations in the system  $Fe_2O_3-Fe_3O_4-YFeO_3$  in air [abs ] Am Ceramic Soc. Bull , v. 39, no 4, p. 183, Apr 1960

Van HOUTEN, Franklyn Bosworth

1-60 Composition of upper Triassic Lockatong argillite, west-central New Jersey Jour. Geology, v 68, no 6, p 666-669 incl geol sketch map, diagrams, and table, Nov. 1960

VANLIER, K Eugene See DEUTSCH, Morris 1-60

VAN OLPEN, Hendrik

- 1-60 Ion adsorption on clays--A review [abs.], in Swineford, Ada, ed., *Clays and clay minerals*, V. 8 Natl Conf Clays and Clay Minerals, 8th, Norman, Okla., Oct. 1959, Proc., p.115, 1960 (Issued as *Internat Earth Science Ser. Mon 9* of Pergamon Press, New York.)

VANONI, Vito August

- 1-60 (and NOMICOS, George N.) Resistance properties of sediment-laden streams *Am Soc Civil Engineers Trans* 1960, v.125, pt 1, p 1140-1175, illus., with discussion by E M Laursen, T -L Chou, D. B Simons, and E V Richardson, and reply by authors, slightly revised 1960, originally published 1959
- 2-60 (and NOMICOS, George N.) Resistance properties of sediment-laden streams *Am Soc Civil Engineers Proc*, v. 85, paper 2020, *Jour Hydraulics Div*, no HY 5, p. 77-107, illus., May 1959, discussion by E M. Laursen, paper 2269, no. HY 11, p 145-146, Nov 1959, by T -L. Chou, E V. Richardson, and D B. Simons, paper 2271, no HY 12, pt 1, p 107-112, illus., Dec 1959, reply by authors, v. 86, paper 2489, no HY 5, p 113-115, May 1960

Van PELT, J R See NEILSON, J M 1-60

Van TUYL, Francis Maurice

- 1-60. (and BRAINERD, Arthur Edward) Historical summary, Chap 12 in *Mineral resources of Colorado*, 1st sequel Denver, Colorado Mineral Resources Board, p 489-505 incl index map and diagrams, 1960.

Van VALEN, Leigh

- 1-60. Nonadaptive aspects of evolution *Am Naturalist*, v 94, no. 877, p 305-308, July-Aug 1960
- 2-60. Therapsids as mammals *Evolution*, v 14, no. 3, p 304-313, p. 388-392, Sept 1960.

Van VLACK, Lawrence Hall See also WELLS, R. G. 1-60

- 1-60. Microstructure of silica in the presence of iron oxide *Am Ceramic Soc. Jour*, v. 43, no 3, p 140-145 incl. diagrams, tables, and illus., Mar 1, 1960

VARNEDOE, W W.

- 1-60. (and LUNDQUIST, C. A.) Systematics of Newsom Sink caves, Alabama [abs.] *Natl Speleol Soc. NSS News*, v. 18, no 7, p. 76, July 1960.

VARNES, David Joseph See CRANDELL, D. R. 1-60

VAUGHN, Peter Paul

- 1-60. On the possibly polyphyletic origin of reptiles *Evolution*, v 14, no. 2, p 274-276, June 1960.

VAUGHN, William Wendall

- 1-60. (and WILSON, Ernest Elmer, and OHM, J M.) A field instrument for quantitative determination of beryllium by activation analysis *U S. Survey Circ* 427, 9 p. incl. diagrams and illus., 1960
- 2-60 (and BARNETT, Ray Hosmer, and WILSON, Ernest Elmer) Drill core scanner proved in field *Am Inst Mining, Metall., and Petroleum Engineers Trans*, 1959, v 214, p. 617-620 incl. diagrams and illus., 1960

VÁZQUEZ, Leovigildo

- 1-60. Geology and ore deposits of the Keystone iron mine near Juncos, Puerto Rico *Caribbean Geol. Conf.*, 2d, Mayagüez, Puerto Rico, Jan. 4-9, 1959, *Trans.*, p 143-146, 1960

VEATCH, Arthur Clifford, 1878-1938

- 1-60 Early oil exploration in Uinta County [Wyoming], in *Overthrust belt of southwestern Wyoming and adjacent areas* *Wyoming Geol Assoc.*, 15th Ann. Field Conf., 1960, Guidebook, p. 189-193, abbreviated from 1907 paper, 1960.

## VEDDER

VEDDER, John Graham

1-60. Previously unreported Pliocene mollusca from the southeastern Los Angeles basin Art 151 in U. S. Geol. Survey Prof. Paper 400-B, p. B326-B328 incl. tables, 1960

VEHRS, R. A. See LONG, R. A. 1-60

VELTEN, Richard J. See SODD, Vincent J. 1-60

VENKATACHALA, B. S. See BHARADWAJ, Dinesh 2-60

VENING MEINESZ, Felix Andries

1-60. The difference of the tectonic development of the east and west side of the Pacific Koninkl. Nederlandse Akad. Wetensch. Proc. (Amsterdam), ser. B, v. 63, no. 1, p. 26-31, 1960

VERA-MEGE, R. See MUELLER, George 1-60

VERHOOGEN, John. See also TURNER, F. J. 2-60

1-60. Temperatures within the earth. Am. Scientist, v. 48, no. 2, p. 134-159 incl. diagrams and table, June 1960.

2-60. The heat balance of the earth's core [abs.] Jour. Geophys. Research, v. 65, no. 8, p. 2530, Aug. 1960

VERMA, Raj Kumar

1-60. Elasticity of some high-density crystals Jour. Geophys. Research, v. 65, no. 2, p. 757-766 incl. diagrams, tables, and illus., Feb. 1960, correction with title, Elastic constants of rutile, by A. F. Birch, no. 11, p. 3855-3856 incl. tables, Nov. 1960.

VERNON, Robert Orion See also PURI, H. S. 1-60

1-60. The geological distribution of highway base course material and aggregate in Florida, in Tanner, W. F., ed., Symposium on highway engineering geology, 11th Ann., Feb. 1960, Proc., p. 1-8, Sept. 1960

VERODA, Victor Joye

1-60. Mississippian production in southwest Kansas [abs.] Am. Assoc. Petroleum Geologists Bull., v. 44, no. 1, p. 130, Jan. 1960

VERSEY, Howard Raymond See also ROBINSON, Edward 1-60

1-60. The hydrologic character of the White Limestone Formation of Jamaica Caribbean Geol. Conf., 2d, Mayagüez, Puerto Rico, Jan. 4-9, 1959, Trans., p. 59-68 incl. sketch maps, diagrams, and tables, with discussion, 1960, reprinted as Jamaica Geol. Survey Pub. 67, 1960.

2-60. Limestone country [Jamaica] Geonotes, v. 1, pts. 1-2, (Jamaica Geol. Survey Pub. 36) p. 12-14, Apr. 1958, discussion by M. M. Sweeting, Geonotes, v. 3, pt. 1 (Jamaica Geol. Survey Pub. 60), p. 41-43, Apr. 1960.

3-60. Discussion on the origin of bauxite associated with limestone Geonotes, v. 3, pt. 1 (Jamaica Geol. Survey Pub. 60), p. 29-30, Apr. 1960

4-60. Recent work on the Milk River Mineral Spring [Jamaica] Geonotes, v. 2, pt. 4 (Jamaica Geol. Survey Pub. 59), p. 123-128, illus., 1959 [Jan. 1960].

VERTREES, Charles David

1-60. (and ATCHISON, Carl Hayden, and EVANS, Glen Louis) Paleozoic geology of the Delaware and Val Verde basins [Texas], in Geology of the Chittim Arch and the area north to the Pecos River Corpus Christi Geol. Soc., 10th Ann. Field Trip, Apr. 1960, [Guidebook] p. 32-41, illus., reprinted 1960, originally published 1959.

VERVILLE, George Julius

1-60. (and MOMPER, James Arthur) Pennsylvanian fusulinids and preliminary series correlation in southwestern Wyoming, in Overthrust belt of southwestern Wyoming and adjacent areas Wyoming Geol. Assoc., 15th Ann. Field Conf., 1960, Guidebook, p. 127-128, correlation chart, 1960.

VETTER, Carl Peter See SMITH, William Ogden 1-60

VIDZIUNAS, Irene See KRINOV, E. L. 1-60, SHARP, Robert Philip 2-60

VIELE, George Washington

1-60 The geology of the Flat Creek area, Lewis and Clark County, Montana [abs.] Dissert. Abs., v 21, no. 4, p 853, Oct 1960.

VILKS, Irita. See WOLFE, Caleb Wroe 2-60

VILLARRUZ, Primo A See ROSSUM, John R. 1-60

VINCENT, Ewart Albert

1-60. Analysis by gravimetric and volumetric methods, flame photometry, colorimetry and related techniques, Chap 3 in Smales, A A., and Wager, L R., ed., Methods in geochemistry New York, N. Y., Intersci Publishers, p 33-80, illus., 1960

2-60. Ulvospinel in the Skaergaard intrusion, Greenland Neues Jahrb Mineralogie Abh. (Stuttgart, Germany), Band 94, Festband Ramdohr, 2. Hälfte, p. 993-1016 incl diagrams, tables, and German abs., also illus., July 1960.

VINCENZ, S. A.

1-60 Geophysical exploration in Jamaica--A historical review Geonotes, v 3, pt 1 (Jamaica Geol. Survey Pub 60), p. 9-17, discussion by C H. Savit and reply by author, Geonotes, v 3, pt. 2, (Jamaica Geol. Survey Pub. 62) p. 76-77, July 1960

2-60. Milk River Mineral Spring [Jamaica] Geonotes, v 3, pt 1 (Jamaica Geol. Survey Pub 60), p 44-45, Apr 1960.

VINE, James David. See also GOWER, H. D 1-60

1-60. Recent domal structures in southeastern New Mexico Am. Assoc. Petroleum Geologists Bull., v 44, no. 12, p. 1903-1911 incl geol. map, index map, diagrams, and illus., Dec. 1960

VIRGINIA DIVISION OF WATER RESOURCES

1-60. Chemical character of surface waters of Virginia, August 1958-February 1960 Virginia Div Mineral Resources Bull. 23, 59 p., 1960.

VISHER, Frank Newell. See also HACKETT, O M 1-60

1-60. Summary of preliminary findings in ground-water studies of southern Oahu, Hawaii U S Geol Survey Circ. 435, 16 p, illus., 1960

2-60. Qualitative hydrodynamics within an oceanic island Internat Assoc. Sci. Hydrology (Gentbrugge, Belgium) Pub. 52, p. 470-477 incl. sketch map, diagrams, and French abs., 1960.

VISHER, Glenn S

1-60. The geology of the Moxie Pluton, west-central Maine [abs.] Dissert. Abs., v 21, no. 5, p. 1164-1165, Nov 1960.

VISTELIUS, Andrew B

1-60. The skew frequency distributions and the fundamental law of the geochemical processes Jour Geology, v. 68, no 1, p. 1-22 incl diagrams and tables, Jan. 1960.

VITALIANO, Dorothy Brauneck. See also CLARKE, J W 1-60

1-60. Geologists versus the foreign literature [abs.] Geol Soc America Bull., v. 71, no. 12, pt. 2, p 1996, Dec. 1960

VITE P., Luis G. See PESZUERA VELÁZQUEZ, Rubén 1-60

VIVÓ ESCOTO, Jorge A.

1-60. La obra geográfica y geológica de Ramiro Robles Ramos [1900-1960] Soc. Mexicana Historia Nat. Rev., tomo 21, no. 2, p 525-540, portrait, dec 1960.

## VLISIDIS

- VLISIDIS, Angelina Calomeris See HUTTON, Colin Osborne 1-60, LEONARD, Benjamin Franklin, 3d 1-60
- VOEGELI, Paul Thomas, Sr.  
1-60. (and HERSHEY, Lloyd Ashton) Records and logs of selected wells and test holes, and chemical and radiometric analyses of ground water, Prowers County, Colorado Colorado Water Conserv Board Ground-Water Ser Basic Data Rept. 1, 52 p, illus, 1960
- VOGEL, John David  
1-60. Geology and ore deposits of the Klondike Ridge area, Colorado [abs] Dissert. Abs, v 21, no. 1, p. 172, July 1960.
- VOLBORTH, Alex H See also FISHER, D J. 1-60  
1-60 Removal of molybdenum in analysis of uranyl and other phosphates Anal. Chemistry, v 32, no. 7, p 882-883 incl. table, June 1960  
2-60. Rapakiveä Nevadan erämaassa Geologi, v 12, no 7, p 81-82, Ota-nemi, Finland, Apr. 10, 1960
- VONDRA, Carl F.  
1-60. Stratigraphy of the Chadron formation in northwestern Nebraska Com- pass, v. 37, no 2, p. 73-90 incl. geol. sketch maps and chart, Jan. 1960.
- von HUENE, Roland E.  
1-60. Geologic and gravimetric study of Basin and Range deformation in Indian Wells Valley, southeastern California [abs.] Geol. Soc. America Bull., v 71, no. 12, pt. 2, p. 1996, Dec. 1960.
- VORESS, Hugh E.  
1-60. (compiler) Peaceful uses of nuclear explosions--A literature search U. S. Atomic Energy Comm Rept. TID-3522 (4th revision), 11 p., Nov. 1960
- VORTMAN, Luke J.  
1-60. (and others) Project Buckboard--Interim report, Nevada test site, July-September 1960 Sandia Corp., Albuquerque, New Mexico, Rept. SC-4486, 77 p., illus., Nov 1960.
- WAAGÉ, Karl Mensch  
1-60. Faunal distribution in the Cretaceous Fox Hills formation [abs] Geol Soc. America Bull., v 71, no. 12, pt. 2, p 1997, Dec. 1960.  
2-60. (and EICHER, Don Lauren) Dakota group in northern Front Range area, in Rocky Mtn. Assoc Geologists, Guide to the geology of Colorado Denver, p. 230-237 incl. sketch map, section, and diagrams, 1960.
- WADDELL, Dwight E. See FREDERICKSON, Edward Arthur 2-60
- WADDINGTON, George Wilfred  
1-60. (compiler) Iron ore deposits of the Province of Quebec Quebec Dept. Mines Mineral Deposits Br. Prelim. Rept. 409, 89 p. incl. illus, 1960, also French ed.
- WADE, Franklin Alton  
1-60 (and MATTOX, Richard Benjamin) Elements of crystallography and mineralogy New York, N. Y., Harper and Brothers, 332 p., illus., 1960.
- WADE, Henry H.  
1-60. (and ALM, Mildred R.) Mining directory issue, Minnesota, 1960. Minnesota Univ. Bull., v. 63, no. 9, 283 p, illus, May 1, 1960.
- WADSWORTH, Albert Hodges, Jr.  
1-60. How lower Frio changes in depth [Texas] World Oil, v. 151, no. 6, p. 123-124, 126 incl. section, Nov. 1960.
- WADSWORTH, Milton Elliot. See HOLT, J. Birch 1-60

WAESCHE, Hugh Henry

- 1-60. Quartz crystal and optical calcite, in Am Inst. Mining, Metall., and Petroleum Engineers, Industrial minerals and rocks, p. 687-698 incl. diagram and table, 1960

WAGER, Lawrence Rickard See also SMALES, A. A 1-60

- 1-60 (and BROWN, George Malcolm) Collection and preparation of material for analysis, Chap 2 in Smales, A. A., and Wager, L. R., ed, Methods in geochemistry New York, N. Y., Intersci Publishers, p. 4-32, illus., 1960.
- 2-60 The major element variation of the layered series of the Skaergaard intrusion [Greenland] and a re-estimation of the average composition of the hidden layered series and of the successive residual magmas Jour. Petrology (Oxford, England), v 1, no. 3, p 364-398 incl. diagrams, tables, and illus., Oct 1960.

WAGNER, James K.

- 1-60. Stratigraphic studies of the Gilmore City formation at Rutland, Iowa Iowa Acad. Sci. Proc. 1960, v. 67, p. 249-252 incl. diagram, Dec. 27, 1960.

WAGNER, Walter R. See LYTLE, William Stuckley 2-60

WAHL, Kenneth D. See HODSON, Warren Gayler 1-60

WAHL, William George

- 1-60. An interpretive technique for delimiting mineral potential areas based on the magnetic susceptibility of source rocks Internat. Geol. Cong., 21st, Copenhagen, 1960, Rept., pt. 2, p. 200-215 incl. geol. and aeromagnetic maps and tables, 1960

WAHLSTROM, Ernest Eugene

- 1-60 Optical crystallography--With particular reference to the use and theory of the polarizing microscope 3d ed., New York, N. Y., John Wiley and Sons, 356 p, illus., 1960, originally published 1943

WAHRHAFTIG, Clyde Adolph See HOPKINS, David M. 3-60

WAINES, Russell H. See also LANGENHEIM, R. L., Jr 2-60, 5-60

- 1-60 Stromatoporoids of the Kennett limestone, Shasta County, California [abs.] Geol Soc. America Bull., v 71, no 12, pt. 2, p 2081, Dec 1960.

WAIT, James Richard

- 1-60. On the calculation of AFMAG anomalies Geophysics, v 25, no. 6, p. 1290-1293 incl. diagram, Dec. 1960
- 2-60. On the electromagnetic response of a conducting sphere to a dipole field Geophysics, v. 25, no 3, p 649-658 incl. diagram, June 1960

WAIT, Robert L. See also CALLAHAN, J. T 1-60

- 1-60 Summary of the ground-water resources of Calhoun County, Georgia Georgia Mineral Newsletter, v 13, no. 1, p. 26-31, illus incl. map, Spring 1960.
- 2-60 Summary of the geology and ground-water resources of Clay County, Georgia Georgia Mineral Newsletter, v. 13, no. 2, p. 93-101, illus. incl. geol. map, summer 1960
- 3-60 Source and quality of ground water in southwestern Georgia [abs.] Georgia Acad Sci Bull., v 18, nos 1-2, p 11, Apr 1960
- 4-60 Summary of the ground-water resources of Terrell County, Georgia Georgia Mineral Newsletter, v. 13, no 3, p. 117-122, illus. incl. geol. sketch map, fall 1960
- 5-60. Source and quality of ground water in southwestern Georgia Georgia Geol. Survey Inf. Circ. 18, 74 p, illus., 1960

WAKEFIELD, John W.

- 1-60. Water resources and conservation in Florida Am Water Works Assoc Jour., v 52, no 8, p 970-978 incl. sketch maps and table, Aug. 1960

## WALKER

WALKER, A. O. See BARKER, Franklin Brett 1-60

WALKER, D. D.

1-60. Tungsten resources of Montana--Deposits of the Philipsburg batholith, Granite and Deer Lodge Counties U. S. Bur. Mines Rept. Inv. 5612, 55 p. incl. geol. and other sketch maps, 1960

WALKER, Edward Corbell. See CUTTITTA, Frank 6-60

WALKER, Fred C.

1-60. The use of residual soils in earth and rockfill dams Cong. Panam. Mecánica Suelos y Cimentaciones, 1st, México, D. F., Sept. 7-12, 1959, Mem., v. 2, p. 589-602 incl. diagrams, table, Spanish abs. and conclusions, and discussion by Lincoln Araugo Queiroz and Hugo Perez la Salvia, 1960

WALKER, George Walton

1-60. Age and correlation of some unnamed volcanic rocks in south-central Oregon Art. 138 in U. S. Geol. Survey Prof. Paper 400-B, p. B298-B300 incl. index map, 1960.

WALKER, Kenneth R.

1-60. A study of the dispersal of a calcareous deposit Southeastern Geology, v. 1, no. 4, p. 139-145, illus., 1959 [Apr. 1960].

WALKER, Philip Caleb

1-60. (and HARTMAN, Richard Thomas) The forest sequence of the Hartstown Bog Area in western Pennsylvania Ecology, v. 41, no. 3, p. 461-474, July 1960

WALKER, Terry

1-60. Simplified log interpretation--Parts 1-3 Petroleum Engineer for Management, v. 32, no. 5, p. B-90, B-95, B-99-B-100 incl. diagrams, May 1960, no. 6, p. B-66, B-69, B-75, B-78, B-82, B-88 incl. diagrams, June 1960, no. 9, p. B-70, B-74, B-78-B-79 incl. diagrams, Aug. 1960

WALKER, Theodore Roscoe

1-60. Carbonate replacement of detrital crystalline silicate minerals as a source of authigenic silica in sedimentary rocks Geol. Soc. America Bull., v. 71, no. 2, p. 145-151 incl. diagrams, illus., Feb. 1960

WALL, John Hallett

1-60. Jurassic microfaunas from Saskatchewan Saskatchewan Dept. Mineral Resources Rept. 53, 229 p. incl. index maps, section, charts, and illus., 1960

2-60. Upper Cretaceous Foraminifera from the Smoky River area, Alberta Research Council Alberta Bull. 6, 43 p. incl. index map, diagram, table, and illus., 1960.

WALLACE, Gerald W.

1-60. (and MELLON, Melvin Guy) The spectrophotometric determination of vanadium as molybdovanadic acid Anal. Chim. Acta (Amsterdam), v. 23, no. 4, p. 355-362 incl. diagrams and tables, Oct. 1960.

WALLACE, Robert Earl See also TATLOCK, D. B. 1-60

1-60. (and GRIGGS, Allan Bingham, and CAMPBELL, Arthur Byron, and HOBBS, Samuel Warren) Tectonic setting of the Coeur d'Alene district, Idaho Art. 13 in U. S. Geol. Survey Prof. Paper 400-B, p. B25-B27 incl. sketch maps, 1960.

2-60. (and TATLOCK, Donald B., and SILBERLING, Norman John) Intrusive rocks of Permian and Triassic age in the Humboldt Range, Nevada Art. 133 in U. S. Geol. Survey Prof. Paper 400-B, p. B291-B293 incl. geol. map, 1960.

3-60. (and SILBERLING, Norman John, and TATLOCK, Donald B.) Structural features of the Humboldt Range, Nevada [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 2082, Dec. 1960.



WALLACE, Stewart Raynor

- 1-60 (and others) Geology of the Climax molybdenite deposit--a progress report, in Rocky Mtn Assoc Geologists, Guide to the geology of Colorado Denver, p. 238-252 incl. geol. sketch maps, 1960

WALLER, Roger M.

- 1-60. Ground-water conditions in the vicinity of Project Chariot, Ogotoruk Creek, northwestern Alaska U. S. Geol. Survey Rept TEI-753, p 72-78 incl. sketch map, Jan. 1960

WALLISER, Otto H. See BOUCOT, Arthur James 4-60

WALLS, Richard

- 1-60. Petrological examination of samples from the Cambrian "Olive Shales" (east side of Plummet spur, Roche Miette) [Alberta] Geol. Soc. London Quart. Jour., v 116, pt. 4, p 431-432, Dec. 31, 1960

WALPER, Jack Louis. See also HARRIS, J. F. 1-60

- 1-60. Geology of Cobán-Purulhá area, Alta Verapaz, Guatemala Am Assoc. Petroleum Geologists Bull, v 44, no 8, p 1273-1315 incl. geol map, index and sketch maps, chart, sections, and illus., Aug. 1960.
- 2-60. Helicopter geology is faster, cheaper, when the going is tough [North-west Territories-Yukon] Oil and Gas Jour, v 58, no 33, p 150-152 incl. sketch maps, tables, and illus, Aug 15, 1960.

WALTER, L. S.

- 1-60. P-T stability curves of reactions in the system  $\text{CaO-MgO-SiO}_2\text{-CO}_2$  and geological applications [abs] Geol. Soc. America Bull, v. 71, no 12, pt 2, p 1997-1998, Dec. 1960

WALTERS, Joe P.

- 1-60. The marble industry of East Tennessee Tennessee Acad. Sci Jour., v 35, no 1, p 54-62 incl sketch map and illus, Jan. 1960

WALTERS, Kenneth Lyle

- 1-60 Availability of ground water at the border stations at Laurier and Ferry, Washington U S Geol Survey Circ 422, 8 p, illus., 1960.
- 2-60. (and GROlier, Maurice Jean) Geology and ground water resources of the Columbia Basin Project area, Washington, V 1 Washington State Div. Water Resources Water Supply Bull 8, 542 p, illus., 1960.

WALTON, Matt Savage, Jr

- 1-60 Granite problems Science, v 131, no 3401, p. 635-645 incl. sketch map, diagrams, table, and illus, Mar. 4, 1960, discussion with title, Differentiation of basaltic rock, by B Baldwin, with reply by author, v 132, no 3418, p 48, July 1, 1960
- 2-60. Molecular diffusion rates in supercritical water vapor estimated from viscosity data Am Jour. Sci, v. 258, no 6, p 385-401 incl diagrams and table, June 1960.

WALTON, William Clarence

- 1-60. Leaky artesian aquifer conditions in Illinois [abs] Geol Soc America Bull, v. 71, no 12, pt 2, p 1998, Dec. 1960
- 2-60 (and STEWART, Joseph William) Aquifer tests in the Snake River basalt [Idaho] Am Soc. Civil Engineers Proc, v 85, paper 2156, Jour Irrigation and Drainage Div., no IR 3, pt 1, p 49-69, illus., Sept 1959, discussion by M Maasland, paper 2327, no IR 4, pt. 1, p 101, Dec 1959, reply by W C Walton, v. 86, paper 2536, no IR 2, pt 1, p 81, June 1960.
- 3-60. Leaky artesian aquifer conditions in Illinois Illinois State Water Survey Rept Inv. 39, 27 p, illus, 1960.
- 4-60. (and NEILL, J. C.) Analyzing ground-water problems with mathematical models and a digital computer Internat. Assoc Sci. Hydrology (Gentbrugge, Belgium) Pub 52, p 336-346 incl sketch map, section, diagrams, and table, 1960.
- 5-60. (and SCUDDER, George D) Ground-water resources of the valley-train deposits in the Fairborn area, Ohio Ohio Div Water Tech. Rept 3, 57 p, illus, 1960

## WALTON

WALTON, William Ralph

1-60. Diagnostic faunal characteristics on and near a barrier island, Horn Island, Mississippi [abs.] Am. Assoc Petroleum Geologists Bull., v 44, no. 9, p. 1604, Sept. 1960.

2-60. Diagnostic faunal characteristics on and near a barrier island, Horn Island, Mississippi Gulf Coast Assoc Geol Socs Trans, v. 10, p. 7-27 incl index and sketch maps and diagrams, 1960.

WAMPLER, J. M.

1-60 (and KULP, John Laurence) Isotopic composition and concentration of lead in some carbonate rocks [abs.] Geol Soc America Bull., v 71, no 12, pt. 2, p 1998, Dec. 1960

WAMPLER, Joseph. See also HEALD, Weldon F. 1-60

WANKE, H. See SCHAEFFER, Oliver Adam 2-60

WANLESS, Harold Rollin. See KOSANKE, Robert Max 1-60

WANLESS, R. K

1-60. (and BOYLE, R. W., and LOWDON, J. A.) Sulfur isotope investigation of the gold-quartz deposits of the Yellowknife district [Northwest Territories] Econ. Geology, v. 55, no 8, p. 1591-1621 incl geol sketch map, diagrams and tables, Dec 1960

WANTLAND, Dart See McDONALD, Harris Robert 1-60

WARD, Dederick C. See RIGGS, Calvin Harold 1-60

WARD, Dwight Edward

1-60. Geology of the southern end of the Medicine Bow Mountains, Colorado [abs.] Dissert. Abs., v 20, no 10, p 4081, Apr. 1960

WARD, Frederick Norville

1-60 (and NAKAGAWA, Harry M., and HUNT, Charles Butler) Geochemical investigation of molybdenum at Nevares Spring in Death Valley, Calif. Art. 207 in U S Geol Survey Prof. Paper 400-B, p. B454-B456 incl section and table, 1960.

WARD, Porter Elwood

1-60 Relation of mineral springs to Permian salt [abs.] Geol Soc America Bull., v. 71, no 12, pt. 2, p 1999, Dec. 1960

WARD, Richard F. See PARSONS, W. H. 2-60

WARD, Stanley Harry

1-60 Application of mining geophysics in western ore deposits [abs.] Mining Eng., v. 12, no 7, p. 666, July 1960

WARGO, Joseph George

1-60. Magnetic susceptibility and fusion data for some volcanic rocks from southwestern New Mexico Geol Soc America Bull., v 71, no. 1, p. 87-91 incl. index map, diagrams, and table, Jan. 1960

2-60. A proposed classification scheme for pyroclastic rocks Arizona Geol. Soc. Digest, v. 3, p. 71-74 incl. diagrams, Mar 1960

3-60. The geology of the Schoolhouse Mountain quadrangle, Grant County, New Mexico [abs.] Arizona Geol. Soc. Digest, v. 3, p. 176-177, Mar. 1960.

WARING, Jon Lamont. See LEVIN, Ernest Maurice 1-60

WARKENTIN, Benno Peter. See LAMBE, Thomas William 1-60, YONG, Raymond N. Y 1-60

WARMAN, Harry Robert. See DENNISON, A. T. 1-60

WARMAN, James C

- 1-60 (and others) Geology and ground-water resources of Calhoun County, Alabama--An interim report Alabama Geol Survey Inf Ser. 17, 67 p, illus, 1960.

WARNE, Slade St J See WOLF, Karl H

WARNER, N A.

- 1-60. (and INGRAHAM, T R ) Decomposition pressures of ferric sulphate and aluminum sulphate Canadian Jour Chemistry, v 38, no 11, p 2196-2202 incl diagrams and tables, Nov 1960, reprinted, Canada Dept Mines and Tech Surveys Mines Br. Research Rept. R 73, [7] p. incl. diagrams and tables, July 1960

WARNING, George F.

- 1-60 Geology of the H. B Mine [British Columbia] Canadian Mining and Metall Bull., v 53, no 582, p 769-772 incl sections, Oct 1960, Canadian Inst Mining and Metallurgy Trans., v 63, p. 520-523, 1960

WARR, Jesse J., Jr See also CUTTITTA, Frank 2-60-4-60

- 1-60 (and CUTTITTA, Frank) The determination of lead in iron-bearing materials Art 218 in U. S Geol. Survey Prof. Paper 400-B, p B483-B484, 1960

WARREN, Harry Verney

- 1-60. (and DELAVALT, Robert Edmund) Trace element variations in related rocks Internat Geol Cong, 21st, Copenhagen, 1960, Rept, pt 2, p 57-64 incl diagram and tables, 1960.  
2-60 (and DELAVALT, Robert Edmund) Aqua regia extractable copper and zinc in plutonic rocks in relation to ore deposits Inst Mining and Metallurgy Bull. 643, Trans. 1959-60, v 69, pt 9, p 495-504, illus, London, June 1960  
3-60 (and DELEVALT, Robert E.) Observations on the biogeochemistry of lead in Canada Royal Soc Canada Trans, 3d ser., v 54, sec. 4, p 11-20, tables, June 1960.  
4-60. Health and geology Western Miner and Oil Rev., v 33, no. 8, p 35-44 incl. tables and illus., Aug 1960

WARREN, Percival Sidney

- 1-60 (and STELCK, Charles Richard) A new Freboldiceras from the Canadian Arctic [Northwest Territories] [abs] Royal Soc Canada Minutes Proc, 3d ser., v 54, App C, p 35, 1960  
2-60. (and STELCK, Charles Richard) A new Freboldiceras from the Canadian Arctic Royal Soc Canada Trans, 3d ser., v 54, sec. 4, p 21-26, illus, June 1960

WARRICK, Richard Ellsworth

- 1-60 (and WINSLOW, John Durfee) Application of seismic methods to a ground-water problem in northeastern Ohio Geophysics, v. 25, no 2, p 505-519 incl sketch maps, sections, and diagrams, Apr. 1960.

WARSHAW, Charlotte Marsh See also STRACZLK, J. A. 1-60

- 1-60. (and ROY, Rustum) Classification and a scheme for identification of layer silicates [abs.] Am. Ceramic Soc. Bull, v. 39, no 4, p 187, Apr. 1960.  
2-60. Experimental studies of illite, in Swineford, Ada, ed, Clays and clay minerals Natl. Conf Clays and Clay Minerals, 7th, Washington, D C., Oct 1958, Proc., p 303-316 incl. diagrams and tables, also illus, 1960. (Issued as Internat Earth Science Ser. Mon 5 of Pergamon Press, New York.)  
3-60. (and ROSENBERG, Philip E., and ROY, Rustum) Changes effected in layer silicates by heating below 550°C Clay Minerals Bull (London), v 4, no 23, p. 113-126 incl diagrams and tables, July 1960

WASHBURN, Albert Lincoln See HUNT, Charles Butler 3-60

## WASHINGTON STATE DIVISION of WATER RESOURCES

### WASHINGTON STATE DIVISION of WATER RESOURCES

1-60 Water resources of the Nooksack River basin and certain adjacent streams Washington State Div Water Resources Water Supply Bull. 12, 187 p., illus. incl. geol. map, 1960.

WASSALL, Harry William, 3d

1-60. Geological bibliographies--Cuba, 1781-1955, Pt. 2 Havana, Cuba, Henry Wassall and Assoc., Apr 1, 1960

WASSON, Edward Bassett. See BERG, Robert Raymond 1-60

WATERS, Aaron Clement

1-60. Determining direction of flow in basalts Am. Jour. Sci., v. 258-A (Bradley Volume), p 350-366 incl. sections and diagrams, illus, 1960.  
2-60. Twofold division of the Columbia River basalt [abs.] Geol. Soc. America Bull., v 71, no. 12, pt. 2, p 2082, Dec. 1960

WATKINS, J. Wade. See COLLINS, A. Gene 1-60

WATSON, Edward Hahn. See BUSÉ, María Luisa 1-60

WATSON, Jane Werner

1-60. The giant golden book of dinosaurs and other prehistoric reptiles New York, N. Y., Golden Press, 60 p., illus., 1960.

WATSON, Kenneth DePencier

1-60. Eclogite inclusions in serpentine pipes at Garnet Ridge, northeastern Arizona [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt 2, p. 2082-2083, Dec. 1960.

WAUGH, Wanda N.

1-60. (and HILL, Walter Edward, Jr.) Determination of carbon dioxide and other volatiles in pyritic limestones by loss on ignition Jour. Sed. Petrology, v. 30, no. 1, p. 144-147 incl. tables, Mar. 1960

WAYLAND, Russell Gibson

1-60. The Alaska Juneau gold ore body Neues Jahrb. Mineralogie Abh. (Stuttgart, Germany), Band 94, Festband Ramdohr, 1. Hälfte, p. 267-279 incl. chart and German abs., also diagrams, June 1960

WAYNE, William John

1-60. Stratigraphic position of the Ohio River formation in Indiana and Kentucky [abs.]. Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 2027, Dec. 1960.

2-60. Stratigraphy of the Ohio River Formation [Indiana-Kentucky] Indiana Geol. Survey Bull. 21, 44 p., illus., Dec. 1960

3-60. The Darrow mastodon [abs.] Indiana Acad. Sci. Proc 1959, v 69, p. 182, 1960.

WEATHERFORD, Richard L. See LARSON, Thurston Eric 1-60

WEAVER, C. F

1-60. (and McVAY, Thomas Newkirk) Immersion oils with indices of refraction from 1.292 to 1.411 Am Mineralogist, v. 45, nos. 3-4, p 469-470 incl. table, Mar.-Apr. 1960.

WEAVER, Charles Edward

1-60. Possible uses of clay minerals in search for oil Am. Assoc. Petroleum Geologists Bull., v 44, no. 9, p 1505-1518 incl. sketch map, sections, chart, diagram, and tables, Sept. 1960.

2-60 Possible uses of clay minerals in the search for oil, in Swineford, Ada, ed, Clays and clay minerals, V. 8 Natl. Conf. Clays and Clay Minerals, 8th, Norman, Okla., Oct. 1959, Proc., p. 214-227 incl. sketch map, sections, diagrams, and tables, 1960. (Issued as Internat. Earth Science Ser. Mon. 9 of Pergamon Press, New York)

WEAVER, John Dodsworth

- 1-60. Note on higher level erosion surfaces of Puerto Rico Caribbean Geol. Conf., 2d, Mayagüez, Puerto Rico, Jan 4-9, 1959, Trans , p 96-98 incl. index map, diagrams, with discussion, 1960

WEAVER, Opal V. See HARDISON, Mae W. 1-60

WEAVER, Paul. See LYNCH, Shirley Alfred 1-60

WEBB, Frank S.

- 1-60. Surface geology of the Eufaula-Texanna area, McIntosh and Pittsburg Counties, Oklahoma Shale Shaker, v. 10, no. 8, p 2-14 incl. index and geol sketch map, sections, illus., and discussion by C. B. Branan, Jr., Apr. 1960

WEBB, John S. See HAWKES, Herbert Edwin, Jr. 2-60

WEBB, Philip K.

- 1-60. Geology of the Cavanal syncline, Le Flore County, Oklahoma Oklahoma Geol Survey Circ 51, 65 p., illus incl. geol map, 1960.

WEBB, Robert Wallace See MURDOCH, Joseph 2-60

WEBER, Florence Robinson. See PÉWÉ, T. L. 2-60

WEBER, J. H.

- 1-60. The geochemistry of some graywackes and some shales [abs ] Canadian Mining Jour., v. 81, no 2, p 226, Feb 1960

WEBER, J. R

- 1-60. Comparison of gravitational and seismic depth determination on the Gilman Glacier and adjoining ice cap in northern Ellesmere Island [North-west Territories] [abs ] Oil in Canada, v 12, no 16, p 34, Feb. 15, 1960.

WEBER, Jon Noel Earl. See also SHAW, D. M 4-60

- 1-60. Geochemistry of graywackes and shales Science, v 131, no 3401, p. 664-665 incl table, Mar 4, 1960  
2-60. Ontario underground Canadian Geog Jour., v. 61, no. 2, p. 42-51 incl. index and sketch maps, diagrams, and illus , Aug 1960.

WEBSTER, A. Hubert

- 1-60. (and BRIGHT, Norman F H.) The iron-titanium-oxygen system at 1200° C. and oxygen partial pressures between 1 atm. and  $2 \times 10^{-14}$  atm. [abs ] Am Ceramic Soc Bull , v 39, no 4, p 187, Apr. 1960

WEBSTER, Glen M.

- 1-60 (and DAWSONGROVE, G. E.) The alteration of rock properties by percussion sidewall coring Am. Inst. Mining, Metall , and Petroleum Engineers Trans 1959, v. 216, p. 385-388 incl diagrams, table, and illus., 1960.

WEBSTER, R K See also MOORBATH, S. 3-60

- 1-60. Mass spectrometric isotope dilution analysis, Chap. 7 in Smales, A A , and Wager, L. R., ed , Methods in geochemistry New York, N. Y., Intersci Publishers, p 202-246, illus., 1960

WEDDLE, James Reid. See also PARK, W. H. 1-60, SULLIVAN, J. C 1-60

- 1-60 Premier and Enas areas of Poso Creek oil field California Oil Fields--Summ Operations July-Dec. 1959, v. 45, no. 2, p. 41-50, illus , 1960.

WEDOW, Helmuth, Jr.

- 1-60. Sequatchie and Rockwood formations in southeast Tennessee and part of northwest Georgia [abs ] Geol. Soc. America Bull , v. 71, no. 12, pt. 2, p 2028, Dec 1960

## WEED

WEED, S. B. See McCracken, Ralph J. 1-60

WEEKS, Alice Dowse. See also TRUEDELL, A. H. 1-60

1-60 (and EARGLE, Dolan Hoyer) Uranium at Palangana salt dome, Duval County, Texas Art. 24 in U. S. Geol. Survey Prof. Paper 400-B, p. B48-B52 incl. sections and diagrams, 1960.

WEEKS, Lewis George

1-60 A look at ourselves Am. Assoc. Petroleum Geologists Bull., v. 44, no. 7, p. 969-979, July 1960

2-60. Bela Hubbard (1890-1959) Am. Assoc. Petroleum Geologists Bull., v. 44, no. 4, p. 512-516 incl. portrait, Apr. 1960

3-60. Research in organic geochemistry Am. Assoc. Petroleum Geologists Bull., v. 44, no. 4, p. 499-500, Apr. 1960.

4-60 The next hundred years energy demand and sources of supply Geo-Times, v. 5, no. 1, p. 18-21, 51-55 incl. diagrams and tables, July-Aug. 1960.

5-60. Energy in 2059 [abs.]. Canadian Oil and Gas Industries, v. 13, no. 4, p. 101, Apr. 1960.

6-60. Some principles of petroleum occurrence [abs.] Tulsa Geol. Soc. Digest, v. 28, p. 78-80, 1960

7-60. Some principles of petroleum occurrence. Shale Shaker, v. 10, no. 6, p. 17-19, 21-23, 25-28, Feb. 1960.

WEEKS, Ludlow Jackson. See CANADA GEOL. SURVEY 9-60, 12-60

WEEKS, Wilford Frank

1-60. Tensile strength of NaCl ice [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 1999-2000, Dec. 1960.

WEGMANN, C. Eugène

1-60. Memorial to Serge von Bubnoff (1888-1957) Geol. Soc. America Proc. 1959, p. 161-167, portrait, Oct. 1960.

WEHRENBURG, John Patteson. See HAYDEN, Richard John 1-60

WEIDIE, Alfred E. See MURRAY, Grover Elmer 3-60

WEIDMAN, Robert McMaster. See GRAY, Henry Hamilton 1-60

WEIG, James A.

1-60. Page Field, Schleicher County, Texas, in Natural gas in the Southwest Southwestern Federation Geol. Soc. Trans., v. 1, p. 81-97 incl. index and sketch maps, and sections, 1960.

WEIGELT, William C.

1-60 Fluorescent mineral report 1st ed., Cumberland, Md., privately printed, 51 p., tables, 1960

WEILER, M. R. See KO, R. 1-60

WEIMER, Robert Jay. See also HAUN, J. D. 1-60, ROCKY MTN. ASSOC. GEOLOGISTS 1-60

1-60 Upper Cretaceous stratigraphy, Rocky Mountain area Am. Assoc. Petroleum Geologists Bull., v. 44, no. 1, p. 1-20 incl. index and sketch maps, diagrams, and sections, Jan. 1960.

2-60 (and HAUN, John Daniel) Cretaceous stratigraphy, Rocky Mountain region, U.S.A. Internat. Geol. Cong., 21st, Copenhagen, 1960, Rept., pt. 12, p. 178-184 incl. isopach and paleogeog. maps and section, 1960.

3-60. Geometric patterns, Upper Cretaceous sandstones, Rocky Mountain region [abs.] Am. Assoc. Petroleum Geologists Bull., v. 44, no. 7, p. 1260, July 1960.

WEINIG, Arthur J.

1-60. Gold forms in ores. Mines Mag., v. 50, no. 10, p. 27-32 incl. illus., Oct. 1960.

WEIR, Charles Edward. See YODER, Hatten Schuyler, Jr 1-60

WEIR, Gordon Whitney

- 1-60. (and PUFFETT, Willard Penry) Similarities of uranium-vanadium and copper deposits in the Lisbon Valley area, Utah-Colorado, U.S.A. Internat. Geol. Cong., 21st, Copenhagen, 1960, Rept., pt 15, p 133-148 incl. index and geol sketch maps, sections, diagrams, and table, 1960.
- 2-60. (and PUFFETT, Willard Penry) Preliminary geologic map and sections of the Mount Peale 2 NE quadrangle, San Juan County, Utah U.S. Geol. Survey Mineral Inv. Field Studies Map MF-141, scale 1 24,000 (1 in to 2,000 ft.), 1960
- 3-60. (and DODSON, Chester L., and PUFFETT, Willard Penry) Preliminary geologic map and section of the Mount Peale 2 SE San Juan County, Utah U.S. Geol. Survey Mineral Inv. Field Studies Map MF-143, scale 1 24,000 (1 in. to 2,000 ft.), 1960.
- 4-60. (and PUFFETT, Willard Penry) Preliminary geologic map of the Mount Peale 4 SE quadrangle, San Juan County, Utah, and San Miguel County, Colorado. U. S. Geol. Survey Mineral Inv. Field Studies Map MF-149, scale 1 24,000 (1 in. to 2,000 ft.), with section, 1960.
- 5-60. (and others) Preliminary geologic map and section of the Mount Peale 4 NE quadrangle, San Juan County, Utah and Montrose and San Miguel Counties, Colorado U. S. Geol. Survey Mineral Inv. Field Studies Map MF-150, scale 1 24,000 (1 in to 2,000 ft.), 1960.

WEIR, Thomas Robert

- 1-60. (editor) Economic atlas of Manitoba Winnipeg, Manitoba Dept. Industry and Commerce, 81 p. incl. geol. and other maps, diagrams, tables, and illus., 1960.

WEIS, Paul Lester. See also CAMERON, E. N. 3-60

- 1-60 Bleaching in the Coeur d'Alene district, Idaho Art 14 in U.S. Geol. Survey Prof. Paper 400-B, p. B27-B28, 1960

WEISMANN, T. J. See SCHRAYER, G. J 1-60

WEISS, Herbert V.

- 1-60. (and LAI, Ming G.) Cocrystallization of ultramicro quantities of alkaline earth elements with potassium rhodizonate--Determination of radio-barium in sea water Anal. Chemistry, v. 32, no. 4, p. 475-478 incl. diagrams and tables, Apr. 1960.

WEISS, Malcolm Pickett

- 1-60. (and NORMAN, Carl Edgar) The American Upper Ordovician standard--[Pt.] 4, Classification of the limestones of the type Cincinnati [Ohio-Indiana-Kentucky] Jour. Sed. Petrology, v. 30, no. 2, p 283-296 incl. diagrams, tables, and illus., June 1960
- 2-60. (and NORMAN, Carl E.) Classification of the limestones of the type Cincinnati [abs.] Geol. Soc. America Bull., v. 71, no 12, pt. 2, p. 2028, Dec. 1960
- 3-60. (and NORMAN, Carl Edgar) The American Upper Ordovician standard--[Pt.] 2, Development of stratigraphic classification of Ordovician rocks in the Cincinnati region Ohio Div. Geol. Survey Inf. Circ. 26, 14 p., illus., 1960.

WEIST, William Godfrey, Jr.

- 1-60. Records and logs of selected wells and test holes, and chemical analyses of ground water, Yuma County, Colorado Colorado Water Conserv. Board Ground-Water Ser. Basic Data Rept. 2, 41 p., illus., 1960.

WELBY, Charles William. See TAYLOR, Stuart Ross 1-60

WELD, Betsy Anne

- 1-60. (and ASSELSTINE, Erwin Sumner, and JOHNSON, Arthur) Reports and maps of the Geological Survey released only in the open files, 1959. U. S. Geol. Survey Circ. 428, 10 p., 1960.

## WELLER

- WELLER, James Marvin. See also AM. GEOL INST. Glossary Rev. Comm.  
2-60, HOARE, R. D. 2-60  
1-60 Development of paleontology Jour. Paleontology, v 34, no. 5, p. 1001-1019, Sept 1960.  
2-60. Stratigraphic facies differentiation and nomenclature Am. Assoc. Petroleum Geologists Bull., v. 42, no 3, p. 609-639, illus., Mar. 1958; Spanish translation, Bol Inf. Petroleras, no. 322, p. 92-106, table, Buenos Aires, Feb 1960.  
3-60 Stratigraphic principles and practice New York, N. Y., Harper and Brothers, 725 p. incl geol. and other sketch maps, sections, charts, diagrams, and tables, 1960.

## WELLS, John David

- 1-60. (and SHERIDAN, Douglas Maynard, and ALBEE, Arden Leroy) Equivalence of the Precambrian Idaho Springs formation and the quartzite along Coal Creek, Front Range, Colorado [abs.] Geol Soc. America Bull., v. 71, no. 12, pt. 2, p 2000, Dec 1960.  
2-60. Petrography of radioactive Tertiary igneous rocks, Front Range mineral belt, Colorado U S. Geol. Survey Bull. 1032-E, p. 223-272 incl index map, diagrams, and table, geol. map, 1960  
3-60. Stratigraphy and structure of the House Rock Valley area, Coconino County, Arizona U S. Geol Survey Bull. 1081-D, p 117-158 incl. index map and diagrams, also geol. and tectonic maps, 1960

## WELLS, John West

- 1-60 A Pleistocene marine mollusk in central New York: Nautilus, v. 74, no. 1, p 26-28, illus., July 1960.

## WELLS, Lloyd C. See CRONIN, James Gerald 1-60

## WELLS, Ralph Gordon

- 1-60. (and Van VLACK, Lawrence Hall, and La LONDE, Ronald Edward) Effect of ferrous oxide on zircon sand at 1200°C Am Ceramic Soc. Bull., v 39, no. 12, p 735-739 incl. diagrams, table, and illus., Dec. 1960

## WELSCH, W. Frederick

- 1-60. Conservation in Nassau County [New York] Am. Water Works Assoc. Jour., v 52, no. 12, p 1494-1498, Dec. 1960

## WELSH, John Elliott

- 1-60. Biostratigraphy of the Pennsylvanian and Permian systems in southern Nevada [abs.] Dissert. Abs., v 20, no. 8, p 3262-3263, Feb 1960.

## WENGER, Welton J

- 1-60. (and REID, B. W.) Properties of petroleum from the Four Corners area of Arizona, Colorado, New Mexico, and Utah U. S. Bur Mines Rept. Inv. 5587, 25 p. incl sketch map, diagrams, and tables, 1960

## WENNEKENS, Marcel Pat

- 1-60. Marine environment and macro-benthos of the waters of Puget Sound, San Juan Archipelago, southern Georgia Strait, and Strait of San Juan de Fuca [Washington] [abs.] Dissert. Abs., v. 20, no. 7, p. 2760, Jan 1960.

## WENT, Frits Warmdt

- 1-60. Organic matter in the atmosphere, and its possible relation to petroleum formation Natl Acad Sci Proc, v 46, no. 2, p 212-221, Feb. 1960

## WENTWORTH, David W.

- 1-60. A Lower Ordovician limestone and dolomite relationship in the Mohawk Valley, New York [abs.] West Virginia Acad Sci. Proc 1959, v. 31, p. 56-57, Dec. 1960.

## WERNER, Michael A. See DIEBOLD, Frank E. 1-60



WERNICK, Jack Harry

- 1-60. Constitution of the  $\text{AgSbS}_2$ -PbS,  $\text{AgBiS}_2$ -PbS, and  $\text{AgBiS}_2$ - $\text{AgBiSe}_2$  Systems Ann Mineralogist, v. 45, nos 5-6, p 591-598 incl diagrams and tables, May-June 1960.

WESCOTT, Eugene M.

- 1-60 Magnetic and telluric current disturbances in Alaska Geophysics, v 25, no 6, p 1242-1250 incl diagrams and tables, Dec 1960  
2-60. (and HESSLER, Victor Peter) The effect of topography and geology on telluric currents Alaska Univ. Geophys Inst [Rept Ser ] UAG-R107, 30 p., illus , Apr 1960.

WESSMAN, H. G. See BROSS, Gerald L. 1-60

WEST, Alvin E.

- 1-60 Geology of northeastern Lincoln County, Oklahoma Shale Shaker, v 11, no. 3, p 2-12 incl. index and geol. sketch maps, sections, correlation chart, table, and illus., Nov. 1960

WEST, Lewis R. See SANFORD, Thomas H , Jr. 1-60, 2-60

WEST, Philip J. See TERZAGHI, Karl 1-60

WEST TEXAS GEOLOGICAL SOCIETY

- 1-60. Geology of the Delaware basin and field trip guidebook, Sept. 29-Oct. 1, 1960 Midland, Texas, 97 p. incl index, contour, and isopach maps, sections, and tables, also geol map, section, chart, and illus., 1960 Includes individual papers which are cited separately.

WESTERN MINER and OIL REVIEW

- 1-60. Mining and subsurface analysis by new seismic technique. Western Miner and Oil Rev., v. 33, no. 7, p 38-40 incl diagrams and illus., July 1960.

WESTERN STATES MAP COMPANY

- 1-60. (compiler) Oil and gas map of eastern Utah--[Sheet 1], [Sheet 2] western Utah Salt Lake City, Utah, scale about 1 in. to 4 mi [1960].

WESTERVELT, Ralph D.

- 1-60. An investigation of the sulphide mineralization at the Kootenay Chief ore body, Bluebell mine, B C [abs.] Canadian Mining Jour., v. 81, no. 8, p 105, Aug. 1960.

WETHERILL, George West. See also ALDRICH, L. T 1-60, BASS, M N. 2-60, TILTON, G R. 2-60

- 1-60. (and DAVIS, Gordon Leslie, and TILTON, George Robert) Age measurements on minerals from the Cutler batholith, Cutler, Ontario Jour. Geophys. Research, v. 65, no. 8, p. 2461-2466 incl. sketch maps and tables, Aug 1960.  
2-60. Age of the base of the Cambrian Nature (London), v. 187, no. 4731, p. 34-36, with discussion by A. Holmes, July 2, 1960.

WETMORE, Alexander

- 1-60. A classification for the birds of the world Smithsonian Misc. Colln., v. 139, no. 11, 37 p , June 23, 1960  
2-60. Pleistocene birds in Bermuda Smithsonian Misc. Colln., v. 140, no. 2, 11 p., illus., July 7, 1960

WETZEL, Otto Kramer, Jr.

- 1-60. Natural gas--Its value as a function of its chemical and physical characteristics, in Natural gas in the Southwest Southwestern Federation Geol. Soc. Trans., v. 1, p. 99-114 incl diagrams and tables, 1960

WEYL, Peter K.

- 1-60. Porosity through dolomitization--Conservation-of-mass requirements Jour Sed. Petrology, v 30, no. 1, p. 85-90 incl. diagram and table, Mar. 1960.

WEYL

WEYL, Richard See HOFFSTETTER, Robert 5-60, SCHULZ, Rudolf 2-60, 3-60

WEYL, Woldemar Anatol

- 1-60 (and ORMSBY, Walter Clayton) Atomistic approach to the rheology of sand-water and of clay-water mixtures, Chap 7 in Rheology--Theory and applications, V. 3, Eirich, F. R., ed. N Y., Academic Press, p 249-297 incl. diagrams and tables, New York, 1960

WHEATLEY, George York. See BRAUN, Theodor H. 1-60

WHEELER, Everett Pepperrell, 2d

- 1-60. Anorthosite-adamellite complex of Nain, Labrador Geol. Soc. America Bull., v. 71, no. 12, pt. 1, p. 1755-1762 incl. table, geol. sketch map, Dec. 1960.

WHEELER, Harry Eugene

- 1-60. Early Paleozoic tectono-stratigraphic patterns in the United States Internat. Geol. Cong., 21st, Copenhagen, 1960, Rept., pt. 8, p. 47-56 incl. diagrams, 1960.  
2-60. Paleozoic-Mesozoic framework of the Cordilleran geosyncline [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 2083, Dec. 1960.

WHEELER, John Oliver See CANADA GEOL. SURVEY 38-60, 39-60, GABRIELSE, H. 2-60, GREEN, Lewis Howard 1-60, 3-60

WHEELER, Robert Reid

- 1-60. The structural map of the midcontinent from Denver to the east Texas gulf coast, Central series Dallas, Tex., privately printed, 3 sheets, scale 1 in. to 6 mi., 1960  
2-60. The structural map of the midcontinent from Denver to the east Texas gulf coast, Southern series Dallas, Tex., privately printed, 3 sheets, scale 1 in. to 6 mi., 1960.

WHEELER, Walter Hall

- 1-60. The untatheres and the Cope-Marsh war Science, v. 131, no. 3408, p. 1171-1176 incl. illus., Apr. 22, 1960

WHELAN, James Arthur

- 1-60 (and ODEKIRK, Jerry R.) Differential thermal analysis and infrared-absorption spectra of some zeolites and other hydrous silicates [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 2001, Dec. 1960

WHETSTONE, George W. See DOLL, Warwick L. 1-60

WHIDDEN, Helen L. See KING, Gayle 1-60

WHITE, Donald Edward. See also THOMAS, H. E. 2-60

- 1-60. Summary of chemical characteristics of some waters of deep origin Art. 206 in U. S. Geol. Survey Prof. Paper 400-B, p. B452-B454 incl. table, 1960.

WHITE, Everett M.

- 1-60. Some surface glacial deposits in Hand County, South Dakota South Dakota State Geol. Survey Misc. Inv. 1, 21 p. incl. index and sketch maps and diagram, Dec. 1960.

WHITE, George Willard

- 1-60. Classification of Wisconsin glacial deposits in northeastern Ohio U. S. Geol. Survey Bull. 1121-A, p. A1-A2, illus., 1960.

WHITE, H. Gene

- 1-60. (and MacELVAIN, Robert C.) History of the oil and gas industry in Alabama [abs.] Alabama Acad. Sci. Jour., v. 31, no. 6, p. 400-401, Oct. 1960.

WHITE, Jack Lee. See MACKENZIE, John Douglas 2-60

WHITE, James Edward

1-60. (and PRESS, Frank) Geophysical research and progress in exploration Geophysics, v. 25, no 1, p. 168-180, Feb. 1960

• WHITE, Joe Lloyd. See BRONSON, Roy 1-60, HENSEL, D R 1-60

WHITE, Sidney Edward

1-60 Late Pleistocene glacial sequence for west side of Iztaccihuatl, México [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 2001, Dec 1960.

WHITE, W R H. See MILNE, William George 2-60

WHITE, Walter Noy. See TURNER, Samuel Foster 1-60

WHITE, Walter Stanley

1-60. (and WRIGHT, James Clifton) Lithofacies of the Copper Harbor conglomerate, northern Michigan. Art. 3 in U. S. Geol. Survey Prof. Paper 400-B, p. B5-B8 incl. geol. sketch map and section, 1960.

2-60. The Keweenaw lavas of Lake Superior, an example of flood basalts. Am. Jour. Sci., v. 258-A (Bradley Volume), p. 367-374 incl. section and table, 1960.

3-60. The White Pine copper deposit. Econ. Geology, v. 55, no 2, p. 402-410, Mar.-Apr 1960, reply to discussions of paper by W. S. White and J. C. Wright, v. 49, p. 675-716, 1954.

WHITE, William Alexander

1-60. Major folds by solution in the western Highland Rim of Tennessee [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 2029, Dec 1960.

WHITE, William Arthur

1-60. Effects of weathering on stability of Paleozoic shales and clays [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 2002, Dec. 1960.

2-60. Lightweight aggregate from Illinois shales. Illinois State Geol. Survey Div. Circ. 290, 29 p. incl. geol. sketch map, diagram, tables, and illus., 1960.

3-60. (and LAMAR, John Everts, compilers) Ceramic tests of Illinois clays and shales. Illinois State Geol. Survey Div. Circ. 303, 72 p., illus., 1960.

WHITE, William B.

1-60. (and DACHILLE, Frank, and ROY, Rustum) Senarmontite-valentinite and arsenolite-claudetite relations determined by displacive shearing [abs.]. Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 2002, Dec. 1960

2-60. (and DEIKE, George Herman, 3d) Secondary mineralization in Wind Cave, South Dakota [abs.]. Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 2114, Dec. 1960

3-60 Terminations of passages in Appalachian caves as evidence for a shallow phreatic origin, in Moore, G. W., ed., Origin of limestone caves--A symposium with discussion. Natl. Speleol. Soc. Bull., v. 22, pt. 1, p. 43-53, illus., Jan 1960

WHITE, William Harrison

1-60. Granitic rocks, southwestern British Columbia, in Geol. Discussion Club, Guidebook for geological field trips in southwestern British Columbia Vancouver, B. C., p. 7-10, Mar. 1960.

WHITEHOUSE, Ulysses Grant

1-60. (and JEFFREY, Lela M., and DEBRECHT, James D.) Differential settling tendencies of clay minerals in saline waters, in Swineford, Ada, ed., Clays and clay minerals. Natl. Conf. Clays and Clay Minerals, 7th, Washington, D. C., Oct. 1958, Proc., p. 1-79 incl. diagrams and tables, also tables and illus., 1960 (Issued as Internat. Earth Science Ser. Mon. 5 of Pergamon Press, New York)

## WHITHAM

WHITHAM, Kenneth

1-60. National report for Canada--geomagnetism Dominion Observatory Ottawa Pub., v. 24, no 4, p 87-98, 1960

WHITING, Richard F. See SCHNEER, Cecil Jack 1-60

WHITLOW, Jesse William. See BROWN, Clarence Ervin 1-60, OVERSTREET, William Courtney 3-60

WHITMORE, Frank Clifford, Jr.

1-60. Terrain intelligence and current military concepts Am Jour Sci, v 258-A (Bradley Volume), p. 375-387, 1960

WHITNEY, Geoffrey G, Jr See ZEIGLER, John M. 1-60

WHITTAKER, Eric James William

1-60. The crystal chemistry of the amphiboles Acta Cryst., v 13, pt 4, p 291-298 incl diagrams and illus, Apr. 1960, addition with title, Relationships between the crystal chemistry of pyroxenes and amphiboles, pt. 9, p. 741-742, Sept 1960.

WHITTEN, Charles Arthur

1-60 Horizontal movement in the earth's crust Jour Geophys Research, v 65, no 9, p 2839-2844 incl. diagrams, Sept 1960

2-60 (and CLAIRE, C. N.) Creep on the San Andreas fault [Calif.]-- Analysis of geodetic measurements along the San Andreas fault Seismol. Soc America Bull, v. 50, no 3, p 404-415 incl sketch map, diagrams, and tables, July 1960

3-60. Geodetic measurements related to crustal movements and particularly earthquakes Am. Geophys Union Trans., v. 41, no 2, p. 153-154, June 1960.

WHITTEN, E H. Timothy

1-60. Systematic quantitative areal variation of six granitic massifs [abs.] Geol Soc. America Bull, v. 71, no 12, pt. 2, p 2002-2003, Dec. 1960.

2-60. Quantitative distribution of major and trace components in rock masses [abs.] Mining Eng., v 12, no 12, p 1248, Dec 1960.

WHITTIG, Lynn D See KUBOTA, Joe 1-60

WHITTINGTON, Harry Blackmore See also BOUCOT, A J. 4-60

1-60. Cordania and other trilobites from the Lower and Middle Devonian Jour. Paleontology, v 34, no. 3, p 405-420 incl. diagrams, illus, May 1960.

2-60. Unique fossils from Virginia Virginia Minerals, v. 6, no. 3, 7 p, illus., July 1960

WHITWORTH, Virgil Lee

1-60. (and HAYE, Edward Fabra, and LINDHOLM, Thomas M) Gravity-photogeology method boosts accuracy, cuts costs World Oil, v. 150, no 5, p 99-100, 104 incl diagrams and illus, Apr. 1960

WHYTE, G N.

1-60. (and SHARMA, Balraj, and TAYLOR, H W) A note on the decay of Cs<sup>132</sup> Canadian Jour Physics, v. 38, no. 6, p. 877-880 incl diagram, June 1960.

WICHITA UNIVERSITY See KANS. GEOL. SOC. 1-60

WICKEN, Oscar M.

1-60. Magnesite and related minerals, in Am Inst. Mining, Metall, and Petroleum Engineers, Industrial minerals and rocks, p 533-544 incl table, 1960

WICKERSHEIM, Kenneth A

1-60. (and LEFEVER, Robert A., and HANKING, B. M) Infrared absorp-

tion spectrum of the silicate ion in the garnet structure Jour. Chem. Physics, v. 32, no. 1, p. 271-276 incl. diagrams and table, Jan. 1960

WICKREMASINGHE, O. C. See SHAW, Denis Martin 4-60

WICKSTROM, Alden E.

1-60 (and DAVIDSON, Donald Thomas) Fine sands in eastern Iowa—a study of their geological and engineering properties, in Geologic and engineering properties of Pleistocene materials in Iowa Iowa State Univ. Sci. and Technology, Iowa Eng. Expt. Sta. Bull. 191 (Iowa State Highway Comm., Iowa Highway Research Board Bull. 20), p. 167-231 incl. sketch maps, diagrams, tables, and illus., Dec. 1960.

WIDMER, Kemble

1-60. Geological problems in the construction of dams New York Acad. Sci. Trans., ser. 2, v. 22, no. 4, p. 223-232, illus. incl. geol. maps, Feb. 1960.

WIDMIER, J. W. See KAY, Marshall 3-60

WIENERT, Herbert W.

1-60. A simple device for single-lens stereophotography of paleontological specimens Michigan Univ. Mus. Paleontology Contr., v. 15, no. 5, p. 121-124, illus., Jan. 11, 1960.

2-60. Techniques in the photography of fossilized plants Michigan Univ. Mus. Paleontology Contr., v. 15, no. 6, p. 125-132, illus., Jan. 12, 1960.

WIER, Charles Eugene

1-60. Stratigraphic relations of the Merom Sandstone near Merom, Indiana Indiana Acad. Sci. Proc. 1959, v. 69, p. 217-223, illus., 1960

WIERSEMA, Alice

1-60. Experiments on color centers in Crestmore [California] blue calcite California Univ., Livermore, Lawrence Radiation Lab. Rept. UCRL-9494, 33 p., illus., Dec. 9, 1960.

WIESE, John Herbert

1-60. The penetration chart of significant Nevada wildcats, in Geology of east central Nevada Intermountain Assoc. Petroleum Geologists, 11th Ann. Field Conf., 1960 Guidebook, p. 232, chart, 1960.

WIESNET, Donald Richard. See OWENS, James Patrick 2-60

WIIK, H. B. See MASON, Brian Harold 6-60, 7-60

WILBERT, W. P. See MURRAY, Grover Elmer 3-60

WILBUR, Karl M.

1-60. Shell structure and mineralization in molluscs, in Sognnaes, R. F., ed., Calcification of biological systems--A symposium, Dec. 29, 1958, Washington, D. C. Am. Assoc. Adv. Sci. Pub. 64, p. 15-40 incl. diagrams and illus., 1960

WILCOX, Ray Everett. See also FISHER, R. V. 1-60, 5-60, WILMARTH, V. R. 1-60

1-60. Optic-angle determination on the spindle stage [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 2003, Dec. 1960

WILD, Jack

1-60. Types of structures in southern Saskatchewan [abs.] Canadian Mining Jour., v. 81, no. 6, p. 169, June 1960.

WILES, D. R.

1-60. The effect of radioactive fallout on instrumental prospecting Canadian Mining Jour., v. 81, no. 5, p. 61-63 incl. table, May 1960

## WILES

WILES, William W

- 1-60 Pore concentration of the planktonic foraminifer, *Globigerina eggeri*, as an index to Quaternary climates [abs ] Dissert Abs , v 21, no 4, p 854, Oct 1960

WILHELMY, Herbert

- 1-60 Luftbild San Bernardino Mountains, Sud-Kalifornien Die Erde, Jahrg 91, Heft 1, p 1-5, illus , Berlin, 1960.
- 2-60 Erdbeben [Montana] Geog Rundschau, Jahrg 12, Nr 1, p 1-9, illus , Braunschweig, Germany, Jan 1960

WILKENING, Marvin Hubert

- 1-60 (and HAND, John E ) Radon flux at the earth-air interface Jour Geo-phys Research, v 65, no 10, p 3367-3370 incl diagrams, Oct 1960

WILKENS, Richard A See RASMUSSEN, William Charles 1-60

WILKINS, D H

- 1-60. The chelometric determination of aluminum, nickel and manganese without prior separation Anal Chim Acta (Amsterdam), v 23, no 4, p 309-311 incl table, Oct 1960

WILKINSON, Elbert R

- 1-60 Vallecitos field California Oil Fields--Summ Operations July-Dec. 1959, v 45, no 2, p 17-33, illus , 1960

WILLARD, Allen D See WILLIAMS, J Stewart 1-60

WILLARD, Gates

- 1-60 The school science teacher--A new role for the graduate geologist GeoTimes, v 4, no 8, p 14-15, 34-35, May-June 1960

WILLARD, Robert J

- 1-60. A method of teaching basic crystallography to the beginning student Arkansas Acad Sci Proc , v 14, p 29-37 incl diagram, 1960
- 2-60 Beaver Reservoir IV--Nature fashions the stage Arkansas Archeol Soc Newsletter, v 1, no 8, p 1-5 incl sections, 1960

WILLDEN, Charles Ronald

- 1-60 Sedimentary iron-formation in the Devonian Martinformation, Christmas quadrangle, Arizona Art 11 in U S Geol Survey Prof Paper 400-B, p B21-B23 incl geol sketch map and table, 1960
- 2-60 Major westward thrusting of post-Middle Triassic age in northwestern Nevada [abs ] Geol Soc America Bull , v 71, no 12, pt 2, p 2003-2004, Dec 1960

WILEY, Gordon R

- 1-60 New World prehistory Science, v 131, no 3393, p 73-86 incl charts and illus , Jan 8, 1960

WILLIAMS, Eugene Griffin See also FERM, J C 1-60

- 1-60 Marine and fresh water fossiliferous beds in the Pottsville and Allegheny groups of western Pennsylvania Jour Paleontology, v 34, no 5, p 908-922 incl index and faunal distribution maps, sections, and tables, illus , Sept 1960
- 2-60 Relationship between the stratigraphy and petrography of Pottsville sandstones and the occurrence of high-alumina Mercer clay Econ Geology, v. 55, no 6, p 1291-1302 incl index map, geol sections, tables, and illus , Sept -Oct 1960

WILLIAMS, Harold L.

- 1-60. Cisco series on the Central Basin Platform [Texas], in A study of the Cisco facies near Breckenridge, Texas Soc. Econ Paleontologists and Mineralogists Permian Basin Chap., Ann. Field Trip, Apr. 1960, [Guide-book] p 60-63, illus., 1960

WILLIAMS, Howell

- 1-60 Volcanic collapse-basins of Lakes Atitlan and Ayarza, Guatemala Internat Geol Cong , 21st, Copenhagen, 1960, Rept , pt 21, p 110-118 incl geol sketch maps, section, and diagram, 1960
- 2-60. Volcanic history of the Guatemalan Highlands California Univ Pubs Geol Sci , v 38, no 1, p 1-87, illus , Sept 30, 1960

3-60 Mount Mazama Geol Soc. Oregon Country Geol News Letter, v. 26, no 9, p. 64, Sept. 1960

WILLIAMS, James Stewart

1-60 (and WILLARD, Allen D., and PARKER, Verlyn) Late Pleistocene history of Bear Lake Valley, Utah-Idaho [abs.] Geol. Soc. America Bull., v. 71, no 12, pt 2, p 2042, Dec 1960.

WILLIAMS, John Bernard Edgar. See ROBINSON, Edward 1-60

WILLIAMS, John Ropes

1-60 Cenozoic sediments beneath the central Yukon Flats, Alaska Art 152 in U. S. Geol. Survey Prof Paper 400-B, p. B329, 1960

WILLIAMS, Merton Yarwood

1-60. Evolution of Paleozoic life--Ordovician to Permian, in Evolution, its science and doctrine Royal Soc Canada "Studia Varia" Ser. 4, p 22-44, 1960

WILLIAMS, Milton See also DAUGHTRY, A C 1-60

1-60 Applications of nuclear science in petroleum production Jour. Petroleum Technology, v. 12, no 8, p. 11-13, Aug. 1960.

WILLIAMS, Paul Lincoln

1-60. A stained slice method for rapid determination of phenocryst composition of volcanic rocks Am. Jour. Sci., v 258, no. 2, p 148-152, diagrams, Feb. 1960.

WILLIAMS, Sidney Arthur See also BIDEAUX, R A. 2-60

1-60. A new occurrence of allanite in the Quijotoa Mountains, Pima County, Arizona Arizona Geol. Soc. Digest, v. 3, p 46-51 incl. geol. sketch map and section and tables, Mar. 1960

WILLIAMS, Wayne W.

1-60 (and DAVIDSON, Donald Thomas, and CHU, Ting Ye) Properties of five Iowa fine sands, in Geologic and engineering properties of Pleistocene materials in Iowa Iowa State Univ. Sci and Technology, Iowa Eng Expt. Sta. Bull 191 (Iowa State Highway Comm , Iowa Highway Research Board Bull 20), p. 232-250 incl index and sketch maps, diagrams and tables, reprinted, Dec. 7, 1960, originally published 1954

WILLIAMSON, Donald Robert

1-60. The sillimanite group Colorado School Mines Mineral Industries Bull , v. 3, no. 4, p 1-11, illus., July 1960.

2-60 (and BURGIN, Lorraine) Pumice and pumicite Colorado School Mines Mineral Industries Bull., v 3, no. 3, 12 p , illus incl. geol. map, May 1960.

3-60. (and BURGIN, Lorraine) Sources of information for western states mineral industries Colorado School Mines Mineral Industries Bull., v. 3, no 2, 10 p , Mar 1960.

4-60. (and BURGIN, Lorraine) Limestone occurrences in Colorado Colorado School Mines Mineral Industries Bull , v. 3, no 1, 12 p , illus. incl. geol. maps, Jan. 1960.

WILLIAMSON, W. O.

1-60. Some effects of deformation on the structure and properties of clay Mineral Industries, v. 29, no 7, p. 3-5, 8 incl diagrams and illus., Apr. 1960.

WILLIS, David E.

1-60. (and WILSON, James Tinley) Maximum vertical ground displacement of seismic waves generated by explosive blasts [abs.] Geol. Soc. America Bull , v 71, no. 12, pt. 2, p 2083-2084, Dec 1960

WILLMAN, Harold Bowen. See FRYE, John Chapman 1-60, 3-60, KOSANKE, Robert Max 1-60-3-60

## WILLMORE

WILLMORE, P. L.

- 1-60 (and BANCROFT, Alfred M.) The time term approach to refraction seismology Royal Astron. Soc Geophys Jour. (London), v. 3, no 4, p. 419-432 incl diagrams and table, Dec. 1960.

WILMARTH, Verl Richard. See also BUNKER, C M. 1-60, MYERS, A. T. 1-60

- 1-60 (and BOTINELLY, Theodore, and WILCOX, Ray Everett) Alteration of tuffs by Rainier underground nuclear explosion, Nevada Test Site, Nye County, Nevada Art. 67 in U S Geol Survey Prof. Paper 400-B, p. B149-B151 incl. table, 1960.

- 2-60. (and McKEOWN, Francis Alexander) Structural effects of Rainier, Logan, and Blanca underground nuclear explosions, Nevada Test Site, Nye County, Nevada Art 191 in U S Geol Survey Prof. Paper 400-B, p. B418-B423 incl geol. maps, diagram, and sections, 1960

WILMOTH, Benton McMillan, Jr. See also DOLL, W. L 1-60

- 1-60 Particle-size and permeability studies of the Quaternary alluvium in Kanawha County, W Va West Virginia Acad. Sci. Proc 1960, v 32, p 174-179, illus., Dec. 1960.

WILSHIRE, L M

- 1-60 Valley Grove (southeast) Field, Okfuskee County, Oklahoma Shale Shaker, v. 10, no 7, p 16-18 incl sketch map, Mar 1960

WILSON, Ben Hur

- 1-60 The novacean theory Earth Sci , v 13, no. 4, p. 139-140 incl illus., Aug 1960.

WILSON, Charles William, Jr.

- 1-60 (and STEARNS, Richard Gordon) Pennsylvanian marine cyclothem in Tennessee Geol. Soc. America Bull , v. 71, no 10, p. 1451-1465 incl. geol. sketch maps, diagrams, section, and charts, Oct 1960, reprinted as Tennessee Div. Geology Rept Inv. 11, 1960

WILSON, Derek William Raymond See RAASCH, Gilbert Oscar 1-60

WILSON, E. C. See LANGENHEIM, Ralph Louis, Jr 7-60

WILSON, Eldred Dewey. See also MOORE, R T. 1-60, VAUGHN, W. W. 1-60, 2-60

- 1-60 Geologic factors related to block caving at San Manuel copper mine, Pinal County, Ariz --2[d] progress report, April 1956-March 1958 U. S. Bur. Mines Rept. Inv. 5561, 43 p incl. index and sketch maps, section, diagrams, and tables, 1960.

- 2-60 (and MOORE, Richard Thomas and O'HAIRE, Robert T.) Geologic map of Navajo and Apache Counties, Arizona Tucson, Arizona Bur. Mines, scale 1 375,000 (about 1 in. to 6 mi ), 1960

- 3-60. (and MOORE, Richard Thomas, and O'HAIRE, Robert T ) Geologic map of Pima and Santa Cruz Counties, Arizona Tucson, Arizona Bur. Mines, scale 1 375,000 (about 1 in. to 6 mi ), 1960.

- 4-60 Geologic map of Yuma County, Arizona Tucson, Arizona Bur. Mines, scale 1 375,000 (about 1 in to 6 mi ), 1960.

WILSON, Harry David Bruce

- 1-60 (and BRISBIN, William Corbett) Thompson-Moak Lake nickel belt [abs ] Geol. Soc. America Bull., v 71, no. 12, pt 2, p. 2004, Dec 1960, Econ Geology, v. 55, no 6, p. 1327, Sept -Oct 1960.

- 2-60. (and BRISBIN, William Corbett) Regional structure of the Thompson-Moak Lake nickel belt [Manitoba] [abs.] Canadian Mining and Metall. Bull , v. 53, no. 575, p. 195, Mar. 1960

WILSON, HERSCHELL Thomas

- 1-60. Coynosa field, Pecos County, Texas, in Geology of the Delaware basin West Texas Geol. Soc., Field Trip, Sept -Oct. 1960, Guidebook, p 66-70 incl. structure contour maps, section, and table, 1960



WILSON, James Lee

- 1-60. (and MAJEWSKE, Otto P ) Conjectured middle Paleozoic history of central and west Texas, in Texas Univ Bur Econ Geology, Aspects of the geology of Texas--A symposium Texas Univ Pub 6017, p 65-86, illus., Sept 1, 1960

WILSON, James Tinley. See WILLIS, David E 1-60

WILSON, John Andrew. See also MURRAY, G. E. 1-60

- 1-60. Miocene carnivores, Texas Coastal Plain Jour. Paleontology, v. 34, no 5, p 983-1000 incl. diagrams, tables, and illus., Sept 1960
- 2-60. Stratigraphic practice in North American vertebrate paleontology Internat Geol Cong , 21st, Copenhagen, 1960, Rept , pt 22, p 102-110 incl diagrams, 1960

WILSON, John H , 2d

- 1-60. Twofreds Field, Loving, Reeves and Ward Counties, Texas, in Geology of the Delaware basin West Texas Geol. Soc., Field Trip, Sept -Oct 1960, Guidebook, p 81-84 incl structure contour map and sections, 1960.

WILSON, John Tuzo

- 1-60. Is the earth expanding owing to a decrease in the gravitational constant? [abs ] Royal Soc. Canada Minutes Proc , 3d ser., v. 54, App C, p 35, 1960.
- 2-60. Former mountain connections in the Arctic [abs.] Oilweek, v. 10, no 49, p 23, Jan 23, 1960, Oil in Canada, v 12, no. 16, p. 32, Feb. 15, 1960
- 3-60. Some consequences of expansion of the Earth Nature (London), v. 185, no. 4717, p 880-882, illus , Mar. 26, 1960.
- 4-60. Geophysics and continental growth, in Science in progress, 11th ser., Taylor, H S., ed New Haven, Conn , Yale Univ. Press, p. 61-91, illus., 1960

WILSON, Joseph M

- 1-60. Malcolm Earl Wilson, Sr (1885-1960) Am. Assoc. Petroleum Geologists Bull., v 44, no. 8, p 1436-1437 incl. portrait, Aug. 1960.

WILSON, Leonard Richard

- 1-60. Stratigraphic palynology as a tool for commercial geology [abs ] Geol. Soc America Bull , v 71, no 12, pt 2, p 2115, Dec. 1960
- 2-60. Florinites pelucidis and Endosporites ornatus with observations on their morphology Oklahoma Geology Notes, v 20, no 2, p. 29-33, illus , Feb. 1960.
- 3-60 (and HEDLUND, R. W ) Two techniques for staining hystrichosphaerids Oklahoma Geology Notes, v. 20, no. 4, p 101-102, Apr. 1960.
- 4-60 (and CLARKE, R. T.) Siliceous spherules in tracheids of cordaitan wood Oklahoma Geology Notes, v 20, no. 5, p 106-110, illus , May 1960.
- 5-60 (and CLARKE, R. T ) A Mississippian chitinozoan from Oklahoma Oklahoma Geology Notes, v. 20, no. 6, p. 148-150, illus , June 1960.
- 6-60. A Permian hystrichosphaerid from Oklahoma Oklahoma Geology Notes, v. 20, no. 7, p. 170, illus., July 1960
- 7-60 Development of paleobotany in Oklahoma Oklahoma Geology Notes, v 20, no 9, p 217-223, Sept. 1960

WILSON, M T See THOMAS, Harold Edgar 1-60

WILSON, Morley Evans

- 1-60 Origin of pillow structure in early Precambrian lavas of western Quebec Jour. Geology, v 68, no. 1, p. 97-102, illus., Jan 1960
- 2-60 Wyatt Malcolm, 1872-1959 Royal Soc. Canada Minutes Proc., 3d ser., v 54, p 137, 139, portrait, 1960

WILSON, Richard Fairfield See MAUGHAN, Edwin Kelly 1-60, STEWART, John Harris 1-60

WILSON, Robert Lake See NEUMAN, Robert Ballin 2-60

## WILSON

WILSON, Robert Warren

- 1-60. Early Miocene rodents and insectivores from northeastern Colorado Kansas Univ Paleont. Contr. [24], Vertebrata, art. 7, 92 p., illus, Nov 21, 1960

WILSON, Stanley DeWolf

- 1-60 (and HANCOCK, C. W., Jr.) Horizontal displacements of clay foundations Cong Panam. Mecánica Suelos y Cimentaciones, 1st, México, D. F., Sept 7-12, 1959, Mem, v 1, p. 41-64 incl diagrams, illus., Spanish abs, discussion by H J Gibbs, Thomas Shuk, R. M Hardy, and reply by authors, 1960.
- 2-60. Slope stabilization in open pit mining Mining Cong Jour, v. 46, no 7, p 28-33 incl diagrams and illus., July 1960

WILSON, William F.

- 1-60. Subsurface stratigraphy and structure in part of the Coastal Plain of North Carolina [abs.] Elisha Mitchell Sci Soc Jour, v 76, no 2, p 186, Nov. 1960.

WILSON, William Harold

- 1-60. Petrology of the Wood River area, southern Absaroka Mountains, Park County, Wyoming [abs.] Dissert Abs, v 20, no 10, p 4081-4082, Apr. 1960.
- 2-60. Radioactive mineral deposits of Wyoming Wyoming Geol Survey Rept. Inv 7, 41 p., geol index map, Apr. 1960

WILSON, William Westfall. See SAWATZKY, Henry B 1-60, 2-60

WINCHELL, Horace

- 1-60. (and TILLING, Robert Ingersoll) Regressions of physical properties on the compositions of clinopyroxenes--[Pt ] 1, Lattice constants Am. Jour. Sci., v 258, no 8, p 529-547 incl. diagram and tables, Oct. 1960.
- 2-60 Regressions of physical properties on the composition of clinopyroxene--[Pt.] 2, Optical properties and specific gravity [abs ] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 2004-2005, Dec 1960

WINCHESTER, John Widmer

- 1-60. (and CROCKET, James Harvie) Study of the dilute solid solution  $\text{ZnCO}_3$  in  $\text{CaCO}_3$  by radiotracer techniques [abs ] Jour. Geophys Research, v. 65, no. 8, p 2533, Aug. 1960
- 2-60. Radioactivation analysis in inorganic geochemistry, in Progress in inorganic chemistry, V. 2, Cotton, F. A., ed New York, N Y., Intersci. Pubs., Inc., p. 1-32, tables, 1960

WINDER, Charles Gordon

- 1-60. Paleogeological interpretation of Middle Ordovician stratigraphy in southern Ontario, Canada Internat. Geol. Cong, 21st, Copenhagen, 1960, Rept., pt 7, p. 18-27 incl sketch map and diagrams, 1960.

WINFREY, Walter Michael, Jr.

- 1-60. Stratigraphy, correlation, and oil potential of the Sheep Pass formation, east-central Nevada, in Geology of east central Nevada Intermountain Assoc Petroleum Geologists, 11th Ann. Field Conf, 1960 Guidebook, p. 126-133 incl. sketch maps and sections, 1960

WINKLER, Erhard Mario

- 1-60. Post-Pleistocene ostracodes of Lake Nipissing age [Michigan] Jour. Paleontology, v 34, no. 5, p. 923-932, illus., Sept. 1960.
- 2-60 Interpretation of glacial drift from infrared films Photogramm. Eng, v. 26, no 5, p. 773, Dec 1960.

WINSLOW, Allen George

- 1-60. (and WOOD, Leonard Alton) Relation of land subsidence to groundwater withdrawals in the upper Gulf Coast region, Texas Am. Inst. Mining, Metall., and Petroleum Engineers Trans. 1959, v. 214, p. 1030-1034, illus., 1960

WINSLOW, John Durfee. See also WARRICK, R. E. 1-60

- 1-60. Hydrogeology of the Middle Branch Valley near Canton, Ohio [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 2005, Dec. 1960
- 2-60. Preliminary engineering geology report of dam sites on the east fork of the Muscatatuck River in Scott, Jennings, and Jefferson Counties, Indiana Indiana Geol. Survey Rept. Prog. 20, 30 p., illus. incl. geol. map, Sept. 1960
- 3-60. (and GATES, Gary Rickey, and MELHORN, Wilton Newton) Engineering geology of dam site and spillway areas for the Monroe Reservoir, southern Indiana Indiana Geol. Survey Rept. Prog. 19, 19 p., illus. incl. geol. map, July 1960

WINTERER, Edward Litton

- 1-60. (and MURPHY, Michael A.) Silurian reef complex and associated facies, central Nevada Jour. Geology, v. 68, no. 2, p. 117-139 incl. geol. maps, sketch map, and sections, illus., Mar. 1960

WINTERS, Harold Abraham

- 1-60. The late Pleistocene geomorphology of the Jamestown area, North Dakota [abs.] Dissert. Abs., v. 21, no. 6, p. 1521-1522, Dec. 1960.

WISCONSIN UNIVERSITY, Agricultural Experiment Station

- 1-60. Soils of the north central region of the United States--Their characteristics, classification Wisconsin Univ. Agr. Expt. Sta. Bull. 544, 192 p. incl. sketch and geol. sketch maps, diagrams, tables, and illus., June 1960.

WISE, Charles D. See KORNICKER, Louis S. 3-60

WISE, Donald Underkofler. See also CLOOS, Ernst 1-60, GRAY, Carlyle 2-60, PENNSYLVANIA GEOLOGISTS 1-60

- 1-60. An introduction to some tectonic and structural problems of the Appalachian Piedmont along the Susquehanna River, in Some tectonic and structural problems of the Appalachian Piedmont along the Susquehanna River Pennsylvania Geologists, 25th Ann. Field Conf., Oct. 1960, Guidebook, p. 1-9 incl. sketch map, 1960
- 2-60. The Pequea "silver" mine, in Some tectonic and structural problems of the Appalachian Piedmont along the Susquehanna River Pennsylvania Geologists, 25th Ann. Field Conf., Oct. 1960, Guidebook, p. 53-59 incl. diagram, geol. sketch maps, 1960
- 3-60. Williamson's Park--late stage shearing and higher order "S" surfaces, in Some tectonic and structural problems of the Appalachian Piedmont along the Susquehanna River Pennsylvania Geologists, 25th Ann. Field Conf., Oct. 1960, Guidebook, p. 60-63, sketch map, 1960
- 4-60. Oyster Point quarry, in Some tectonic and structural problems of the Appalachian Piedmont along the Susquehanna River Pennsylvania Geologists, 25th Ann. Field Conf., Oct. 1960, Guidebook, p. 64-67, 1960.
- 5-60. Chickies Rock, in Some tectonic and structural problems of the Appalachian Piedmont along the Susquehanna River Pennsylvania Geologists, 25th Ann. Field Conf., Oct. 1960, Guidebook, p. 68-75, diagrams and illus., 1960
- 6-60. Rheems quarry, in Some tectonic and structural problems of the Appalachian Piedmont along the Susquehanna River Pennsylvania Geologists, 25th Ann. Field Conf., Oct. 1960, Guidebook, p. 76-83 incl. diagrams, geol. sketch map, 1960

WISEMAN, J. D. H. See HEEZEN, Bruce Charles 1-60

WISSER, Edward Hollister

- 1-60. Relation of ore deposition to doming in the North American Cordillera Geol. Soc. America Mem. 77, 117 p., illus., 1960

WITHERSPOON, Paul A.

- 1-60. (and MUNIR, Zuhair A.) Size and shape of asphaltic particles in petroleum Producers Monthly, v. 24, no. 10, p. 20-24, 26-31 incl. diagrams, tables, and illus., Aug. 1960

## WITHINGTON

WITHINGTON, Charles Francis

- 1-60. (and JASTER, Marion Charlotte) Selected annotated bibliography of gypsum and anhydrite in the United States and Puerto Rico U S. Geol. Survey Bull 1105, 126 p, 1960.

WITKIND, Irving Jerome

- 1-60 Hebgen Lake, Montana, earthquake of August 17, 1959 [abs.] Am Assoc. Petroleum Geologists Bull, v. 44, no 6, p 962, June 1960
- 2-60 (and HEMPHILL, William Ross, and PILLMORE, Charles Lee, and MORRIS, Robert Hamilton) Isopach mapping by photogeologic methods as an aid in the location of swales and channels in the Monument Valley area, Arizona U S. Geol. Survey Bull. 1043-D, p. 57-85 incl. index and isopach maps, section, diagrams, and illus., 1960.
- 3-60 The Hebgen Lake, Montana, earthquake of August 17, 1959, in West Yellowstone--Earthquake area Billings Geol. Soc, 11th Ann. Field Conf, Sept 1960, [Guidebook] p 31-44 incl. index map, diagrams, section, and illus, 1960.
- 4-60 The Hebgen Lake, Montana, earthquake of August 17, 1959 [abs.] Am. Assoc. Petroleum Geologists Rocky Mtn Sec. Geol Record 1960, p. 165 [1960]

WITTERS, Juanita See GOLDSMITH, J. R. 3-60

WOLCOTT, Don E.

- 1-60 (and GOTT, Garland Bayard) Stratigraphy of the Inyan Kara group in the southern Black Hills, South Dakota and Wyoming [abs.] Geol Soc America Bull., v. 71, no. 12, pt. 2, p 2043, Dec 1960

WOLDSTEDT, Paul

- 1-60. Alte Strandlinien des Pleistozäns in Nordamerika und Europa Eiszeitalter u Gegenwart, Band 11, p. 12-19 incl. sketch map, table, and English abs, Dec 15, 1960
- 2-60 Mississippi und Rhein--Ein geologischer Vergleich Eiszeitalter u. Gegenwart, Band 11, p. 31-38 incl diagrams, tables, and English abs, Dec 15, 1960.
- 3-60 Die Letzte Eiszeit in Nordamerika und Europa Eiszeitalter u Gegenwart, Band 11, p 148-165 incl. diagrams and English abs., Dec. 15, 1960

WOLF, Donald D. See SUTTON, Felix 2-60

WOLF, Karl H

- 1-60. Simplified limestone classification Am Assoc Petroleum Geologists Bull, v. 44, no 8, p. 1414-1416 incl. table, and illus., Aug 1960.
- 2-60. Comments on "Small scale cross-lamination in limestones" Jour. Sed Petrology, v. 30, no. 3, p. 497-498, Sept. 1960 (Discussion of paper by J W. Harbaugh, v 29, no. 1, p 30-37, Mar 1959.)
- 3-60 (and WARNE, Slade St J) Remarks on the application of Friedman's staining methods Jour. Sed. Petrology, v. 30, no 3, p. 496-497, Sept 1960. (Discussion of paper by G M. Friedman, v 29, no. 1, p. 87-97, Mar 1959)

WOLFE, Caleb Wroe

- 1-60. Crystal synthesis by refrigeration Am Mineralogist, v 45, nos. 11-12, p. 1211-1220 incl illus., Nov -Dec. 1960
- 2-60. (and VILKS, Irita) Pseudomorphes after datolite, prehnite and apophyllite from East Granby, Connecticut Am. Mineralogist, v. 45, nos 3-4, p. 443-447 incl. diagrams and illus, Mar -Apr 1960
- 3-60. Volume change forces in geologic processes Internat Geol. Cong., 21st, Copenhagen, 1960, Rept, pt. 18, p. 287-294 incl. diagrams and illus, 1960.
- 4-60. Stratigraphy and general geology, Rangeley to Phillips, Maine, Trip B in Field trips in west-central Maine New England Intercollegiate Geol Conf, 52d Ann Mtg., Oct. 1960, Guidebook, p. 9-17 incl. sketch maps, 1960.
- 5-60 (and SWARZENSKI, Wolfgang V.) The tectonic significance of the erosion surfaces in northwestern Maine Zeitschr Geomorphologie, Neue Folge (Berlin), Band 4, Heft 1, p. 53-68 incl sketch map diagrams, profiles, and illus, Feb. 1960.

WOLFE, Jack A

1-60. (and BARGHOORN, Elso Sterrenberg) Generic change in Tertiary floras in relation to age Am. Jour. Sci., v 258-A (Bradley Volume), p. 388-399 incl. diagrams and table, 1960

2-60. Stratigraphy and paleobotany of the western Cascades of Oregon [abs.] [abs.] Geol. Soc. America Bull., v. 71, no 12, pt 2, p 2084, Dec. 1960.

WOLFF, Gunther Arthur

1-60. (and BRODER, J. D.) Cleavage and the identification of minerals Am Mineralogist, v 45, nos. 11-12, p 1230-1242 incl diagrams and illus., Nov.-Dec. 1960.

WOLFSON, Sumner H. See HAWKINS, Gerald Stanley 2-60

WOLHUTER, L. E.

1-60. Preliminary report on the southeast quarter of Lévy township, Abitibi-East electoral district Quebec Dept. Mines Mineral Deposits Br Prelim. Rept 434, 11 p., geol map, 1960, also French ed

WOLLENZIEN, Thomas P.

1-60. Gypsum deposits adjacent to the Great Northern Railway in central Montana [abs.] Mining Eng., v. 12, no 10, p 1056, Oct. 1960.

WOLMAN, Markley Gordon See also BRUSH, L. M., Jr 1-60, LEOPOLD, L. B 1-60, 2-60

1-60. (and MILLER, John Preston) Magnitude and frequency of forces in geomorphic processes Jour Geology, v. 68, no 1, p 54-74 incl diagrams and tables, Jan. 1960

2-60 Erosion and sedimentation Am Geophys Union Trans., v. 41, no 2, p 301-305, June 1960.

WONES, David R

1-60. Hydrogen as a component in biotite phase equilibria [abs.] Geol. Soc. America Bull., v 71, no. 12, pt 2, p. 2006, Dec. 1960

WONG, H. D.

1-60. A simplified method of optic sign determination with the acute bisectrix figure [abs.] South Dakota Acad Sci Proc. 1959, v 38, p 59, Jan 1960.

2-60 Geology of the Alexandria quadrangle, South Dakota South Dakota Geol. Survey [Geol Map], scale 1:62,500 (about 1 in. to 1 mi.), with text, 1960

WOOD, Albert Elmer. See BURT, Alvin M 1-60

WOOD, Darwin Lewis

1-60. Infrared absorption of defects in quartz, in Symposium on defect structure of quartz and glassy silica. Physics and Chemistry Solids, v. 13, nos 3-4, p. 326-336, illus., June 1960.

WOOD, Gordon Harry, Jr See ARNDT, Harold Harry 1-60

WOOD, Harold A.

1-60 Wave transport of beach materials on Long Point, Lake Erie [Ontario] Canadian Geographer, no. 16, p 27-35, illus., July 1960.

WOOD, Horace Elmer, 2d

1-60. Eight historic fossil mammal specimens in the Museum of Comparative Zoology Harvard Coll. Mus. Comp Zoology Bull., v. 123, no 3, p 85-110, illus., Sept 1960.

WOOD, John Armstead, Jr.

1-60. Silicate meteorite structures and the origin of the meteorites [abs.] Massachusetts Inst Technology Abs Theses 1958-59, p 176-177, 1960.

## WOOD

WOOD, Joseph Miller

- 1-60 The flora of the Lower Block coal of Greene County, Indiana [abs ]  
Dissert. Abs., v 21, no 3, p. 440, Sept. 1960

WOOD, Leonard Alton See WINSLOW, Allen George 1-60

WOOD, Leonard Eugene

- 1-60. Bottom sediments of Saginaw Bay, Michigan [abs ] Dissert. Abs.,  
v 21, no. 1, p 172-173, July 1960

WOOD, Paul Alan

- 1-60. Paleontological investigations in the 111 Ranch area Arizona Geol. Soc.  
Digest, v 3, p 141-143, Mar 1960.

WOOD, Perry Rowley

- 1-60. Geology and ground-water features of the Butte Valley region, Siskiyou  
County, California U. S. Geol. Survey Water-Supply Paper 1491, 150 p ,  
illus. incl. geol. map, 1960.

WOOD, Robert S. See GOOCH, Edwin Octavius 1-60

WOODARD, Farrell Wayne

- 1-60 Red Canyon fault, Hebgen Lake, Montana, earthquake, August 17,  
1959, in West Yellowstone--Earthquake area Billings Geol. Soc , 11th  
Ann. Field Conf , Sept. 1960, [Guidebook] p 49-55 incl illus , 1960

WOODCOCK, J. R.

- 1-60 Geology of the Richmond Gulf area, New Quebec Geol. Assoc Canada  
Proc., v. 12, p. 21-39, illus. incl. geol. map, Dec. 1960

WOODFORD, Alfred Oswald

- 1-60. Bedrock patterns and strike-slip faulting in southwestern California  
Am. Jour. Sci , v. 258-A (Bradley Volume), p 400-417 incl geol map, 1960.

WOODHOUSE, Charles Douglas. See NORRIS, Robert Matheson 2-60

WOODRING, Wendell Phillips

- 1-60. Wilmot Hyde Bradley--Geologist, geomorphologist, paleolimnologist,  
paleontologist, administrator Am Jour. Sci , v. 258-A (Bradley Volume),  
p 1-5, portrait, 1960.  
2-60. Oligocene and Miocene in the Caribbean region Caribbean Geol. Conf.,  
2d, Mayagüez, Puerto Rico, Jan. 4-9, 1959, Trans., p. 27-32 incl correla-  
tion chart, with discussion, 1960.  
3-60. Panamá, in Internat. Geol. Cong. Strat. Comm., Lexique stratigraphi-  
que international--V 5, Amérique Latine--Fasc. 2a, Amérique Centrale  
Paris, Centre Natl. Recherche Sci., p 307-357, geol map, 1960.

WOODSIDE, K. H. See ORMSBY, Walter Clayton 3-60

WOODSIDE, William

- 1-60. (and MESSMER, Joseph Herman) Molecular effects in heat conduc-  
tion through porous rocks Jour Geophys. Research, v 65, no. 10, p 3481-  
3485 incl. diagrams, Oct. 1960.

WOODTLI, Robert A. See HOWELL, Benjamin Franklin, Jr. 1-60

WOODWARD, Herbert Preston

- 1-60 Reappraisal of Appalachian geology [abs ] Geol. Soc. America Bull ,  
v 71, no. 12, pt. 2, p. 2115, Dec 1960.

WOODWARD, Thomas Canby

- 1-60. Willow Creek gas field, in Overthrust belt of southwestern Wyoming  
and adjacent areas Wyoming Geol. Assoc , 15th Ann. Field Conf., 1960,  
Guidebook, p 217-220 incl. structure contour maps, 1960.

WOOLF, Donald Oliver

- 1-60. The identification of rock types Revised ed., Washington, D. C.,  
U S Bur. Public Roads 17 p , illus., Nov 1960, originally published  
June 1950.

WOOLLARD, George Prior See also BONINI, W. E. 1-60, MEYER, R. P. 1-  
60, POOLEY, R. N. 1-60, STEINHART, J S 1-60

- 1-60. (and others) Gravity anomalies, crustal structure, and geology in  
Alaska Jour. Geophys. Research, v 65, no 3, p 1021-1037 incl index map,  
sections, diagrams, and tables, gravity map, Mar 1960  
2-60. Crustal structure in the United States from a study of gravity and  
seismic data [abs.] Science, v. 131, no. 3409, p 1322, Apr. 29, 1960.  
3-60. The relation between isostatic gravity anomalies, crustal structure,  
and composition in the United States [abs.] Jour Geophys Research,  
v 65, no 8, p. 2533-2534, Aug 1960.  
4-60 Current developments in seismological research Am. Geophys.  
Union Trans., v 41, no. 2, p. 155-157, June 1960

WOLLEBEN, James A. See MURRAY, Grover Elmer 1-60, 3-60

WOOLLEN, A. E See MORRIS, James Mervyn, Jr. 1-60

WOOLLEY, William C. See MUSGRAVE, Albert Wayne 1-60

WOOLVERTON, Ralph S.

- 1-60 Geology of the Lumby Lake area Ontario Dept. Mines [Ann. Rept.]  
1960, v 69, pt. 5, 52 p , illus incl. geol. maps, 1960

WORCESTER, Philip George

- 1-60. Memorial to Walter Carl Toepelman (1894-1958) Geol Soc America  
Proc 1959, p. 159-160, portrait, Oct 1960

WORDEN, John A.

- 1-60. Pre-Desmoinesian isopachous and paleogeologic studies of the Ama-  
rillo-Hugoton area Shale Shaker, v 10, no 9, p 2-24, 26-28 incl. index  
and sketch maps, sections, and discussion by J. Janovy and W. E. McMurtry,  
May 1960

WORLD OIL

- 1-60 Magnetic orientation of cores aids oil search World Oil, v. 150, no. 5,  
p 112-113 incl. diagrams and illus., Apr 1960  
2-60 The Carolinas, offshore areas are main hope World Oil, v 150,  
no 7, p. 108-110 incl sketch map, section, diagrams, and table, June 1960.

WORLD PETROLEUM

- 1-60. New tools for the geophysicist World Petroleum, v 31, no 3, p 48-  
55, 60, 62, 64, 66, 70 incl sketch maps, diagrams, table, and illus., Mar.  
1960  
2-60. Proposed new pipeline to stimulate British Columbia crude search  
World Petroleum, v 31, no 5, p 66-67 incl. sketch map, May 1960

WORZEL, John Lamar. See also SUTTON, G H 2-60, TALWANI, Manik 2-  
60

- 1-60 (and TALWANI, Manik) Gravity measurements on continental mar-  
gins [abs.] Am Assoc Petroleum Geologists Bull., v. 44, no. 7, p. 1260,  
July 1960

WOSINSKI, Jean A. See HAHN, Glenn Walter 1-60

WRAY, John Lee

- 1-60. (and KONISHI, Kenji) Pennsylvanian and Permian codiacean algae  
[abs.] Geol Soc America Bull , v 71, no. 12, pt. 2, p 2006, Dec. 1960.

WRIGHT, Charles. See DUFFUS, Henry John 1-60

WRIGHT, Grant MacLachlan See LOWDON, James Alexander 1-60

## WRIGHT

WRIGHT, Harold Douglas. See also BIELER, B. H. 1-60

1-60. An optical study of talc-tremolite relations. *Am. Ceramic Soc. Jour.*, v. 43, no. 1, p. 42-43 incl. diagram and table, Jan. 1, 1960

2-60. (and BIELER, Barrie H.) Primary mineralization of uranium-bearing "siliceous reef" veins in the Boulder batholith, Montana--Pt. 1, The host rocks. *Econ. Geology*, v. 55, no. 1, p. 56-72 incl. block diagram and tables, Jan.-Feb. 1960.

3-60. (and SMITH, Chester Martin, Jr., and HUTTA, Josef J.) Role of trace amounts of uranium in some base metal sulfides from vein deposits. *Internat. Geol. Cong.*, 21st, Copenhagen, 1960, Rept., pt. 16, p. 248-260 incl. tables, 1960.

WRIGHT, James Clifton. See WHITE, Walter Stanley 1-60, 3-60

WRIGHT, J. D.

1-60. (and OLDALE, Harry R.) Beryllium pegmatites of southwestern Nova Scotia. *Canadian Mining Jour.*, v. 81, no. 4, p. 87-90 incl. geol. sketch maps, Apr. 1960.

WRIGHT, Lauren Albert. See ENGEL, Albert Edward John 3-60, JAHNS, R. H. 2-60

WRIGHT, Lawrence Boynton

1-60. Southern Pacific's geologists find 132,000,000 tons low grade iron ore [Nevada]. *Mining World*, v. 22, no. 3, p. 26-31 incl. index, geol. and other sketch maps, diagram, tables, and illus., Mar. 1960

WRIGHT, Martin

1-60. [United States] Bibliography--Geomorphology, in *Bibliography, 1955-1958*, *Internat. Geog. Union Comm. Coastal Sedimentation*. Louisiana State Univ. Coastal Studies Inst. Contr. 60-2, p. 115-128, June 1, 1960.

WRIGHT, Marshall S., Jr.

1-60. Photogeology giving rapid coverage in Four Corners. *World Oil*, v. 150, no. 2, p. 104-107 incl. geol. map and illus., Feb. 1, 1960.

WRIGHT, Robert James

1-60. (and EVERHART, Donald Lough) Uranium, Chap. 5 in *Mineral resources of Colorado*, 1st sequel. Denver, Colorado Mineral Resources Board, p. 327-365 incl. index and geol. sketch maps, sections, and diagrams, also geol. map, 1960

WRIGHT, Thomas L. See EUGSTER, Hans Peter 1-60

WRIGHT-BROUGHTON, C.

1-60. Photogeological interpretation and compilation, Exshaw-Golden [Alberta-British Columbia]. *Alberta Soc. Petroleum Geologists Map*, 2 sheets, scale about 1 in. to 2 mi., May 1960.

WRIGLEY, Gladys M.

1-60. James Edward Church [1869-1959]. *Geog. Rev.*, v. 50, no. 4, p. 594-595, Oct. 1960.

WU, Tien Hsing

1-60. Geotechnical properties of glacial lake clays. *Am. Soc. Civil Engineers Trans* 1960, v. 125, pt. 1, p. 994-1021, illus., with discussion by T. C. Kenney and reply by author, slightly revised 1960, originally published 1958.

WUENSCH, Bernhardt John

1-60. The crystallography of mcgovernite, a complex arsenosilicate. *Am. Mineralogist*, v. 45, nos. 9-10, p. 937-945 incl. table and illus., Sept.-Oct. 1960.

2-60. Crystallography of mcgovernite and dixenite, two complex arsenosilicates [abs.]. *Geol. Soc. America Bull.*, v. 71, no. 12, pt. 2, p. 2007, Dec. 1960.



WUENSCHHEL, Paul Clarence

- 1-60. Seismogram synthesis including multiples and transmission coefficients Geophysics, v. 25, no. 1, p. 106-129 incl diagrams and charts, Feb 1960

WURMAN, E.

- 1-60. Pedogenic and petrogenic characteristics of soil profiles developed in silt-mantled acid shale [Wis.] Soil Sci, v 90, no 6, p 348-356 incl. geol sketch map, tables, and illus, Dec 1960
- 2-60. A mineralogical study of a gray-brown podzolic soil in Wisconsin derived from glauconitic sandstone Soil Sci., v, 89, no 1, p 38-44 incl. sketch map, section, diagrams, and tables, Jan 1960

WYCKOFF, Jerome

- 1-60. The story of geology--Our changing earth through the ages New York, N. Y, Golden Press, 177 p, illus., 1960

WYLLIE, Malcolm Robert Jesse

- 1-60. Log interpretation in sandstone reservoirs Geophysics, v 25, no 4, p 748-778 incl. diagrams and tables, Aug. 1960, discussion by de Witte, L., with reply by author, v 26, no 1, p 101-102, Feb 1961

WYLLIE, Peter John

- 1-60. (and TUTTLE, Orville Frank) Experimental investigation of silicate systems containing two volatile components--Pt. 1, Geometrical considerations Am Jour Sci., v. 258, no. 7, p 498-517 incl. diagrams, Summer 1960
- 2-60. (and TUTTLE, Orville Frank) Experimental verification for the magmatic origin of carbonatites Internat. Geol Cong, 21st, Copenhagen, 1960, Rept., pt 13, p. 310-318 incl diagrams, 1960
- 3-60. (and TUTTLE, Orville Frank) Melting in the earth's crust Internat Geol Cong., 21st, Copenhagen, 1960, Rept., pt 18, p 227-235 incl diagrams, 1960.
- 4-60. (and TUTTLE, Orville Frank) The system CaO-CO<sub>2</sub>-H<sub>2</sub>O and the origin of carbonatites Jour. Petrology (Oxford, England), v 1, no. 1, p. 1-46 incl. diagrams and tables, Feb 1960

WYMAN, Richard V

- 1-60. Comments regarding ore genesis at Silver Reef, Utah Econ Geology, v 55, no 4, p. 835-839, June-July 1960.

WYNN, Lester Lee

- 1-60. Simpson group of south-central Kansas [abs ] Am. Assoc. Petroleum Geologists Bull., v. 44, no 1, p. 131, Jan. 1960

WYNNE-EDWARDS, Hugh Robert. See CANADA GEOL SURVEY 34-60

WYOMING GEOLOGICAL ASSOCIATION

- 1-60. (McGOOKEY, Donald Paul, and MILLER, Daniel Newton, Jr., editors) Overthrust belt of southwestern Wyoming and adjacent areas [Idaho-Utah], 15th annual field conference, 1960, guidebook Casper, Wyoming Geol. Assoc, 285 p. incl index and sketch maps, diagrams, tables, and illus., also geol map, sections, and charts, 1960. Includes individual papers which are cited separately.

WYRICK, Granville Glenn

- 1-60. Geochemical methods for defining ground-water flow [abs ]. Geol. Soc America Bull, v 71, no. 12, pt. 2, p. 2029, Dec. 1960
- 2-60 The ground-water resources of Volusia County, Florida Florida Geol. Survey Rept. Inv. 22, 65 p, illus., 1960

YAGER, Charles E

- 1-60. David Patrick Donoghue (1891-1958) Am. Assoc. Petroleum Geologists Bull., v 44, no. 5, p. 641-642 incl portrait, May 1960

# YALKOVSKY

YALKOVSKY, Ralph. See also HEEZEN, B C. 1-60

1-60. A suggested program to meet the critical need for teachers Jour. Geol Education, v. 8, no 1, p. 6-8, spring 1960

YAMAGUCHI, Goro

1-60. (and SAKAMOTO, K.) The identity of bayerite-a and bayerite-b Canadian Jour. Chemistry, v 38, no. 8, p. 1395-1396 incl. diagrams and table, illus., Aug. 1960

YANG, Julie Chi-Sun

1-60. The system magnesia-silica-water below 300°C.--[Pt.] 1, Low-temperature phases from 100° to 300°C and their properties Am. Ceramic Soc. Jour., v 43, no. 10, p. 542-549 incl. diagrams, tables, and illus., Oct. 1, 1960.

YATES, Robert Giertz

1-60. (and FORD, A E.) Preliminary geologic map of the Deep Lake quadrangle, Stevens and Pend Oreille Counties, Washington U S Geol. Survey Mineral Inv. Field Studies Map MF-237, scale 1 24,000 (1 in. to 2,000 ft.), with sections, 1960.

YBARRA, R. A.

1-60. (and DOSCH, Murray W., and STOCKTON, A. D ) East Coyote oil field California Oil Fields--Summ. Operations Jan.-June 1960, v. 46, no 1, p 70-76, illus., 1960

YEATS, Vestal Lierly

1-60 Upheaval Dome [Utah] Compass, v. 37, no. 4, p 269-277 incl geol. and aeromagnetic maps, section, and illus., May 1960

YEDLOSKY, Robert J.

1-60. A petrographic study of sandstones to determine their suitability for sub-base and base course construction West Virginia Acad Sci. Proc. 1960, v. 32, p 167, Dec. 1960.

2-60 Alcohol absorption test for relative effective porosity [abs.] West Virginia Acad Sci. Proc. 1959, v 31, p 56, Dec 1960.

YEHLE, Lynn Alois See NICHOLS, Donald R. 2-60

YINGST, Parke O

1-60. Coking properties of Rocky Mountain coals [abs.] Geol. Soc America Bull., v 71, no. 12, pt. 2, p 2007, Dec 1960.

2-60. Coal, Chap. 11 in Mineral resources of Colorado, 1st sequel Denver, Colorado Mineral Resources Board, p 463-486 incl. diagrams, also index map, 1960

3-60. Coal resources of Colorado Colorado School Mines Mineral Industries Bull., v. 3, no 5, p 1-8, illus., Sept 1960

YOCHELSON, Ellis Leon. See also BOUCOT, A J. 4-60, KNIGHT, J B 1-60, 2-60, 3-60

1-60. Status of paleontology [abs.] Geol. Soc America Bull., v 71, no 12, pt 2, p 2116, Dec. 1960

2-60 Bellerophonacea and Patellacea, [Pt.] 3 of Permian Gastropoda of the southwestern United States with notes on Pennsylvanian Bellerophon area Am Mus. Nat. History Bull., v. 119, art 4, p 207-294, illus., June 30, 1960

3-60 (and DUTRO, John Thomas, Jr.) Late Paleozoic Gastropoda from northern Alaska U. S. Geol Survey Prof. Paper 334-D, p 111-147, illus., 1960

YODER, Hatten Schuyler, Jr. See also SCHAIRER, J F 1-60, SCHREYER, W F. 1-60

1-60. (and WEIR, Charles Edward) High-pressure form of analcite and free energy change with pressure of analcite reactions Am. Jour Sci., v. 258-A (Bradley Volume), p. 420-433 incl. diagrams and tables, 1960.

YOE, John H See MILLER, Dwight O. 1-60

YON, J William, Jr. See GOODELL, Horace Grant 1-60

YONG, Raymond N Y. See also LAMBE, T W 1-60

1-60. (and WARKENTIN, B P.) A physico-chemical analysis of high swelling clays subject to loading Cong Panam Mecánica Suelos y Cimentaciones, 1st, México, D F, Sept 7-12, 1959, Mem, v 2, p 865-888 incl. diagrams, illus., and Spanish abs, 1960

YONGE, C M

1-60. General characters of Mollusca, in Joint Comm Invertebrate Paleontology, Treatise on invertebrate paleontology--Pt I, Mollusca 1 Lawrence, Kans., Geol Soc America and Univ Kansas Press, p I3-I36 incl. diagrams and illus, 1960

YOUNG, Addison

1-60. Paleozoic history of the Fort Stockton-Del Rio region, west Texas, in Texas Univ Bur. Econ Geology, Aspects of the geology of Texas--A symposium Texas Univ. Pub 6017, p 87-109, illus, Sept. 1, 1960

YOUNG, B. G.

1-60. (and THODE, Henry George) Absolute yields of the xenon and krypton isotopes in  $U^{238}$  spontaneous fission Canadian Jour Physics, v. 38, no 1, p. 1-9 incl. diagrams and tables, Jan. 1960

YOUNG, David Marion

1-60. Virginia, Appalachian rim is likely area World Oil, v 150, no. 7, p 104-105 incl sketch map, June 1960

YOUNG, Edward Joseph See also ALTSCHULER, Z S 1-60, GUDE, A J., 3d 1-60

1-60. (and POWERS, Howard Adorno) Chevkinite in volcanic ash Am. Mineralogist, v 45, nos. 7-8, p. 875-881 incl. tables and illus, July-Aug. 1960.

2-60. Studies of trace elements in sediments [abs] Massachusetts Inst. Technology Abs. Theses 1953-54, p. 98, 1960

YOUNG, John Cannon

1-60. Structure and stratigraphy in north central Schell Creek Range, in Geology of east central Nevada Intermountain Assoc. Petroleum Geologists, 11th Ann. Field Conf, 1960 Guidebook, p. 158-172 incl geol. sketch map, and stratigraphic sections, structure sections, 1960

YOUNG, Keith Preston. See also NOYES, A. P, Jr. 1-60, SCHLAUDT, C. M. 1-60

1-60. Biostratigraphy and the new paleontology Jour. Paleontology, v 34, no 2, p. 347-358, Mar 1960.

2-60. Later Cretaceous ammonite successions of the Gulf Coast of the United States Internat. Geol. Cong, 21st, Copenhagen, 1960, Rept., pt. 21, p 251-260 incl. chart, 1960.

3-60. Index fossils of the Trans-Pecos area [Texas], in Geology of the Chittim Arch and the area north to the Pecos River Corpus Christi Geol Soc., 10th Ann Field Trip, Apr. 1960, [Guidebook] p 42-47, illus., reprinted 1960, originally published 1959

YOUNG, L. M.

1-60 (and MANKIN, Charles John) Impregnation of sands with "Bio-Plastic" for grain orientation studies Oklahoma Geology Notes, v 20, no. 10, p. 266-267, Oct. 1960

YOUNG, Richard A.

1-60 Ground water areas and well logs, central Sevier Valley, Utah Salt Lake City, Utah State Engineer's Office, 20 p incl. table, index map, Sept. 1960.

## YOUNG

YOUNG, Robert Glen

- 1-60. Dakota group of Colorado Plateau Am Assoc. Petroleum Geologists Bull , v 44, no. 2, p 156-194 incl. index map, sketch and isopach maps, sections, diagram, chart, table, and illus , Feb. 1960, discussions by several authors, v. 45, no. 9, p 1582-1590 incl. illus , Sept. 1961
- 2-60. Mancos shale and Mesaverde group of Palisade area, in Rocky Mtn. Assoc Geologists, Guide to the geology of Colorado Denver, p 85-86 incl section, 1960

YOUNG, Roland Stansfield

- 1-60 (editor) Cobalt--Its chemistry, metallurgy, and uses New York, N. Y., Reinhold Publishing Corp , 424 p incl tables and diagrams, 1960.

YOUNG, Thomas R See SMITH, Fred L. 1-60

YOUNG, William Lee

- 1-60. Geology of the Bennett-Tanner area Ontario Dept. Mines [Ann. Rept ] 1960, v. 69, pt. 4, 17 p., illus. incl. geol. map, 1960.

YUND, Richard Allen. See also KULLERUD, Gunnar 2-60

- 1-60 (and KULLERUD, Gunnar) System Cu-Fe-S at 700° C. [abs ] Geol. Soc America Bull., v 71, no. 12, pt. 2, p. 2007-2008, Dec 1960.
- 2-60. The system Ni-As-S [abs.] Dissert. Abs , v 20, no. 12, p. 4636, June 1960.

ZABLOCKI, Charles Joseph

- 1-60. Measurements of electrical properties of rocks in southeast Missouri Art. 94 in U.S. Geol Survey Prof. Paper 400-B, p B214-B216 incl. logs and table, 1960

ZACHER, Edwin G. See STEINBRUGGE, Karl V 4-60

ZAHRINGER, J. See FECHTIG, H 1-60, GENTNER, W. 1-60

ZAJAC, Steve See STUBBINS, John B. 1-60

ZANDLE, Gerald L. See BROMERY, Randolph Wilson 3-60, 26-60

ZANGERL, Rainer

- 1-60. (and SLOAN, Robert Evan) A new specimen of *Desmatochelys lowi* Williston--A primitive chelonid sea turtle from the Cretaceous of South Dakota Fieldiana Geology, v. 14, no 2, p. 7-40, illus., Sept. 26, 1960
- 2-60. The vertebrate fauna of the Selma formation of Alabama--Pt. 5, An advanced chelonid sea turtle Fieldiana Geology Mem., v. 3, nos. 5-6, p. 281-312, illus., Aug. 19, 1960.

ZANS, Verners Aleksandrs, 1904-1961

- 1-60. Recent coral reefs and reef environments of Jamaica Caribbean Geol. Conf., 2d, Mayagüez, Puerto Rico, Jan. 4-9, 1959, Trans , p. 58, with discussion, 1960, reprinted as Jamaica Geol. Survey Pub. 66, 1960
- 2-60. Recent geological work and mining developments in Jamaica--A brief review of the activities during the last decade Caribbean Geol Conf., 2d, Mayagüez, Puerto Rico, Jan 4-9, 1959, Trans., p 69-80, with discussion, 1960, reprinted as Jamaica Geol. Survey Pub. 68, 1960
- 3-60. God's Well and its origin Geonotes, v 3, pt 3, (Jamaica Geol Survey Pub. 63) p 98-105 incl. sketch map, diagram, and table, Oct. 1, 1960.
- 4-60. Discussion on the origin of bauxite associated with limestone Geonotes, v. 3, pt. 2 (Jamaica Geol Survey Pub 62), p. 71-72, July 1960

ZAPP, Alfred Dexter

- 1-60 (and COBBAN, William Aubrey) Some Late Cretaceous strand lines in northwestern Colorado and northeastern Utah Art. 112 in U. S. Geol. Survey Prof. Paper 400-B, p. B246-B249 incl. geol. sketch maps and sections, 1960.

ZAPPA, Theodore A

- 1-60. Alaska--The next big oil state? *Oil and Gas Jour*, v 58, no. 34, p. 128-131 incl. illus., Aug 22, 1960

ZARRELLA, W. M See also SCHRAYER, G. J. 1-60

- 1-60. (and HANSON, Wilham Ellum) Molecular-weight distribution in a petroleum asphaltene [abs.] *Geol. Soc. America Bull*, v 71, no. 12, pt 2, p 2008, Dec. 1960

ZECK, Wayne A See CARLISLE, Donald 1-60

ZEEVAERT, Leonardo. See GIBBS, Harold J. 1-60

ZEIGLER, John M

- 1-60 (and WHITNEY, Geoffrey G., Jr., and HAYES, Carlyle R.) Woods Hole Rapid Sediment Analyzer *Jour. Sed. Petrology*, v 30, no. 3, p 490-495 incl. diagrams, table, and illus., Sept 1960  
2-60. (and others) Discovery of Eocene sediments in subsurface of Cape Cod [Massachusetts] *Science*, v. 132, no. 3437, p 1397-1398 incl index map, Nov. 11, 1960.  
3-60. Beach studies in the Cape Cod area [Massachusetts] conducted during the period August 1953-April 1960 *Woods Hole Oceanog. Inst. Reference*, no 60-20, 29 p., illus., Apr. 1960

ZEITNER, June Culp

- 1-60 Rare gems of the Midwest *Earth Sci.*, v 13, no 2, p 58-62 incl. illus., Apr. 1960  
2-60. Fossil collecting and localities *Mineralogist*, v 28, nos. 4-5, p 58-60 incl illus., Apr.-May 1960  
3-60. Barite *Mineralogist*, v 28, nos. 11-12, p 208, 210, Nov -Dec 1960

ZELL, Raymond LeRoy

- 1-60. (and PATTERSON, John Robert) Paleozoic events related to development of the Sturgeon Lake atoll, Alberta [abs.] *Canadian Oil and Gas Industries*, v. 13, no 4, p 103-104, Apr. 1960.

ZELLER, Robert Allen, Jr.

- 1-60. Reef and associated facies of Horquilla limestone, Big Hatchet Mountains area, southwestern New Mexico, in Northern Franklin Mountains, southern San Andres Mountains, with emphasis on Pennsylvanian stratigraphy *Roswell Geol. Soc., Field Trip*, Nov. 1960, Guidebook, p. 49-156 incl index and geol sketch map, and sections, 1960.

ZEN, E-an See also CADY, W. M 1-60

- 1-60 Metamorphism of lower Paleozoic rocks in the vicinity of the Taconic Range in west-central Vermont *Am. Mineralogist*, v. 45, nos 1-2, p. 129-175 incl diagrams and tables, Jan.-Feb 1960  
2-60. Early stages of evaporite deposition Art. 209 in U. S. Geol Survey Prof. Paper 400-B, p B458-B461 incl. diagrams and table, 1960.  
3-60. Petrology of lower Paleozoic rocks from the slate belt of western Vermont *Internat. Geol. Cong.*, 21st, Copenhagen, 1960, Rept., pt. 13, p 362-371 incl index map and diagrams, 1960  
4-60. Time and space relationships of the Taconic rocks in western Vermont and eastern New York [abs.] *Geol. Soc. America Bull.*, v. 71, no. 12, pt. 2, p 2009, Dec 1960

ZIEGLER, Peter A.

- 1-60. Frühpaläozoische Tillite im östlichen Yukon-Territorium (Kanada) *Eclogae Geol. Helvetiae* 1959, v. 52, no. 2, p. 735-741 incl sketch map, graph, section, and illus., Basel, Switzerland, Jan. 29, 1960

ZIEGLER, Walter Heinrich

- 1-60. Die Überschiebung der "Castle Mountain Fault" zone, nördlich von Jasper, Alberta, Kanada *Eclogae Geol. Helvetiae* 1959, v. 52, no. 2, p. 743-750 incl chart, illus., and sections, geol and tectonic sketch maps, Basel, Switzerland, Jan. 29, 1960

## ZIEGLER

- 2-60. (and POCOCK, Stanley A. J.) The Minnes formation [Alberta-British Columbia], in Rock Lake Edmonton Geol. Soc., 2d Ann. Field Trip, Aug 1960, Guidebook, p. 43-71, illus., 1960.

ZIEMAND, Helmut W. See WARMAN, James C. 1-60

ZIES, Emanuel George

- 1-60. (and CHAYES, Felix) Pseudoleucite in a tinguaitite from the Bearpaw Mountains, Montana Jour. Petrology (Oxford, England), v. 1, no. 1, p. 86-98 incl. tables, illus., Feb 1960

ZIETZ, Isidore. See also ANDREASEN, G. E. 1-60, 2-60, GRANTZ, Arthur 1-60, KELLER, G. V. 3-60, KING, E. R. 1-60, 2-60

- 1-60. (and ANDREASEN, Gordon Ellsworth, and GRANTZ, Arthur) Regional aeromagnetic surveys of possible petroleum provinces in Alaska Art. 36 in U. S. Geol. Survey Prof. Paper 400-B, p. B75-B76 incl. index map, 1960.  
2-60. (and GRAY, Carlyle) Geophysical and geological interpretation of a Triassic structure in eastern Pennsylvania Art. 78 in U. S. Geol. Survey Prof. Paper 400-B, p. B174-B178 incl. aeromagnetic map and sections, 1960  
3-60. Configuration of the 10N pluton, Three Forks, Montana Art. 102 in U. S. Geol. Survey Prof. Paper 400-B, p. B229-B230 incl. aeromagnetic map and profiles, 1960.

ZIMMERLEY, Stuart R. See TUDDENHAM, William Marvin 2-60

ZIMMERMAN, Everett Alfred

- 1-60. Preliminary report on the geology and ground-water resources of northeastern Blaine County, Montana. Montana Bur. Mines and Geology Bull. 19, 19 p., illus. incl. geol. map, Nov. 1960.

ZIMMERMAN, J. Bernard

- 1-60. (and INGLES, John C.) Isolation of the rare earth elements--A chlorination-volatilization procedure Anal. Chemistry, v. 32, no. 2, p. 241-246 incl. diagram and tables, Feb. 1960, reprinted as Canada Dept. Mines and Tech. Surveys Mines Br. Research Rept. R 61, [6] p., Mar. 1960.

ZIMMERMAN, James A.

- 1-60 Pleistocene molluscan faunas of the Newell Lake deposit, Logan County, Ohio Ohio Jour. Sci., v. 60, no. 1, p. 13-39 incl. index map, sections, diagrams, and tables, Jan. 1960

ZINK, Marga. See ZINK, Robert 1-60

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- 1-60. (and ZINK, Marga) Basaltic volcanism [Idaho]--A story in pictures [Idaho] Arco, Idaho, Craters Moon Nat. History Assoc., 32 p. incl. illus., June 1960

ZOLTAI, Tibor

- 1-60. Classification of silicates and other minerals with tetrahedral structures. Am. Mineralogist, v. 45, nos. 9-10, p. 960-973 incl. tables, Sept.-Oct 1960  
2-60. (and BUERGER, Martin Julian) The relative energies of rings of tetrahedra Zeitschr. Kristallographie (Frankfurt am Main, Germany), Band 114, Heft 1-2, p. 1-8 incl. diagrams and table, with German abs., June 1960.  
3-60. The structure of coesite and the classification of tetrahedral structures [abs.] Massachusetts Inst. Technology Abs. Theses 1958-59, p. 177-179, 1960

ZONNEVELD, Jan I. S.

- 1-60. Een luchtfoto-onderzoek op de Benedenwindse Eilanden Koninkl. Nederlandsch Aardrijksk. Genoot. Tijdschr. (Amsterdam), 2e reeks, deel 77, no. 4, p. 389-400, illus., with English summary, Oct. 1960.

ZOPPIS BRACCI, Luigi. See also HOFFSTETTER, Robert 4-60

- 1-60. Viejas minas de plata en Macuelizo Nicaragua Servicio Geol. Nac. Bol. 4, p. 39-59, illus., 1960.
- 2-60 (and GIUDICE, Daniele del) Reconocimiento geológico del Valle de Punta Gorda Nicaragua Servicio Geol. Nac. Bol. 4, p. 61-83, illus., geol. sketch map, 1960.
- 3-60 (editor, and others) Reconocimiento geológico-minero para el fosfato en el Departamento de Rivas Nicaragua Servicio Geol. Nac. Bol. 4, p. 85-117 incl. tables, and illus., 1960.

ZUBOVIC, Peter

- 1-60 (and STADNICHENKO, Taisia Maximovna, and SHEFFEY, Nola Bewley) Relation of the minor element content of coal to possible source rocks Art. 40 in U. S. Geol. Survey Prof. Paper 400-B, p. B82-B84 incl. tables, 1960.
- 2-60. (and STADNICHENKO, Taisia Maximovna, and SHEFFEY, Nola Bewley) The association of some minor elements with organic and inorganic phases of coal Art. 41 in U. S. Geol. Survey Prof. Paper 400-B, p. B84-B87 incl. diagrams and tables, 1960.
- 3-60. (and STADNICHENKO, Taisia Maximovna, and SHEFFEY, Nola Bewley) Comparative abundance of the minor elements in coals from different parts of the United States Art. 42 in U. S. Geol. Survey Prof. Paper 400-B, p. B87-B88 incl. table, 1960.
- 4-60. (and SHEFFEY, Nola Bewley, and STADNICHENKO, Taisia Maximovna) Geochemical associations of certain minor elements in coal [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 2009, Dec. 1960

ZULBERTI, John L.

- 1-60. Exeter and 29-D pools of Midway-Sunset oil field California Oil Fields--Summ. Operations Jan.-June 1960, v. 46, no. 1, p. 40-50, illus., 1960.

ZULLO, Victor A.

- 1-60. Eocene species of the genus Balanus (Cirripedia) [abs.] Geol. Soc. America Bull., v. 71, no. 12, pt. 2, p. 2084, Dec. 1960

ZUMBERGE, James Herbert

- 1-60. Correlation of Wisconsin drifts in Illinois, Indiana, Michigan, and Ohio Geol. Soc. America Bull., v. 71, no. 8, p. 1177-1188 incl. sketch map and chart, Aug. 1960
- 2-60. Bibliography of published geologic papers and unpublished theses of the Great Lakes and their drainage basins, 1950 through 1958 Michigan Univ. Great Lakes Research Div. Pub. 4, p. 51-59, 1960.

ANONYMOUS

- 1-60. Carl Huntington Broedel [1908-1959]. Geol. Soc. America Proc. 1959, p. 169, Oct. 1960
- 2-60. Earl McCracken [1900-1959]. Geol. Soc. America Proc. 1959, p. 173, Oct. 1960.
- 3-60. Vivian O[uray] Tansey [1891-1959] Geol. Soc. America Proc. 1959, p. 175, Oct. 1960.
- 4-60. Henry Russel Wardwell [1913-1958] Geol. Soc. America Proc. 1959, p. 177, Oct. 1960.





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      - Particles in petroleum, size and shape Witherspoon, P. A. 1-60
  - General
    - Origin, terminology, use, historical review Abraham, Herbert. 1-60
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    - Dickenson County, well core, chemical and physical analyses Headlee, A. J. W. 1-60
  - Associations
    - American Geological Institute
      - Future Moore, R. C. 2-60
      - Reorganization proposed, higher standards for geologists Oil and Gas Journal. 1-60



- Associations — Continued  
 Coastal Geography Conference  
 Second, 1959, summary  
 Valentin, Hartmut. 1-60  
 Four Corners Geological Society  
 History Four Corners  
 Geological Society 1-60  
 International Union of Geodesy  
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- Sediments  
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- Bibliography  
   Alabama  
     Geology, 1935-58 Hastings, E. L. 1-60
- Arctic America  
   Arctic Institute of North America. 1-60
- Baker, M. B.  
   Ambrose, J. W. 1-60
- Cartography  
   Historical Ristow, W. W. 1-60
- Coastal sedimentation  
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- Cuba  
   Geological, 1781-1955 Wassall, H. W., 3d. 1-60
- Economic geology  
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- Experimental petrology  
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- Foraminifera  
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- Geochemistry  
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- Great Lakes Zumbeke, J. H. 2-60

## BIBLIOGRAPHY

### Bibliography — Continued

- Gypsum and anhydrite
  - United States and Puerto Rico
    - Withington, C. F. 1-60
- Humid tropics
  - Annotated Hills, T. L. 1-60
- Internal constitution of earth
  - Birch, A. F. 5-60
- Kentucky
  - Cumberland River Valley,
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- Mollusca
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- Nuclear science
  - Abstracts United States
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- Ohio
  - Devonian-Mississippian shale
    - Hoover, K. V. 1-60
- Oil and gas
  - Descriptive, 1860-1960
    - Swanson, E. B. 1-60
- Oil shale
  - United States Bureau of Mines
    - Cowan, M. K. 1-60
- Oklahoma
  - Geology, 1959 Curtis, N. M., Jr. 1-60
- Ontario Department of Mines
  - Publications list Ontario Dept. Mines. 1-60
- Ostracoda
  - Paleozoic Sohn, I. G. 3-60
- Paleontology
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### Bibliography — Continued

- Photogeology
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